

UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE DESTRUCTION OF THE TRINITY RIVER, CALIFORNIA

(1848-1964)

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Philosophy

By

RICHARD D. ADKINS

Norman, Oklahoma

2007

UMI Number: 3264590

Copyright 2007 by
Adkins, Richard D.

All rights reserved.

UMI[®]

UMI Microform 3264590

Copyright 2007 by ProQuest Information and Learning Company.
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

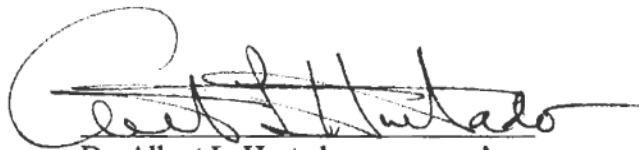
ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

THE DESTRUCTION OF THE TRINITY RIVER, CALIFORNIA

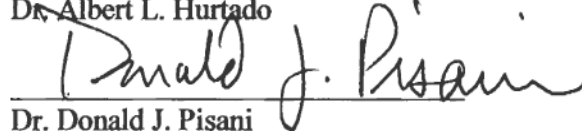
(1848-1964)

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF HISTORY

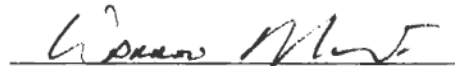
BY



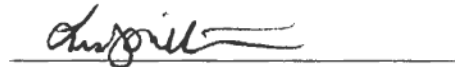
Dr. Albert L. Hurtado



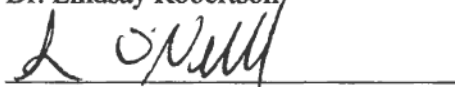
Dr. Donald J. Pisani



Dr. Warren Metcalf



Dr. Lindsay Robertson



Dr. Sean P. O'Neill

ACKNOWLEDGMENTS

During my research on this dissertation, I visited a number of repositories and benefitted from the generosity of many individuals. Specifically, I would like to thank Richard Fusik and Mary Francis Morrow of the National Archives who know RG 75 like the backs of their hands. I wish to acknowledge the assistance of the staff at the National Archives II in College Park, Maryland, and the staff at the National Archives Regional Branch, San Bruno California, who proved invaluable assistance, and went out of their way to aid me in my work. The staff at the Bancroft Library and the California Water Resources Library at the University of California, Berkeley tracked down obscure mining and water-related materials. Also, the staff at the Shields Library, University of California, Davis, the California Historical Society and the Wells Fargo Museum in San Francisco. The staff at the Humboldt Room, Humboldt State University, Arcata, provided access to one-of-a-kind documents on the history of northwest California. United States Forest Service personnel in Eureka and Weaverville generously allowed me to consult reports and land-use documents produced by their agency. Finally, thanks to the staff and volunteers of the Trinity County Historical Society, Weaverville, California who enthusiastically provided access to their impressive collection of documents relating to Trinity County. Among the most enthusiastic people who assisted my work there was Patricia Hicks - special thanks to you Patricia, and good luck in your retirement.

This dissertation grew out of a contract with the Hoopa Valley Tribal Council for a study of the historic navigability of the Trinity River. I wish to thank the Council and tribal attorneys for the opportunity to work with them in their continuing effort to

mitigate the long-abused Trinity River, and for allowing me to use the research I compiled for them in writing this dissertation. The Hupa people maintain their strong sense of place and still view the Trinity River as central to their world and ensure balance for all of us through their continued vigilance, dances and ceremonies. I would also like to thank Dr. Albert Hurtado for his patient guidance as my mentor and friend, and as the person without whom I would not have been introduced to the tribal attorney for the Hoopa Valley Tribe, nor would I have had the opportunity to research this topic and gain invaluable research experience. Of the numerous people who assisted me in countless ways during the writing of this dissertation, I wish to offer thanks. For their assistant and encouragement through dark days and bright, I wish to thank Dr. Eric Henderson for his comments, and for helping me see the humor in the writing process; Dr. Joel Shrock for comments, great memories fishing for bass at the Ruby Marshes, and for showing me that it can get done no matter where you find yourself writing; to Mandi Laughter, friend, editor and bright example of how to conduct oneself in the face of unexpected adversity; to Dr. Amy Williamsen who graciously read and re-read my drafts, offered advice, and provided warm meals and a comfortable working environment; and finally, to the numerous people I have forgotten to name specifically who assisted me in researching and writing this dissertation, my sincere thanks.

TABLE OF CONTENTS

Introduction

Chapter 1: Pre-Contact Indians People and the Trinity River Basin to 1848

Chapter 2: The End of Indian Time: The Trinity River Basin 1858

Chapter 3: Confining Trinity River Indians to a Reservation: 1858-1864

Chapter 4: Industrial Mining and the Decline of the Fishery: 1864-1898

Chapter 5: Logging, Mining and Irrigation in the Trinity River Basin: 1900-1940

Chapter 6: Over the Hills and Far Away: The CVP and the Trinity River Basin, 1920-1964

Conclusion

References Consulted

INTRODUCTION

This study began as a contract for the Hoopa Valley Tribe of the Hoopa Valley Indian Reservation in far northwestern California. Counsel for the Hupa (the spelling of the name of the people is Hupa, as opposed to the name of their valley - Hoopa Valley, and tribe, Hoopa Valley Indian Tribe) wanted to answer questions about the history of the Trinity River which bisects Hoopa Valley running from south to north until it merges with the Klamath River at Wietchpec. The Klamath then flows northwest to the Pacific Ocean. Today, the Hoopa Valley Indian Reservation encompasses not only the aboriginal home of the Hupa People (Hoopa Valley, also known as “the Square”) but also includes an area running from Wietchpec to the Pacific Ocean reaching 1 mile on either side of the Klamath River for a distance of 40 miles.¹ Executive Orders issued in the late nineteenth century added this additional territory in two sections commonly referred to as the “Extension” and the “Connecting Strip.” Tribal counsel asked that an historian research topics on the history of the Trinity River that might reveal the natural state of the river before the Bureau of Reclamation dammed and diverted it in the early 1960s by building the Trinity River Project, also known as the Trinity River Division (TRD) of the Central Valley Project (CVP). The confidential report for the Hupa Tribe was completed in October 2000, and was submitted to the Tribal Attorneys. The conclusions of that report are not discussed herein. However, while researching the issues that concerned tribal attorneys, data gathered revealed that the Trinity River and Basin overall underwent

¹The Klamath River from Wietchpec to the Pacific is the aboriginal territory of the Yurok Indians.

changes of surprising rapidity, with far-reaching consequences for the natural health of the Basin, and the people living there, both Indian and non-Indian. It is that history that is addressed in this study.

Because of the nature of the question posed by Tribal Counsel, I had to conduct research on a wide range of topics and cast my net far enough to catch information that might somehow be useful. This approach became necessary after I began the initial reading of published secondary sources. Soon after I started work on the project, I discovered that there is a paucity of published material on the Trinity River Basin, and for that matter, all of northwestern California. The few monographs available are often dated, some are inaccurate, and most did not contain the information needed for my work. Local histories were usually written by non-professional history enthusiasts, and while long on anecdote and often entertaining, they tend to usually fall short on thorough research and analysis. Because of the lack of published sources, I had to visit numerous repositories to gather data for the report for the Tribe, and subsequently conduct additional archival research to allow me to write this dissertation. I worked at National Archives I, Washington, D.C., and at the National Archives II in College Park, Maryland, I conducted research on obscure land records at the Suitland Reference Branch of the National Archives in Suitland, Virginia, and at National Archives Regional Branches at San Bruno and Laguna Niguel, California (Pacific Region), and Seattle, Washington (Pacific-Alaska Region). I also investigated records at the Bancroft Library and the California Water Resources Library at the University of California, Berkeley, and at the California Room of the California State Library, the California State Archives and the California State Water Library in Sacramento. The Shields Library, University of

California, Davis, provided access to materials on irrigation in California. The California Historical Society and the Wells Fargo Museum in San Francisco gave me access to their unique collections, and I worked at Humboldt State University, Arcata California as well as the Eureka County Historical Society Museum, Eureka, California. The cultural and natural resources staff at the Six Rivers National Forest in Eureka and the Forest Service Archaeologist in Weaverville, California allowed me to consult reports and land-use documents produced by that agency, and the Trinity County Historical Society, Weaverville, California, gave me access to manuscript collections and newspaper files that are a treasure of data on the region. Finally, Counsel for the Hoopa Valley provided access to their historic data housed at their home office in Seattle, Washington.

This is a study of the change over time in the Trinity River Basin. The Trinity River Basin in northwestern California is approximately 2,860 square miles. The topography of the Basin is rugged and mountainous, there are few valleys in the Basin, and little arable land. The Basin is in the region that receives the highest yearly rainfall totals in all of California, and some of the numerous streams and rivers in the area have among the highest discharge levels ever recorded in the State. In fact, the largest river in the Basin, the Trinity River, has a record discharge of 231,000 cubic feet per second (cfs), recorded on December 22, 1964. The 170 mile long Trinity River plays a central role in this study.² The Trinity River is one of fourteen major rivers draining northwestern California and it is the major tributary of the Klamath River, another river

²This information is synthesized in Jeffrey F. Mount, California Rivers and Streams: The Conflict Between Fluvial Process and Land Use (Berkeley: University of California Press, 1995), 179. Mount gleaned this data from reports issued by the U.S. Geological Survey and the California State Lands Commission.

that will play a role herein.

Several indigenous groups with varying cultural and land-use practices populated northwestern California and the Trinity River Basin prior to white contact in the late 1840s. For the Indians living in the Basin and nearby, subsistence was gained by exploiting nearby natural resources. Anadromous fishes, acorns, plant foods and game sustained the Indian people of the Basin. In fact, the area was so biologically rich and diverse that the Indian people living there never traveled far from their homes in search of food.³ They usually only left their home territories to secure trade goods, for war, or participate in religious ceremonies. This small, intimate, pre-contact world was shattered by the arrival of non-native peoples after the discovery of gold on the Trinity River in 1848. The non-Indian people who moved into the Trinity River brought with them a wholly different conception of how natural resources were to be used, what made these resources “valuable” and a different idea of how resource ownership functioned. Gold was the attraction for non-Indians who ventured to northwestern California, but its importance dwindled over time. By the twentieth century, other resources such as anadromous fish, timber and water rose in value and were exploited for profit. Thus, the transformation of the Trinity River Basin that began with the arrival of gold seekers, continued in different ways as the types of resources exploited changed and the scale of the exploitation increased.

³For an overview of the subsistence practices of the California Indians see, Robert F. Heizer and Albert B. Elsasser, The Natural World of the California Indians (Berkeley: University of California Press, 1980). For specific data on the peoples inhabiting the Trinity and Klamath river region, consult Arnold R. Pilling, “Yurok”, in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 137-154; William J. Wallace, “Hupa, Chilula, and Whilkut,” Ibid., 164-179; and William Bright, “Karok,” Ibid., 180-189.

For the pre-contact population living in the Trinity River Basin, especially the Hupa Indians, the Trinity River held significance unimaginable to those who arrived after the beginning of the Gold Rush. The river was a key source of sustenance for the Basin's indigenous peoples. Twice a year runs of salmon and other anadromous fishes were taken, and Indian fisherman filled food storage baskets that assured survival of their families through the lean winter. As did many peoples of northwestern California, the Hupa on the Trinity River, and the Yurok and Karok on the Klamath, assured a return of the fish by practicing the proper ceremonial observances and acted to balance the world thus ensuring the fish would return again. The success or failure of the river to provide could be the difference between life and death. The river provided life, but the people ensured that the river would do so by observing proper ceremonial/religious behavior.⁴

Rivers physically connected the native people of the region to one another, oriented them towards one another, and helped them identify each other. For practical reasons, rivers were avenues of communication for native peoples who used redwood canoes, or walked along the trails near the river to meet and trade and celebrate. But rivers also oriented the people in their world. The terms "upriver" and "down-river" defined a person's place along the river. In fact, the names for two large tribes along the Klamath River below and above the confluence of that river with the Trinity, are the Karok and the Yurok. These names roughly translate as "upriver people" and "down-

⁴Virginia Egan-McKenna, "Persistence with Change: The Significance of Fishing to the Indians of the Hoopa Valley Reservation in Northwestern California", Thesis: University of Colorado, Department of Anthropology, 1983., 50.

river people” respectively, and were the terms used by their neighbors to describe them.⁵ A person gained personal identity from where they lived along regional rivers, but also identified others living elsewhere. Interestingly, today the pre-contact practice of using the terms “up-river” and “down-river” to place a person geographically has been adopted by the non-indigenous population along the Trinity and Klamath rivers. The author, while sitting in a café in Weaverville, California during research for this dissertation was asked by a food server, “I’ve not seen you here before, are you up-river or down-river?”

Methods of gold recovery changed over time and became highly industrialized and greatly destructive. Logging and commercial fishing on the coast, combined with mining in the Basin to transform the health of the anadromous fishery. The rivers and streams of the Basin became a convenient waste disposal system for mining and logging debris, while commercial fishing at the mouth of the Klamath prevented many salmon from returning to the Trinity River Basin to spawn. By the twentieth century, the Hupas responded to the changes by mining, logging and irrigation farming in Hoopa Valley. As the twentieth century moved forward and hydroelectric technology advanced, the waters of the Trinity River Basin became an important resource to power companies, but as agriculture in the Central Valley expanded, the Basin’s water was also seen as a possible source of additional cheap irrigation water that from the farmers’ perspective was just being wasted.⁶

⁵This information has been gathered from many sources. The best single synthesis to consult is Handbook of North American Indians: Volume 8, California, ed. Robert F. Heizer, Washington, D.C., Smithsonian Institution, 1978., 137-154, 180-189, 164-176.

⁶Although water rights and litigation are not addressed in this dissertation, it is important to note that one of the earliest water rights cases heard in California involved the rights to water in the Trinity

The participation of the federal government in the construction of massive water-conveyance systems and hydroelectric projects combined with the rise of agribusiness in the Central Valley. The desire to expand the supply of inexpensive water for growers in the Central Valley led the Bureau of Reclamation to build the Trinity River Division (TRD) of the Central Valley Project (CVP). The bureau constructed two large earthen dams on the Trinity, impounding the river and diverting more than 80% of the Trinity River at the point of diversion.⁷ The project also included hydroelectric generation facilities. After the completion of the project in the early 1960s the Basin had become transformed into a much different place than the one encountered by white miners in the early 1850s.

Given the significance of this dramatic process of transformation, this study focuses upon resource exploitation by humans, and the tensions and competition between different interest groups on the federal, State and local levels. It becomes clear that there really was no central decision making process. All groups played some role, whether active or reactive, in moving the history of the Trinity River Basin in the direction it has gone. The physical transformation of the Trinity River Basin can best be understood by keeping in mind that the Trinity River serves as a barometer of change. It is essential to remember that the Trinity River was not static and unchanging before whites invaded the region. Yet the difference between pre and post-contact change along the Trinity River is one of time and scale. While discussing physical alterations in the Basin, changes in the

River Basin and the concept of Prior Appropriation. See Donald J. Pisani, Water, Land, and Law in the West: The Limits of Public Policy, 1850-1920 (Lawrence: University of Kansas Press, 1996), 24-37.

⁷Jeffrey F. Mount, California Rivers and Streams, 328.

Trinity River will be noted and will help reveal the magnitude of change that swept the Basin and forever altered the lives of the Indian people who lived there. In fact, the experiences of the Indians in the Trinity River Basin—the changes imposed upon them and their responses to these changes—serve as a compelling analogy of the dynamic process of “modernization.” Their history embodies the transformation that took place within the Basin because of the interplay among various competing interest groups.

It is important, however, to have a basic understanding of river behavior in order to understand and “read” the Trinity River as a barometer of the larger changes in the Basin. First, it is imperative to note that all rivers seek equilibrium: a balance between the discharge (water flowing down a river) and sediment (sediment and organic material) received, combined with the work (energy) that moves discharge and matter along the channel. Put simplistically, the profile of a river is determined by how much matter and discharge it receives, the work it does in moving it, and the geological material over which it passes. This process determines a river’s channel characteristics. As Jeffrey Mount, a California-based Geomorphologist succinctly states:

The concave-up longitudinal profiles of rivers and their alluvial flood plains with the meandering channels and associated riffles and pools are all the product of the rivers’ attempt to spread that work out as evenly as possible. In this manner rivers are self-regulating, evolving just the right pattern and profile to handle the amount of discharge and sediment delivered to them. This balance is termed *grade* (not to be confused with

slope or gradient) and records a state of *equilibrium* within a river system.⁸

Rivers, therefore, are continually adjusting to changes in discharge and matter provided to it by its watershed.

It may appear to the casual observer that a river changes drastically in its channel characteristics within short periods of time, say ten to a hundred years. But when looked at over a much longer period of time, hundreds, or even thousands of years, geomorphologists theorize that rivers actually change relatively slowly around a mean condition. “ Short- and medium-term variations will continue to take place, but they will shift around some slowly changing mean condition.”⁹ It takes a significant disruption in the system, such as geologic uplift, climate change, or highly disruptive land-use practices, to alter the long-term mean condition of a river system. The abrupt, seemingly obvious changes to a river channel noticed by a person in a single lifetime are usually only short-term river channel adjustments related to discharge, matter and energy, and these occur around the long-term mean condition of the system. Therefore, for a river where there have been no major tectonic events, climatic changes, or extreme permanent alterations of the river system (for example, by erecting a dam), the river will overcome the observable changes it experiences because of floods, drought, or even the deposition of large amounts of debris.¹⁰

⁸Jeffrey F. Mount, California Rivers and Streams, 10.

⁹Jeffrey F. Mount, California Rivers and Streams, 11.

¹⁰Jeffrey F. Mount, California Rivers and Streams, 11-15. The theory upon which this discussion is based, *dynamic metastable equilibrium*, was conceived by Stanley Schumm and synthesized by Mount. The theory suggests that significant change in a river system takes place in two ways: extreme, or dramatic shifts over short periods of time, with gradual shifts over a long period of time in between. This process

The Trinity River, like any river, experienced slow change over a long period of time. Abrupt disruptions occasionally occurred, such as floods, droughts, and landslides, but these events were overcome by the system that continued seeking equilibrium. Taken together over a long period of time, these changes would have altered the river's flow regime, sediment load, chemistry and morphological characteristics. The rapid, short-term changes would have been obvious to the pre-contact inhabitants along the Trinity River. The Indians of the Trinity River Basin witnessed floods, droughts, and other events that caused obvious short-term changes in the river system such as extreme deposition or erosion. These events may have been severe enough to interfere with the runs of anadromous fishes, but the fish eventually returned to the Trinity. The long periods of slow change, on the other hand, would have been imperceptible to the Native peoples along the river. The Trinity continued to do its "work" by moving water and depositing or moving sediment because of the energy that propels any river system. Once disturbed by a disruptive event, the forces that created the river's characteristics continued operating, moving the river back toward a "balance" around a long-term mean condition. The river, we know, never achieved a perfectly balanced, unchanging state, but it did not change drastically within the lifetime of the average human being.¹¹ All that began changing with the arrival of non-indigenous peoples in the late 1840s.

eventually changes the long-term mean condition of the system.

¹¹While this study relies heavily upon the work of Jeffrey Mount, for additional information about river dynamics, see California Rivers: A Public Trust Report (Sacramento: California State Lands Commission, 1993); Geoffrey E. Petts, Impounded Rivers: Perspectives for Ecological Management, (New York: John Wiley and Sons, 1984); Natural and Anthropogenic Influences in Fluvial Geomorphology : the Wolman Volume, John E. Costa, et al, eds. (Washington, D.C.: American Geophysical Union, 1995); G.P. Williams and M.G. Wolman, Downstream Effects of Dams on Alluvial Rivers, U.S. Geological Survey Professional Paper Number 1286. (Washington, D.C.: 1984).

The fact that long-term change in rivers usually occurs slowly is significant to this study for three reasons. Among the most important relates to the wildlife that evolved within the river system. The aquatic fauna that evolved in the Trinity River, most notably the anadromous fishes and the organisms they fed upon could—and did—adapt to the long-term changes in the system. Moreover, these animals could recover from short term dramatic events that periodically impacted the river. The fauna within the river adapted to the system over many centuries and became dependent upon certain river conditions for survival. Because these animals became dependent upon the system as it operated, they became part of the system itself. If a cataclysmic event occurred that quickly altered the river and permanently altered the factors that controlled the system to which they were adapted (such as permanent reduction in the discharge or permanent increase of the sediment load), the impact upon wildlife could be devastating.¹²

The second reason that the way a river experiences change over time is important to this study is because long-term change had significant implications for people too - especially the people that depended upon a functioning, relatively predictable system. For indigenous peoples who relied heavily upon the anadromous fishes of a river system for their subsistence, any catastrophic change to that system resulting in a major decline or elimination of anadromous fishes could have deadly consequences. This simple example tells us that many northwest California Indian groups were intimately tied to the rivers where they lived. While they could overcome short term events and long term

¹²Every river is unique because of the rock (geology) over which it flows, its altitude, the climate, temperature, flow regime, chemistry, gradient, and plant communities on its banks. These characteristics determine which species will live in a river. Because a river is a negative feedback system, disruption of a rivers characteristics can have catastrophic consequences for the river's aquatic fauna.

change over time, if something altered the river drastically, and permanently, these people could find themselves in a precarious situation. Obviously, this was the state of things for the Native peoples living along the Trinity River once the area was penetrated by non-indigenous peoples whose culture included a wholly different land-use ethic.

The final reason that the rate at which a river changes is significant relates to the arrival in the Trinity River watershed of large numbers of non-Indian peoples, mostly Euro-Americans, beginning with the gold rush. Beginning around 1850 and continuing thereafter, Euro-American land use activities continually disrupted the Trinity River system in ways comparable to the short-term, cataclysmic natural events. Deposition of mining debris is the most obvious, but there were water diversions, semi permanent dams and severe erosion that accompanied logging. These activities increased the sediment load of the river, fouled the water, killed fish and destroyed the habitat upon which the fish relied making it difficult for fish populations to recover. The reduction of fish populations is the most important reason the indigenous peoples of the Basin began resisting the invasion of the region by outsiders.

By the mid-1860s, the United States Army and State militia succeeded in subduing the indigenous population of northwestern California. Warfare, a severe reduction in population, and confinement to reservations removed the Indians as an obstacle to the process of Euro-American settlement. The way was opened for the unbridled development of the resources of northwestern California and the Trinity River watershed. The Euro-American world view held that the natural resources in the region were commodities available for exploitation within a free market system. By the 1850s, this non-indigenous world view had reached every corner of California and the West.

While opening of the Trinity River Basin was an environmentally destructive process, the events that impacted the Trinity River were not unique, and should be understood as part of the process that Thomas Berry had described as, “the globalization of destruction;” the process whereby the Trinity River was linked to the outside world and its commodity-driven western European inspired economic system.¹³

By the 1950-1960s, the most significant non-Indian impact upon the Trinity River Basin came about with the permanent alteration of the long term mean condition of the Basin river system. This occurred because of the construction of the massive Trinity River Division (TRD) of the Central Valley Project. The TRD diverted 80% of the Trinity River out of the Basin at the point of diversion and significantly reduced the overall discharge received by the Trinity River and the work it could do moving sediment. The drastic decline in the amount of water in the river, combined with the inflow of a large amount of sediment from mining and logging operations in the Trinity Basin, transformed the river.¹⁴ The diversion almost completely eliminated the seasonal high flows and flooding that were so critical to the functioning of the Trinity River and the health of the aquatic communities dependent upon them.¹⁵ With a drastically reduced flow and an increase in sediment, the river could no longer scour itself, nor could it maintain the riffle-pool habitat necessary to maintain an healthy anadromous fishery. For the Indian peoples of the Trinity River Basin, the construction of the TRD was most

¹³The phrase “globalization of destruction” is from Thomas Berry, interviewed on New Dimensions Broadcasting Network, Program #2611. www.newdimensions.org.

¹⁴The sediment load was augmented by the presence of historic mining debris.

¹⁵Jeffrey F. Mount, California Rivers and Streams, 328-29.

significant change wrought upon the river system and those changes are still being felt today. Non-indigenous resource exploitation within the Trinity River watershed altered the river on the scale of a major tectonic event in a very brief period of time. “In the geologic blink of an eye, a billion years of California river processes were transformed.”¹⁶

The goal of this study is to understand the changes imposed on the Trinity River Basin by outsiders, and how various interest groups fueled that change. First, it will address the history of the activities of Euro-Americans seeking to use the resources of the Trinity River Basin, and how these activities altered the river. Gold, fish, timber and water were the resources that brought Euro-Americans to the region, and the exploitation of each resource had an important impact on the river. Second, this study will examine how some Native peoples adapted to the exploitation of the resources and changes wrought by Euro-Americans. To understand these changes, it is necessary to examine specific resource-related activities. The changes brought to the Trinity River watershed permanently altered the river’s morphology, and also impacted the lives of Native peoples living along its course and their close relationship to the Trinity. Within this context, many federal and state policies and decisions are interpreted as attempts to satisfy Euro-Americans desire to exploit the region’s natural resources for their own benefit within the larger context of the expanding western European type economic system. Also, the polices and decisions regarding the Native peoples of the region are interpreted as an effort to reconcile the presence of Native peoples closely tied to the

¹⁶Jeffrey F. Mount, California Rivers and Streams, 190.

region's natural resources with the desire of Euro-Americans to exploit those resources. Decisions seemingly unrelated to the lives of Native peoples nevertheless had unintended consequences for them and the river itself, while the policies and decisions aimed directly at them often failed to fully achieve their stated goals. The indigenous inhabitants, once subdued, were to be decoupled from their pre-contact land use practices, and reconnected to the land in such a way as to mirror Euro-American land use practices as well as economic and environmental values. The shift in the Basin from a wholly indigenous to a mostly European way of using and perceiving the river and the resources associated with it did not wipe away the region's Indigenous peoples, many still hold a distinctly non-European world view of the Trinity River.

Before contact, several distinct Native cultures thrived throughout the Trinity River Basin. When it is necessary to discuss the Native peoples of the region in this study, I focus most heavily upon the Hupa Indians. At contact the Hupa were well established in Hoopa Valley which is one of the few areas suitable for agriculture along the Trinity River, although the Hupas did not farm. They had a productive relationship with their surroundings, with the Trinity River and its resources, and with their neighbors. These relationships were not only social, political and economic, but spiritual as well. Spiritual belief permeated their daily experiences giving meaning to their lives, relationships and actions, and particularly their relation with natural resources. The Hupa were a significant presence in the region, and were numerous and powerful enough to maintain their presence in their traditional home to this very day. Unlike most of the regions' indigenous population, the Hupa managed to hold fast in their clash with white invaders. Eventually they were assigned a reservation, but rather than being removed, the

federal government merely drew a line around their valley and left them where they were first encountered by whites: Hoopa Valley.

The time frame examined herein is from the arrival of the first non-Indians early in the nineteenth century, through the completion of the Trinity River Division of the Central Valley Project in 1964. Throughout this period the health of the Trinity River has been a barometer of change wrought by the activities of non-Natives along its course. The world view held by the Hupa and their neighbors was incompatible with that of those who invaded the region in the nineteenth century. The experiences of the Hupa Indians and the changes to which they have adapted are better understood through an examination of the changes wrought upon the Trinity River and its Basin. These events began when Euro-Americans discovered gold on the river in 1848, and continued long thereafter. The Hupa remained in Hoopa Valley, but they adapted to many changes and chose to, or were forced to, considerably alter their lives. The manipulations of the Trinity River since the mid-nineteenth century, whether for private or public use, are overtly displayed, and because of the competition between, and the activities of private, state and federal interests, the controversy over how to use the Trinity River still continues.¹⁷

This dissertation will not address the evolution of water rights, nor the conflicts related to water rights. I am well aware that water rights play a crucial role in the overall history of the region and look forward to addressing these issues fully in a later study. It is also important to remember that activities affecting the lives of the Hupa and other

¹⁷"Trinity River decision pleases California Tribe, not farmers", January 12, 2001, www.cnn.com/2001/US/01/12/trinity.river/index.html

indigenous peoples did not always take place in Hoopa Valley or along the Trinity River. Often, events upriver, down river, and well outside the region had as much significance as events occurring within the watershed. The completion of the Trinity River Division of the Central Valley Project marked a new era in the history of the river brought about by rising environmental consciousness and a divergence of state-federal policy in the management and use of California's rivers. The Trinity River Division, officially completed in 1964, irreversibly linked the Trinity River with the waters of the Central Valley Project creating new bureaucratic federal and state involvement in the management of the river. After 1964 the Trinity River was inextricably tied to intrastate and inter-basin water management issues and controversies that are well beyond the scope of this dissertation.

The present study begins by addressing the pre-contact peoples of the Trinity River Basin and their subsistence practices, life ways and religions in relation to their environment. In Chapter Two, I look at the arrival in the Basin of the first non-Indian peoples, their interaction with the native inhabitants and the ensuing struggles over resource use and control. Chapter Three explores the efforts of the Federal Government and local non-Indian attempts to remove Indians from the region or confine them to reservations in order to clear the way for their exploitation of natural resources. Chapter Four examines the rise of industrialized gold mining, logging and the impact of these activities on the anadromous fishery of the Trinity River Basin. Chapter Five focuses on the changing life ways of the Hupa people after the dawn of the twentieth century and explores their efforts to direct their own economic future within the Trinity River Basin. They attempted to adapt gold mining, logging and irrigation as viable responses to the

changes imposed upon them and their land by others. The final chapter analyzes how interests from outside the Trinity River Basin sought to exploit the major remaining resource of the region—water—by diverting the Trinity River, taking 80% of its flow from the Basin, for their own purposes without regard for the region’s inhabitants. At the end of this period, the Trinity River and the Basin become linked to the larger irrigation and electrical power systems of the Central Valley with outside forces determining how the Basin’s water is managed.

This study was influenced by numerous articles, essays and monographs addressing a number of topics. While there are many monographs on the west, water, gold, timber, American Indians, Indian-White relations, changes along rivers, and changes within river basins. The Basin has a unique history that does not fit nicely into previous approaches to similar topics. Three historic monographs did inform my approach to the Basin as the scene of change over time brought about by competing interest groups. The studies are Robert Kelly Schneiders’ *Unruly River: Two Centuries of Change Along the Missouri* (1999); Karl Jacoby’s *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (2001); and James C. Scott’s *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1998). Schneiders’ *Unruly River* addresses the topic of change along the Missouri River by looking at the changes caused not only by bureaucracies such as the Army Corps of Engineers and the Bureau of Reclamation, but also changes caused by the actions of local peoples living near the river in towns and communities suffering from floods and ice floes. The river was also modified to help steamship companies that persuaded the federal government to alter the river to improve navigation for commerce.

Finally, Schneider addresses the changes made to the Missouri River brought about by the river's unruly behavior itself. Attempts at flood control, channelization, and damming the river to control its unruly behavior altered the Missouri, but with unforeseen consequences. Throughout the study, it is the competition between interest groups that drove changes along the Missouri.

Jacoby's *Crimes Against Nature* looks at the rise of the American conservation movement in the nineteenth and early twentieth centuries. Essentially, Jacoby states that the historic myth of the conservation movement is that it arose with the likes of Marsh, Fernow and Pinchot, and other early adherents to conservation, and that prior to the conservation movement, "rural" folk, within the myth of American rugged individualism, did as they pleased in the natural world and exploited nature and her bounty with no regard for others, the future of the resource, or the natural landscape. Yet Jacoby shatters that myth by showing that rural people, from white settlers in the Adirondacks to Havasupai Indians in the Grand Canyon, exercised "local, extra-legal" systems of control over their resources that worked well for them within their particular circumstances. Jacoby cautions us not to sentimentalize or romanticize the pre-contact and rural systems of local control because their success depended just as much upon exclusion of non-tribal and community members as it did upon the inclusion of those who had to participate within the system to make it work. Jacoby states that these extra-legal systems broke down with the arrival of outsiders who imposed new forms of resource control upon the rural people and Indians living in areas where they already had an intimate understanding of their surroundings, and the impact they had upon the local landscape. With the arrival of outsiders unfamiliar with the local system of controls and the local and regional

ecosystems, new rules (codified laws) were imposed from the top - down upon people who had successfully managed their resources prior to the arrival of strangers in their lands.

Finally, Scott's *Seeing Like A State*, is a history of governments around the world and their attempts to impose various science-based land-use projects upon local landscapes to "improve" the lives of local populations, and how from the planning stage to the actual end product, numerous forces came into play to ultimately foil the original intent of project developers and planners. In the United States, Scott looks at several projects designed to promote industrialized, "orderly" agriculture, modern irrigation farming, and scientific forestry. Within this context, Indigenous peoples are targets of programs imposed by the bureaucracy from the top-down in an effort "modernize" them and rationalized their land use practices. Forests, fields and irrigation works must be orderly, aesthetically pleasing, and efficient. This "scientific scorn for practical knowledge" lead inevitably to the failure of these schemes because the original planners did not take into account the local circumstances - whether economic, ecological, religious or cultural. Thus, top-down schemes experience "push-back" from local interests and the end result of the program tends to be wholly different from the original intent of its planners.

The interpretations put forth by Schneider, Jacoby and Scott apply to the Trinity River Basin and have informed this study. Schneider's assertion that interest group competition and the physical characteristics of the Missouri River drove change along that river, also played out in the Trinity Basin. Jacoby's study applies to the history of the region. The Indian people of the Basin carefully managed and understood their own

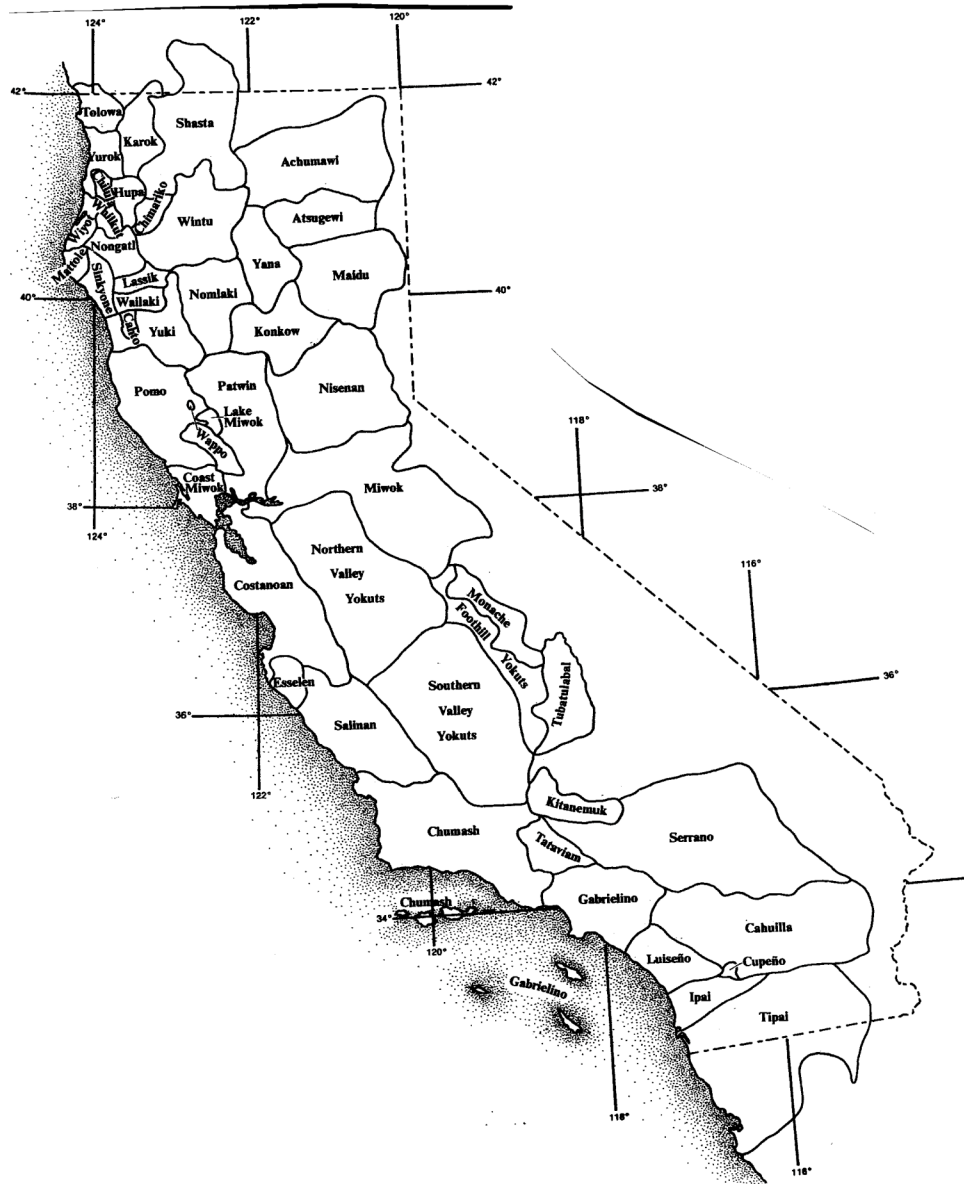
impact upon natural resources, but outside interests imposed a new resource management order upon local resources and disrupted the lives of people who once managed them.

Finally, Scott's analysis is born out within the Basin as well. The unintended consequences of government-imposed resource programs are seen not only in the attempts to re-direct Indian people away from traditional subsistence practices, but also in the unexpected impacts of mining, logging, commercial fishing, water diversion.

Chapter 1

Pre-Contact Indian Peoples and the Trinity River Basin to 1848

Prior to the arrival of non-indigenous peoples in the 1840s, the Trinity River Basin was Indian Country. The Indian peoples of the Basin controlled how they interacted with their surroundings, and over centuries developed complex social, political, and subsistence systems that allowed them to interact successfully with the surrounding environment. Numerous Native American tribes inhabited the region, each speaking diverse languages, living in scattered village communities, and practicing varied subsistence patterns, social and religious customs. The indigenous people of the Trinity River Basin exploited the richness of resources found nearby. The basin provided a wide variety of plant and animal foods as well as materials for building homes, weaving baskets, and making all of the tools necessary to support thriving populations. A brief list of the pre-contact tribes living within or bordering the Trinity Basin helps one grasp the diversity and complexity of indigenous peoples living in the area. Occupying the Trinity River Basin from the mouth of the Trinity to its headwaters were the Hupas, South Fork Hupas, the Chimarikos, and the Wintus. Northwest, north, and northeast of the Hupas lived the Yurok and Karok on the Klamath River, and Shasta on New River and Shasta River. West and southwest of the Hupas lived the Chilula, Whilkut and Nongatl, mostly centered on Redwood Creek. The tribes specifically living within the Trinity River Basin addressed on this chapter are the Hupa, Chimariko, Wintu; and because of their residence down river from these tribes, mention will also be made in this study of the Yurok and Karok Indians where appropriate.



Key to Tribal Territories of California Indian Tribes. The richness of California's natural resources allowed native peoples in the region to achieve some of the highest population densities in pre-contact North America. In northwestern California, the setting for this study, note the close proximity of native peoples of diverse languages and cultures. Source: Handbook of North American Indians: Volume 8, California, Robert Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., ix.

The Indian tribes living in or bordering on the Trinity River Basin were not large in terms of population, nor did they claim huge swaths of land. The rich diversity of resources meant that the native peoples of the Trinity River Basin did not need to claim large resource areas compared with such tribes as the Navajo in the Southwest or the numerous tribes of the Great Plains who practiced mobile subsistence patterns to wrench a living from the scattered resources upon which they relied. In northwest California, there was a superabundance of plant and animal foods such as acorns, pine nuts, deer, and elk, and anadromous fishes such as salmon, steelhead, eel and sturgeon. The richness of their surroundings made it unnecessary for the inhabitants of the Trinity River Basin to venture far from their homes in search of food. In fact, while the tribes of the Basin did not have large populations, they did have the highest pre-contact population densities of any Indian groups on the north American continent.

The noted anthropologist Alfred Kroeber classified the Hupa, Karok, Yurok and Chimariko as the most southerly people clearly demonstrating cultural traits known as the Northwest Culture Type. People exhibiting the traits of the Northwest Culture Type could be found from coastal Alaska to the extreme corner of northwest California. These culturally sophisticated people, according to Kroeber, relied heavily upon salmon and other anadromous fishes as a staple food source, and also used acorns as a significant protein source. Dentalium shell money (imported from British Columbia) was an important medium of exchange and a sign of wealth. In fact, wealth in the form of material and ceremonial goods determined a person's status within the community. A formal governmental structure and code of law was lacking, yet persons of wealth were esteemed within the village community and were looked to for resolving conflicts and

meting out justice. Women played a significant role not only in food gathering and processing, but also in the spiritual and social life of the communities. Women often acted as shamans, and in the process, acquired wealth and property. Unlike the classic expression of the Northwest Cultures Type among the native peoples of Alaska, coastal Canada and the Pacific Northwest, the people of the Trinity River Basin did not practice the potlatch. However, ceremonies such as the Jump Dance and White Deerskin Dance (discussed later in this chapter) were religiously and socially significant events that, among other things, helped to re-affirmed the status of individuals through a display of dance regalia (wealth) and feasts of salmon, game and acorn soup.

Topography, for the most part, determined settlement patterns and locations of villages within the Trinity River Basin. The majority of the region's indigenous people settled along the Trinity and other rivers because the topography of the Basin is so rugged. In the rare places where the land opened into broad valleys, such as at Hoopa Valley on the Trinity River, native peoples established village communities located on the valley floor. Yet, they still remained river-oriented and mostly depended on the riverine environment for subsistence. Places like Hoopa Valley, however, are scarce in the Trinity watershed. Most native peoples inhabited villages located on river terraces or at places convenient for fishing and communication. Prior to the disruptions in their settlement and subsistence patterns caused by the arrival of thousands of non-indigenous peoples in the 1840s, the native people of the Trinity River Basin relied upon rivers, streams, and the surrounding hillsides for subsistence. Thus, topography and a rich anadromous fishery explains why the native cultures of the pre-contact Trinity River

Basin reflected their riparian orientation.¹⁸

If one were to begin a journey in Yurok territory at the mouth of the Klamath River at the Pacific Ocean near Requa and travel inland, the reason for the riparian orientation of the regions' first inhabitants would become clear. The observer is first struck by the steep canyon through which the Klamath finds its way to the sea. The river flows through this canyon for much of its length forcing the people using its resources to settle and live close on its banks. Traveling upriver, one notices that the banks are dotted with small communities. At present, these places are inhabited by Native peoples and non-natives alike, but that was not always the case. Many once bustling Indian villages are today only archeological sites invisible to passing casual observers. Finally, others are non-native communities built on the sites of pre-contact native villages. It is significant that many are communities that have been continually occupied by native peoples prior to contact down to the present day, now including many non-native inhabitants among their residents.¹⁹

The Yurok claimed territory from the mouth of the Klamath River to the confluence of the Klamath and Trinity rivers at Weitchpec.²⁰ Like the inhabitants of the

¹⁸For a discussion of the tribes dependent upon and oriented towards the Klamath and Trinity rivers, see Arnold R. Pilling, "Yurok", in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 137-154; William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987.,164-179; and William Bright, "Karak," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987.,180-189.

¹⁹Arnold R. Pilling, "Yurok", in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987.,139.

²⁰The Coastal Yurok claimed land along the coast north and south of the mouth of the Klamath, but are not addressed in this study.

Trinity River Basin, the Yurok, whose spoken language is a part of the Algic language stock, relied upon the resources in the Klamath River and the surrounding countryside for their subsistence.²¹ They harvested salmon, steelhead, lamprey eels and, on occasion, sturgeon for a majority of their protein. They also traded goods from the interior with their coastal neighbors for seaweed, redwood canoes and other items not readily available inland. The Yurok hunted the surrounding hills for game such as deer and elk, and gathered acorns and other food, as well as grasses and shoots for basket weaving. The majority of Yurok lived in small village communities along the Klamath River, but there were also larger “clusters” of communities that were significant ceremonial and political centers, or strategic spots where the river could be forded and trade conducted within a wide trading network that connected various native peoples throughout the region.²²

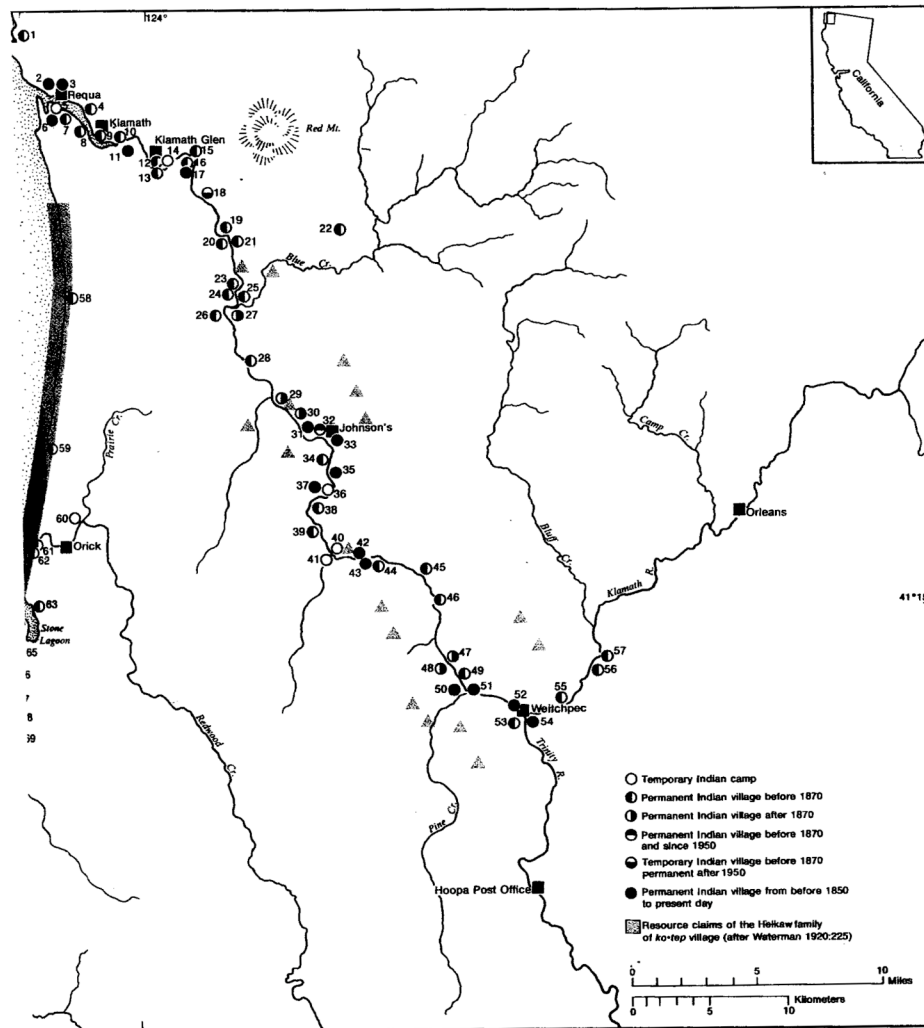
If one were to continue up the Klamath from Weitchpec, one enters the aboriginal territory of the Karok Indians. The Karuk language has been classified a Hokan language, but the evidence is uncertain. Today most scholars classify Karok as an “isolate” that might possibly be connected to Hokan. Because the Karok lived within the Klamath Basin along the Klamath River above Weitchpec, the point where the Trinity Basin meets the Klamath River. They are not addressed at length in this study.

However, their proximity to the Yurok on the lower Klamath and to the Hupa on the

²¹The Yuroks also inhabited the coast south of the mouth of the Klamath River. The coastal Yuroks were not oriented towards the rivers, but rather towards the Pacific Ocean. As such, the coast Yurok do not figure prominently in this study. They were an important source of trade items for inland riverine peoples, however. See Arnold R. Pilling, “Yurok”, in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987.,137-154.

²²Arnold R. Pilling, “Yurok”, in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 144-5. Today Requa, Johnson’s, Weitchpec and Pearson’s are communities that hold historic significance for the Yurok people.

Trinity River, as well as shared cultural traits, requires a brief description. Like the



Pre and post-contact Yurok villages and camps from Weitchpec to the mouth of the Klamath River and south along the Pacific Coast. Source: Handbook of North American Indians: Volume 8, California, Robert Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 139.

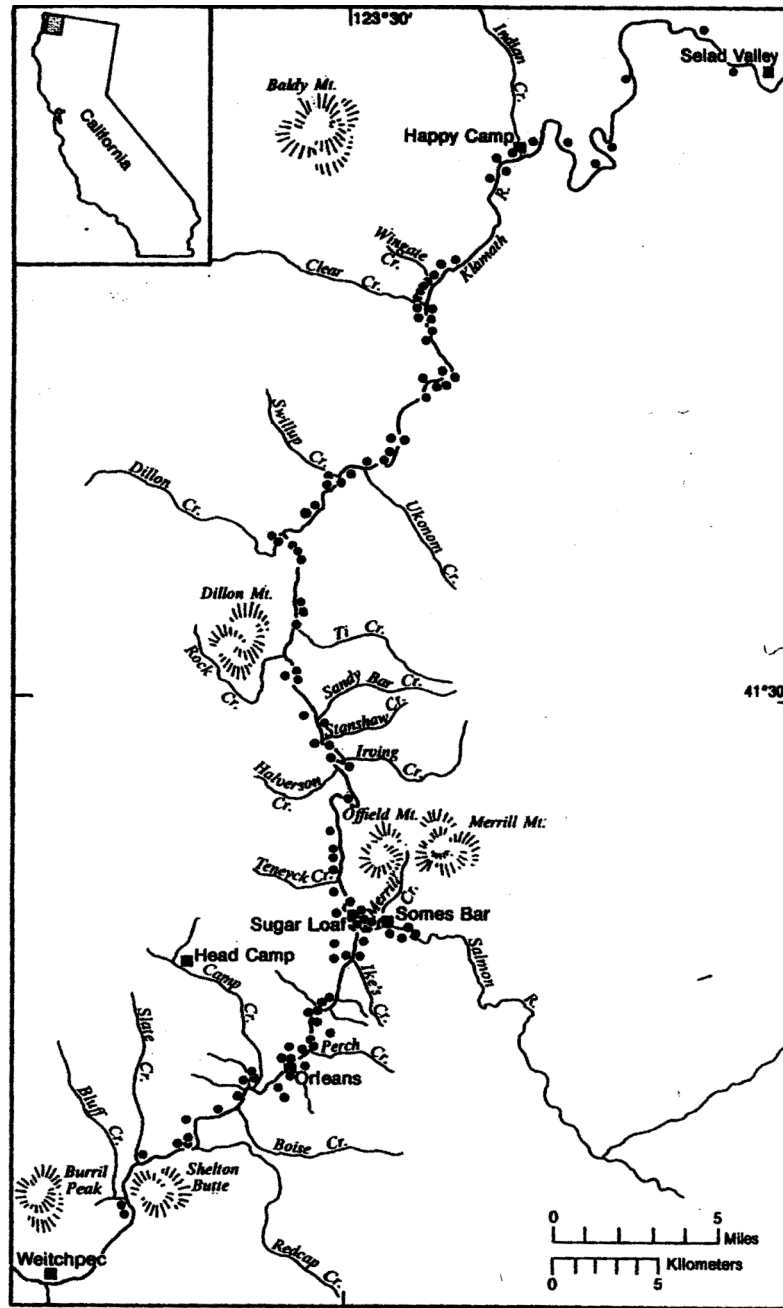
Yurok, the Karok depended upon the resources of the Klamath for much of their subsistence; they clustered in small communities on the middle reach of the Klamath near the river, and in their eastern territory were settled away from the river where the topography permitted. The noted anthropologist William Bright observed that the Karok:

occupied the middle course of the Klamath River...[where there were numerous] villages....located on the river or on tributary streams; the mountain country on each side was visited for hunting, gathering, and ceremonial activities. Those elements of the natural environment that were most important to the Karok were the river, up which the salmon swam each year; the fir forests on the mountain slopes, in which game could be hunted; and the oak groves visited annually for the acorn harvest.²³

Bright's description of Karok settlement patterns and subsistence practices is applicable to many of the indigenous pre-contact peoples of the region. Aboriginal Karok territory ended upstream on the Klamath at Seiad Valley where the boundary between the Karoks and the Shasta people to the east meet.²⁴ The Shasta do not figure prominently in this study, nevertheless, it must be noted that the Shasta traded extensively with their neighbors the Karok, Yurok and Hupa to the northwest, west, and southwest, and the

²³For a discussion of the Karok language, see Marianne Mithun, The Languages of Native North America, (Cambridge: Cambridge University Press, 1999), 435.; William Bright, "Karok," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 180.

²⁴William Bright, "Karok," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 180.



Pre and post-contact Karok villages and camps from Weitchpec up-river to the Seiad Valley. Source: *Handbook of North American Indians: Volume 8, California*, Robert Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 180.

Wintu and Chimariko to the south and southeast.²⁵

Retracing one's footsteps back down river to Weitchpec at the confluence of the Trinity and Klamath Rivers, one arrives at socially, spiritually and politically significant place within the Indian world of northwestern California. While standing at the confluence of the two rivers, what grabs ones attention is the color of the water. The Klamath River carries a high sediment yield and is muddy in color. The Trinity River, on the other hand, appears somewhat green from algae, but its waters are clearer than the Klamath. Here at Weitchpec the two river mingle and flow to the sea. This color variation is caused by the type of rocks through which each river flows. Highly erodible soils underlie much of the Klamath River while, for the most part, the Trinity flows through soils that are generally slow to erode making its water relatively clear.²⁶ While the color of the rivers speak to the geologic history of region, it fails to reveal the significance of Weitchpec. The site of Weitchpec is the territorial meeting place of the Yurok, Karok and Hupa Indians, three riparian peoples sharing what Kroeber classified as the Northwest Culture Type. These three tribes shared similar social, material and political cultures, yet they all spoke different languages.²⁷ Because the pre-contact

²⁵Shirley Silver, "Shastan Peoples," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 213.

²⁶The Trinity River today is dammed by the TRD which has increased temperatures in the river allowing algae to grow. The ruggedness of the region is a testimony to the fact the area is undergoing rapid uplift in geological terms. This tectonic phenomenon helps explain the topography of the region and influences the behavior of the regions' rivers, particularly the Trinity River and its tributaries. The Grass Valley drainage system which feeds the Trinity River is underlain by granitic, erodible soils. Logging of the region in the 1950s and 1960s created an sedimentation problem that on the Trinity River that still disrupts salmon habitat. Therefore, there are highly erosive soils in the Trinity River Basin, but these soils have been exposed by industrial logging and were undisturbed prior to contact.

²⁷The Hupas speak a language that is classified as Na-Dene Stock, which is part of the Athapaskan

territorial boundaries of the these three peoples met at Weitchpec, it was an important location within the social, political and religious system of pre-contact northwestern California. Because the Trinity River flows into the Klamath River, any disruptions of the Klamath River fishery below Weitchpec impacted the rivers and streams of the Trinity River Basin, and therefore, the people living there. All of the people depending upon the resources obtained from the rivers next to which they lived were equally vulnerable to any failure of those resources.²⁸ This is significant because while the material culture, subsistence practices, and even the spiritual beliefs of the Yurok, Karok and Hupa bound them together, they were equally bound by their dependence upon a resource that they all shared and understood, and that, through their religious observances, they nurtured and maintained.

At Weitchpec one has to turn southeast and enter the Trinity River Basin to reach the territory of the Hupa Indians. Heading southeast along the Trinity River, one encounters the rugged lower reaches of the Trinity River Canyon and the outlet of the Trinity River Basin. On a map, the Trinity River is shaped like a great U with the left tip of the U marking Weitchpec. From Weitchpec one travels through several miles of winding, rugged canyon along the Trinity River before reaching Hoopa Valley. Here the canyon opens into a broad valley averaging a mile in width and six miles in length. Surrounded by high, rugged mountains, Hoopa Valley is the home of the Hupa Indians. Prior to contact, the Hupa lived in several villages dotting the valley floor separated from

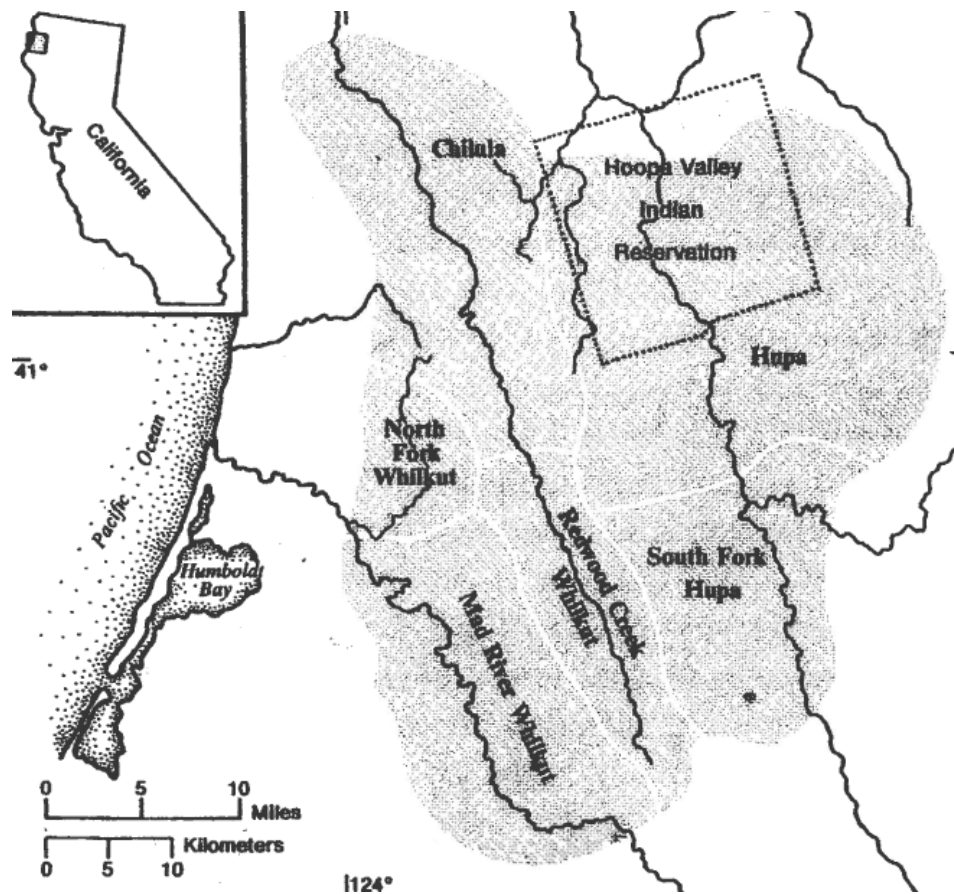
language family. The Karok speak a Hokan- based language which is considered to be one of the oldest language families in California. The Yurok speak a language that is part of the Algic or Algonquian Stock. See William F. Shipley, "Native Languages of California," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 89-90.

one another by the meandering Trinity River. The two most important villages in the Hoopa Valley were Te'k'imitding and Me'dilding, where the Hupas conducted important ceremonies.²⁹ Like the Yurok and Karok who were dependent upon the Klamath for salmon and the hills for game and acorns, the Hupa relied upon the resources of the Trinity River and the surrounding country for subsistence. The Trinity provided the majority of the protein in the diet of the Hupa Indians in the form of salmon, steelhead, lamprey and on rare occasions, sturgeon, while the hills provided acorns, nuts, berries and deer and elk. The Hupa shared many of the same cultural traits, subsistence patterns, and religious practices as their downstream neighbors, and interacted with them through trade and on important ceremonial occasions. The Hupas were (and are) located on the lowest reaches of the Trinity River, and thus commanded an influential position within the Trinity River Basin. Any salmon entering the Trinity River from the Klamath while making a journey upstream had to run the gauntlet of Hupa fish traps, weirs, spears and nets before making their way up river to other native peoples living above Hoopa Valley.

Continuing through Hoopa Valley following the Trinity River in a southeasterly direction, the Trinity River is again confined to a canyon for a short distance. Shortly thereafter, a small valley locally known as the "Sugar Bowl" is reached. Passing through the Sugar Bowl, again the canyon narrows and steep walls rise sharply on both sides of the Trinity forcing the traveler to hug the banks of the river, or if need be, traverse the

²⁸California's Rivers: A Public Trust Report, 3.

²⁹For a description of the pre-contact Hupa communities in Hoopa Valley, see William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 168-70. See also, Byron Nelson, Jr., Our Home Forever: A Hupa Tribal History Salt Lake City: The University of Utah Press, 1978., 11-12.



Pre-contact Hupa, Chilula and Whilkut territory. Note the 1864 boundary of the “Square” of the Hoopa Valley Indian Reservation. Source: Handbook of North American Indians: Volume 8, California, Robert Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 164.

high ridges well above it. At a point several miles south of the Sugar Bowl a large tributary enters the Trinity River from the south. This tributary is the South Fork of the Trinity River and it is at this point that the pre-contact territory of the South Fork Hupa begins. The South Fork Hupa were linguistically and culturally related to the Hupa of Hoopa Valley, but the Hupas saw them as a distinct people. Kroeber classified the Southfork Hupa as Northwest Culture types, and in fact, the ties that bound the Hupa to

their downstream Yurok and Karok neighbors were shared with the South Fork Hupas, and, to some extent, the Chimariko peoples living upstream in the Trinity River Basin.³⁰ Along the main stem of the Trinity River the South Fork Hupa did not claim much territory, rather, they were concentrated mostly in the canyon of the South Fork of the Trinity River. Prior to contact and for a short time thereafter, the South Fork Hupa had extensive contact with the Hupa proper, and traded with the Chimariko and Wintu living upriver along the main stem of the Trinity, and their western and southern neighbors as well.³¹

If one continues up the main stem of the Trinity River in a southeasterly and easterly direction, the territory of the South Fork Hupa is left behind as the pre-contact territory of the Chimariko Indians begins. The Chimariko were, like their down river neighbors, a riverine people of the Northwest Culture Type, but with less reliance upon the river than the Hupa, Karok and Yurok. Like the people down river from them, the Chimariko harvested salmon, steelhead, and eel, and ventured into the surrounding hills for acorns, nuts, berries and game. The anadromous fishes reaching the Chimariko were less valuable for their caloric content because they were somewhat spent due to the distance they traveled to that point from the ocean. Before contact in the 1840s the Chimariko occupied about twenty miles along the Trinity River east of the Hupa, from the confluence of the South Fork and the Trinity Rivers to what is today known as Big

³⁰William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 176-77. The South Fork Hupas were quickly absorbed into the Hupa Tribe after the creation of the Hoopa Valley Reservation.

³¹William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians:

Bar. Their territory included the lower reaches of New River, an important tributary to the Trinity River. During the nineteenth century, non-native miners made significant gold discoveries in Chimariko country. The Chimariko tribe probably never had a population of more than a few hundred people prior to contact. Thus, when they found themselves at ground zero during the gold rush to the Trinity River Basin, the social, racial and environmental chaos spawned by the gold rush hit them particularly hard. As a Hokan speaking people, the Chimariko were linguistically isolated from the Athapaskan speaking Hupas to the northwest, and the Penutian speaking Wintu to the east. They were a small, relatively isolated group that were, unbeknownst to them, ill situated for survival after the gold rush began.³²

Up-river to the east and northeast of the Chimariko lived the Trinity River Wintu. The Wintu occupied the headwaters of the Trinity River Basin, as well as, the region south and east of the Trinity River, including the Hayfork Valley. Wintu territory also spilled over into the upper Sacramento Valley where Wintu occupied the headwater region of the Sacramento and McCloud Rivers.³³ The Wintu were a large group divided into nine distinct subgroups recognized linguistically by distinct dialects. Those Wintu living along the upper reaches of the Trinity River have been labeled Trinity River Wintu by anthropologists. They spoke a Penutian language like all Wintu, but had a dialect that was distinct from the Wintu of the upper Central Valley. The Wintu were not dependent

Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 176-77.

³²Shirley Silver, "Chimariko," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 205-10.

³³Frank R. LaPena, "Wintu," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 324-5.

upon the Trinity River or bound to its resources, and are not considered as part of the Northwest Culture group.³⁴ Although the Wintu were not bound to the Trinity River they are significant because they occupied the upper reaches of the Basin and were among the first native people to have extensive contact with the Anglo miners who moved into the Trinity River region during the gold rush. Because the anadromous fishes that reached the Wintu in the upper-Trinity River Basin were so spent, they were of poor quality. Therefore, the Wintu relied less upon the river's anadromous fishes than their downstream neighbors. Rather, the Wintu, who are not classified as a riverine people, exploited other resources located in the region where they lived.

Of all the native groups residing in the Trinity River Basin, the Hupa have received the most attention by anthropologists, ethnographers and historians studying pre-contact northwestern California. The reason for this focus on the Hupas is simple: throughout the terribly disruptive and often tragic era of Indian-white relations during the Gold Rush, the Hupa managed to maintain possession of their traditional homeland: Hoopa Valley. Moreover, the federal government set aside Hoopa Valley as a treaty reservation in 1864, and in 1876, President U.S. Grant issued an Executive Order confirming Hoopa Valley as an Indian Reservation.³⁵ Because the Hupa resided upon a reservation under the control of the federal government, there are simply more records

³⁴William F. Shipley, "Native Languages of California," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 89.

³⁵13 Stat., 39. I do know that there was a reservation established at the mouth of the Klamath River for the Yuroks shortly after contact. However, the reservation infrastructure and crops were washed away during the flood of 1862, and the reservation was physically abandoned in 1864. Only later in the nineteenth century was the Klamath Reservation recognized as still in existence, and in the 1890s it was attached to the Hoopa Valley Reservation through executive order for administrative purposes.

relating to the Hupa than their upstream neighbors. The reservation allowed the Hupa to preserve much of their pre-contact world view and knowledge, and they maintained (and still do) their identity as a distinct people.

The Wintu, and to an even greater extent, the Chimariko, were devastated by the influx of miners during the Gold Rush. Without the relative protection of reservations and under constant pressure from invading whites, the Chimariko and Wintu were violently dispersed by the invaders who seized their lands. Thus, the majority of data available on Indians of the Trinity River Basin relates to the Hupa, therefore, looking at how the Hupas interacted with their environment can help us understand the general pre-contact relationship between the indigenous peoples of the region and the Trinity River Basin.

Hoopa Valley is the physical and spiritual home of the Hupa people. The valley is bisected by the Trinity River which, for most of its length, is a fast-flowing stream cutting through deep canyons. However, when the Trinity enters the Hoopa Valley it slackens, and becomes relatively placid. Before contact with non-indigenous people, the Hupa relied heavily upon salmon, steelhead, eels, and sturgeon from the river for a major portion of their diet.³⁶ The hills and mountains surrounding Hoopa Valley also contained important resources – for example, acorns were second only to salmon as a staple food for the Hupa people – but it was the Trinity River that provided the most important subsistence resource exploited by the Hupa, and so the Trinity held a central place in

³⁶Alfred L. Kroeber and Samuel A. Barrett, "Fishing Among the Indians of Northwest California." University of California Anthropological Records (Berkeley: University of California Press, 1960), 21(1):1-210. This synthesis is the most detailed discussion of fishing among the Indians in California. Within this study, the Hupa Indians are classified as Northwest Coast Culture Type. Lee Davis, "On This Earth: Hupa Land Domains, Images and Ecology on 'Deddeh Ninnisan.'" (Ph.D. Dissertation. Berkeley: University of California, 1988), 147-148.

Hupa society.³⁷ The Hupa chose to make their homes along the river banks in villages scattered throughout Hoopa Valley, and they structured much of their lives, and their relationship with their neighbors, around the seasonal cycles of the river – the spring and fall runs of salmon and periods of high and low water.³⁸ Besides providing the fish to sustain life, the river had (and still has) an important role within Hupa religion which anthropologists call "World Renewal."³⁹ Hupa uses of the river and other resources can not be readily separated from their world view and religious practices because the daily activities of the Hupa – including the act of fishing – were suffused with religious significance.

Before the rush of gold miners into the Trinity and Klamath River basins during the 1840s and 1850s, the Trinity River supported several types of anadromous fishes. Of the various species of Pacific Salmon (*Oncorhynchus*), the two most commonly found in the Trinity were the King or Chinook Salmon (*O. tshawytscha*) and the Coho or Silver Salmon (*O. kisutch*). The Sockeye or Red Salmon (*O. nerka*) also ran in the Trinity and

³⁷William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 164-165. A general discussion of various food resources used by California Indians is: Robert F. Heizer and Albert B. Elsasser, The Natural World of the California Indians (Berkeley: University of California Press, 1980). Estimates of pre-contact California Indian populations based on ecological factors are found in: Martin Baumhoff, "Ecological Determinants of Aboriginal California Populations," University of California Publications in American Archaeology and Ethnology (Berkeley: University of California Press, 1963), 49(2):155-236.

³⁸The Hupa people have a strong attachment to their homeland that can not be readily conveyed through pen and paper. Two sympathetic sources which somewhat demonstrate the Hupas strong attachment to Hoopa Valley and the Trinity River are: Byron Nelson, Jr., Our Home Forever: The Hupa Indians of Northern California (Salt Lake City: Howe Brothers, 1988), and Lee Davis, "On This Earth." Davis' discussion of the Trinity River and its significance to the Hupa people (pp. 147-225) is the most comprehensive and well-researched approach to this topic.

³⁹Alfred L. Kroeber and Edward W. Gifford, "World Renewal: A Cult System of Native Northwest California." University of California Anthropological Records (Berkeley: University of

its tributaries, but not in large numbers.⁴⁰ Runs of salmon occurred twice a year. King or Chinook ascended the Trinity River in both the spring and the fall, and Coho or Silver salmon, which is smaller than the King, possibly ran twice a year as well.⁴¹ Currently the salmon run does not reflect the behavior of pre-contact salmon because of the severe disruption of the Trinity River ecosystem during the post-contact period. Today, salmon run in large numbers only during the fall.⁴² Steelhead Trout (Salmonidae), an anadromous rainbow trout Salmogairdnerii (Irideus), and an important food resource for the Hupa Indians, also run the river twice yearly; once in summer and once in winter.⁴³

The Hupa Indians harvested other aquatic species from the Trinity River that were significant parts of their diet as well. The Pacific Eel, commonly called Lamprey (Entosphenus tridentatus), ascended the river in the early spring and was harvested by hand, spear and net. Two species of Sturgeon, the large White Sturgeon (Acipenser Transmontabus), and the smaller Green Sturgeon A.medirostris (Acutirostris) were also taken as food. However, sturgeon are dangerous and difficult to catch, and only occasionally ascended the Trinity River as far as Hoopa Valley, as such they were not a

California Press, 1949) 13(1):1-156.

⁴⁰Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California", 4.

⁴¹Sources addressing Indians of Northwest California and fishing disagree as to which species salmon ran at which time of the year, and the number of runs per-year. See: Lee Davis, "On This Earth: Hupa Land Domains, Images and Ecology on 'Deddeh Ninnisan,'" 150; Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California," 5. Davis suggests that both species ran twice a year, while Kroeber and Barrett state that only the King ran twice yearly and the smaller Coho in the fall. A good source on California fish, their behavior, distribution and status as native or introduced species is: Peter B. Moyle, Inland Fishes of California (Berkeley: University of California Press, 1976).

⁴²Lee Davis, "On This Earth," 159-160, 171-172.

⁴³Lee Davis, "On This Earth," 150.

major source of food but when caught provided a large amount of edible flesh and material for making glue for the manufacture of weapons.⁴⁴ These sustainable fish populations assured a predictable food supply for the Hupa and their neighbors, and so it is easy to understand why their culture was interwoven with the river and its fish resources.

The Karok and Yurok down river on the Klamath River relied upon the same species of aquatic life as the Hupa. The Hupas' upstream neighbors, however, relied less upon the river as a food resource. The Chimariko fished the Trinity for salmon, steelhead and eels, but also traded with the South Fork Hupa and Hupa proper for salmon that was higher in caloric content and protein because they were harvested lower on the river. It is important to remember that the farther an anadromous fish travels to spawn, the more calories it burns moving upstream and at the same time it does not take in any new calories. The farther from the ocean a fish swims, in other words, more and more of its food value is lost until it becomes almost useless for consumption. The Chimariko had access to salmon, but the fish were not as good as those caught earlier on the river by the Hupa. The Trinity Wintu did not rely upon salmon in the Trinity and its tributaries because they lived so high up in the Trinity River Basin that the salmon reaching them were spent. In fact, the Trinity River Wintu could obtain better salmon through trade with their Wintu neighbors living east of them on the headwaters of the Sacramento and McCloud Rivers where the quality of salmon was still high. But the Trinity Wintu did exploit the steelhead trout that spawned high up in the headwaters of the Trinity River

⁴⁴Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California", 5.

and other fishes when available.⁴⁵

Methods of harvesting fish varied greatly. By looking at the Hupas, we can gain a better understanding of the fishing methods employed by many Indian people in the Trinity River Basin. One important way the Hupa fished was by building fish weirs, or “fish dams,” to efficiently extract the food resources of the Trinity River. The most important of these structures was the Hupas' large ceremonial weir. To build the large weir across a river required a communal effort and great skill. The preferred site for weir construction was along a stretch of river with an even, gravelly bottom, a current of moderate strength, and shallow water. The Hupa built their ceremonial weir during the late summer and early fall, just before the rainy season began while the river was at its lowest level. There is some evidence to suggest that before the arrival of Europeans the Hupa also built a communal weir during the spring salmon run, but changes in the ecosystem and pressures from non-Indians since that time may have forced the Hupa to abandon the Spring weir or perhaps they never built one considering that the river ran high in the Spring.⁴⁶

Traditionally, the Hupa built their ceremonial weirs at one of two important sites – at the two largest Hupa villages on the Trinity. The locations were alternated each year between Te’k’imitding, the spiritual center for the Hupa people and the sacred village of the northern district of Hoopa Valley, and Me’dilding, the largest village of the southern

⁴⁵ Shirley Silver, “Chimariko,” in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 208-10; see also, Frank R. LaPena, “Wintu,” in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 338.

⁴⁶Lee Davis, “On This Earth,” 160, 171-172. The Hupa no longer build a communal fish weir.

district. Each was the site of many important religious ceremonies.⁴⁷ Sources suggest that before and during the early historic period the Hupa may have built a ceremonial weir at another location. Although this information is scanty, if it is accurate, it appears that physical changes in the river caused by mining and water diversion after contact may have caused the discontinuance of the ceremonial weir elsewhere.⁴⁸

After ceremonial leaders chose the communal weir site, they performed the appropriate ritual as part of their World Renewal religion.⁴⁹ After observing the proper rituals, the Hupas began construction of the weir. Only males contributed to the physical construction of the communal fish weir because women were under many restrictions concerning the weir and fishing in general.⁵⁰ During the early twentieth century, Pliny Earle Goddard, an astute observer of the Hupa people, described in simple detail the method of constructing the ceremonial weir:

The fall salmon begin to run after the first rains in September and October.

During the summer preparation is made for catching them. A dam or weir

⁴⁷Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California", 10-11, 18-20; Byron Nelson, Jr., Our Home Forever: The Hupa Indians of Northern California (Salt Lake City: Howe Brothers, 1988), 5, 10-12. Pliny Earle Goddard, "Life and Culture of the Hupa," University of California Publications in American Archaeology and Ethnology, vol.1, no.1 (Berkeley: University of California Press, 1903), 23-24. William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987.,165.

⁴⁸Lee Davis, "On This Earth," 158-160; Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California," 30.

⁴⁹Alfred Kroeber and Edward Gifford, "World Renewal: A Cult System of Native Northwest California," 60-61.

⁵⁰Lee Davis, "On This Earth," 205-207.

is built across the river. . . . Stout peeled stakes are driven in the river bottom in pairs, crossing near the top and firmly withed together. Heavy logs are laid into the crotches thus made, end to end, forming a continuous stringer across the river. Stakes about four inches in diameter are driven on the upper side, about four feet apart, at an angle of forty-five degrees. These are bound to the stringer by withes. A lattice work is then made on the upper side of the dam, consisting of small saplings bound together by chains of withes. This is made close enough to stop the upward migration of the salmon while impeding the flow of water but a little. Small platforms, to stand on while fishing, are made by driving a stake a little below the dam and running poles from the dam to the top of the stake.⁵¹

Fishermen stood on platforms built on the downstream side of the weir and harvested fish with A-frame dip-nets, plunge nets, and other tools. Fishing usually took place by torchlight at night or when the sun was low in the sky which helped the fisherman spot his prey. The communal weir on the Trinity River remained in place until the high waters of the fall rainy season washed it away.⁵²

The large ceremonial weir was the Hupas' most productive method of harvesting fish. The weir allowed Hupa fisherman to catch tons of salmon in a short period of time.

⁵¹Pliny Earle Goddard, "Life and Culture of the Hupa," 24. See Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California," 18-20, 29-30, for a more detailed description of weir construction.

⁵²Pliny Earle Goddard, "Life and Culture of the Hupa," 24. The weir was opened to allow salmon to move up-river to the people living above Hoopa Valley.

Some of the catch was eaten fresh, but most of it was cured and stored for food during the long rainy season. Because the ceremonial weir was a communal effort, all Hupa families could rightfully claim part of the catch because theoretically, each participated in the dams' construction. The system of communal fishing and distribution meant food was distributed among every household regardless of wealth, and all people were insured of a food supply during the difficult winter that lay ahead.

While the communal weir was the largest and most elaborate method of fishing, the Hupa also employed other methods to catch fish. The Hupas built small weirs and fish dams on streams feeding into the Trinity, often at privately-owned fishing locations. Unlike the large communal weir, these small dams did not have the potential to obstruct the entire stream, but they did provide ample fish for the needs of a family.⁵³ The Hupa employed several types of fish traps depending on time of year, location on a river or stream, and clarity of the water. Triangular dip-nets wielded from a "crib" or fishing platform built over a riffle or eddy were very effective. Hupas created eddies in the Trinity River and other streams by introducing obstructions such as rocks and logs into the water to create a slack in the current favorable for catching salmon. The slack water attracted exhausted salmon needing a place to rest and provided an opportunity for Hupa fisherman standing on the platform over the eddy to scoop them from the water.⁵⁴

⁵³A detailed discussion of the types of traps, nets, tools and spears and other devices used by the Hupa Indians for fishing is beyond the scope of this report. The best detailed description and analysis of Indian fishing methods and tools in Northwest California is found in Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California," 1-210.

⁵⁴There is some dispute as to whether the Hupa Indians actually created obstructions within the river for fishing, or if they merely enhanced natural eddies and riffles. See Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California," 32., and Pliny Earle Goddard, "Life and Culture of the Hupa," 23.

The Hupa also used seine and other types of nets. Net size and design varied depending on the type of fish sought or the place selected for fishing. Weighted with stones and buoyed by wooden floats, a seine net could be used as a set net. Seine nets were as long as sixty feet, and once set, the Hupas manned dugout canoes to drive fish into the nets for harvest.⁵⁵ The canoe itself was an important fishing tool on the Trinity River. For example, when water conditions were unfavorable, such as when the river was muddy from runoff, the fish could not be seen from platforms for spearing or netting. In that instance, men and women in canoes floated the murky river wielded drifting bag nets to capture the occasional salmon.⁵⁶ When the Trinity flowed clear, the Hupas also used spears equipped with detachable toggle-head points to harvest fish. The arrival of thousands of Anglo miners during the gold rush prevented the Hupas and other Indian fishermen from harvesting fish using traditional methods because mining polluted with mining debris. Pliny Earle Goddard observed in the early twentieth century: "Salmon were sometimes speared before the Trinity was made foul by mining."⁵⁷

Places for fishing varied according to religious obligation, environmental conditions, and site ownership. The Hupa fished at many locations along the Trinity River. The selection of a site for the large ceremonial fish weir was determined by the characteristics of the river, and by the site's proximity to important Hupa spiritual centers. But the Hupa fished (and still fish) many places along the Trinity River within Hoopa

⁵⁵Pliny Earle Goddard, "Life and Culture of the Hupa," 24-26.

⁵⁶Alfred Kroeber and Samuel Barrett, "Fishing Among the Indians of Northwest California," 40-41.

⁵⁷Pliny Earle Goddard, "Life and Culture of the Hupa," 25.

Valley that are not central religious centers – though many had religious significance. Community fishing sites open to all were located near villages. Other sites along the river, usually the best sites, were not open to everyone. Unlike the communal weirs and village fishing areas, families and individuals (including women) owned these prime fishing spots. Pliny Earl Goddard, one of the earliest non-Indian observers of Hupa subsistence patterns, stated: "Varying lengths of river shore were held as private fishing rights by heads of families. These included one or more riffles suitable for the construction of a fishing crib. These rights passed from father to son and were always respected."⁵⁸ At these places, members of the family who owned the site could fish, and sometimes the owner temporarily "sold" or permitted the right to fish the site to others for a certain period of time each season. Both men and women could own a fishing site, but usually only men fished from the shore. People who fished at these places treated their catch according to religious obligation so as not to offend the fish and therefore assured the yearly return of salmon.⁵⁹ The seasonal communal weirs at Te'k'imitding and Me'dilding provided an abundance of fish in a very short time, and was the most important method employed by the Hupa for harvesting fish for winter food. Fishing at privately owned sites along the Trinity River year-round provided most of the fresh fish eaten by the Hupa on a daily basis.⁶⁰

The scant data available on the Chimariko and Wintu within the Trinity River

⁵⁸Pliny Earle Goddard, "Life and Culture of the Hupa," 26.

⁵⁹Lee Davis, "On This Earth," 172-177.

⁶⁰Lee Davis, "On This Earth," 204-205.

Basin suggest that they too employed similar methods of harvesting fish from the Trinity River and its tributaries, but they did not build large ceremonial weirs. The Chimariko, like the Hupa, used nets and fish traps, and also used toggle-head harpoons or spears. While the anthropological literature states that the Chimarikos were not known to build large weirs, they did use scoop baskets and clubs, bows and arrows, and their hands to catch salmon and other fish species. These latter fishing methods obviously required water that was clear enough to allow the person fishing to see the fish. Once mining began in earnest after 1850, the clarity of the Trinity became a central point of conflict between Indians and miners. As for ownership of fishing sites among the Chimariko, information is scanty. It appears, however, that unlike the majority of fishing sites in Hoopa Valley, Chimariko fishing sites were communally owned.⁶¹

The Trinity River Wintu had even fewer methods for catching fish in the headwaters of the Trinity River Basin than the Chimariko or Hupa which suggests that fish were less central to their diet than their down river neighbors. The Wintu commonly undertook communal fish drives to push steelhead into nets where they harvested them with dip nets and baskets. The Wintu then distributed the catch to those who participated in the harvest. Individual ownership of fishing sites was common among the Wintu, but social custom insured that fish were distributed to people not owning a fishing site or to those who needed food. The Wintu of the upper Sacramento Valley had much more elaborate fishing methods than the Trinity River Wintu. The lack of a large percentage of edible salmon on the upper Trinity compared to the superabundance of edible salmon on

⁶¹Shirley Silver, "Chimariko," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 208-210.

the upper Sacramento is the likely explanation for the Trinity Wintus' limited methods for catching fish.⁶²

Obviously the fish resources of the Trinity River Basin were a significant source of food for the native peoples living near its rivers and stream. Yet, a discussion of fishing must also take into account the spiritual significance of the act of fishing. Looking at how the Hupa and their down river neighbors practiced World Renewal religion, allows us to understand the significance of the river in the daily lives of pre-contact peoples of the region. For the Hupa, Yurok and Karok, fishing was so intertwined with religious significance that the act of fishing cannot be separated from its religious meaning. For the Chimariko, and to an even lesser extent the Wintu, fishing and religion apparently were not as intertwined as they were for those living in the lower Basin.⁶³

The practice and meaning of the World Renewal religion is complex. Generally, however, practitioners "renewed" the world every year. Through ritual, ceremony and dance, the peoples practicing World Renewal balanced the world around them--restored balance to, or "doctored" the world (expressed by them as a large disk floating in the ocean) which had become unbalanced or "tipped" by actions of humans during the previous year. The spiritual understanding and restrictions of World Renewal flowed through all facets of the daily lives and activities of its practitioners and regulated how they behaved toward the physical and supernatural world. World Renewal as it applies to

⁶²Frank R. Lapena, "Wintu," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 337-8.

⁶³Shirley Silver, "Chimariko," in Handbook of North American Indians: Volume 8, California,

the management of the fish resources of the Trinity River Basin is only part of an interconnected whole, and the ceremonies and formulas (prayers recited in a prescribed fashion) of World Renewal have meanings and implications far beyond the harvesting of salmon and other resources.⁶⁴

World Renewal in northwestern California was (and still is) practiced mainly within the Klamath and Trinity River Basins.⁶⁵ The Hupa, and their Yurok and Karuk neighbors practiced World Renewal, while the Chimariko and Trinity River Wintu did not. World Renewal bound the three tribes whose territory met at Weitchpec. On the other hand evidence suggests that the Hupas' upstream neighbors practiced distinctive religions much less centered on the river and its resources, and much more individualistic in character. The physical position of the Yurok downstream on the Klamath River from the Hoopa Valley meant that cooperation regarding management of the fish resources was necessary to insure a supply of salmon for all people concerned and to avoid conflict between them. Hupa leaders (wealthy individuals) from the Trinity River Basin met with leaders from important communities along the Klamath River to negotiate over resource

Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 331-3.

⁶⁴The most detailed, though dated, account of World Renewal Religion is: Alfred L. Kroeber and Edward W. Gifford, "World Renewal: A Cult System of Native Northwest California," 1-156. Lee Davis, "On This Earth," describes the role that World Renewal played (and still plays) in the lives and culture of the Hupa people, although her focus is broader. Two important articles addressing World Renewal and salmon are: Sean Swezey and Robert Heizer, "Ritual Management of Salmonid Fish Resources in California." The Journal of California Anthropology, 1977, (4)6-29; and Thomas Buckley, "World Renewal," Parabola, 1988, 13(2):82-91. Lowell Bean, "Power and Its Application in Native California," in Lowell Bean and Thomas Blackburn, eds., Native Californians: A Theoretical Retrospective (Menlo Park, California: Ballena Press, 1976), 407-420, address the concept of "power" and its many manifestations and implications in pre-contact Native California.

⁶⁵Alfred Kroeber and Edward Gifford, "World Renewal: A Cult System," 1. See also, Lowell John Bean and Silvia Brakke Vane, "Cults and their Transformations" in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 663-65.

use. During major World Renewal ceremonies either on the Klamath or Trinity rivers, one could expect to find Hupas, Karoks and Yuroks attending the same ceremony, as well as, peoples from other tribes invited to attend.⁶⁶

The origins of World Renewal are ancient and practitioners trace it to the time of before human beings lived on the earth. In the beginning of all things, powerful religious figures populated the world that is an "earth-disk" floating upon the sea. These figures lived harmoniously with the laws of the world and did not alter the balance of the world. When the people (mortals) came to this world, these religious figures taught them everything they needed to know to properly care for the earth. After teaching humans how to behave properly, they departed across the ocean. Mortal humans, because of their flaws such as greed, and because of their evil actions, disrupted the balance of the world. The world itself theoretically remained beautiful, reliable and perfect in an ideal sense, but humans acting without restraint threw the world out of balance. If action were not taken, and bad behavior allowed to continue unchecked, human activity threatened to throw the earth-disk out of balance. If left alone, the earth-disk would become so unstable that it would begin to tilt on the ocean. As the earth-disk tipped more and more, floods, disease and death would spread across the world creating misery for humans and causing salmon runs to fail. The people were taught how to restore the balance of the earth-disk upon the sea, or to "renew" the world, and so humans had the power, knowledge and, most importantly, the obligation to restore harmony and balance to the

⁶⁶Lee Davis, "On This Earth," 163-166.

earth-disk.⁶⁷

The knowledge the ancient religious figures gave to humans in the form of formulas (spoken prayers), rituals, personal conduct and dance is the basis of World Renewal Religion. Acting out this knowledge through formula, song, ritual and dance is the key to restoring the balance of the earth-disk. Although there were numerous rituals associated with World Renewal, the two major dances conducted by the Hupa and their down-river neighbors were (and are) the White Deerskin Dance and the Jump Dance. Also important for World Renewal, although not as elaborate as the Jump and White Deerskin dances, were the "first-fruit" ceremonies--among them the First Eel and First Salmon ceremonies.⁶⁸

Individuals with specific knowledge of the language and instructions of the religious figures (formulas) led the major rituals. Every year or two at sites within Hupa territory and throughout northwestern California, ceremonies were repeated regularly. All people from throughout the area could attend - rich and poor, free and slave. Those attending the first ceremonies of the year had to prepare in ways prescribed by the pre-mortals humans called K'ixnay in Hupa, and Wo'gey in Yurok. Thomas Buckley states:

[A]ll litigation and debts had to be settled, grudges laid aside, the grief of mourners assuaged. The wealthy individuals and families displayed their wealth in the form of regalia . . . the fundamental quality of the world as it

⁶⁷Thomas Buckley, "World Renewal," 82-83; Alfred Kroeber and Edward Gifford, "World Renewal: A Cult System," 1-5.

⁶⁸Thomas Buckley, "World Renewal", 83; Alfred Kroeber and Edward Gifford, "World Renewal:

was in wo'gey [pre-mortal human] times and was, now, to be again. So, in the minds of the ritual leaders, in the social relations of the spectators, in the singing and costumes of the dancers, everything was once more as it should be, and the world was "doctored. . . ."⁶⁹

The leaders of these rituals, who anthropologists have called "formulists" or "priests," recited prescribed "formulas" or prayers. As they did so, they were essentially transformed into pre-mortal humans and through recitation of the formulas renewed the world. Through individual study formulists gained knowledge of the language of the K'ixnay or Wo'gey, and the power necessary to return all things to a state of balance.⁷⁰

World renewal works through repetition of these formulas year after year. The rains, floods, salmon and eel runs, were "seemingly reliable and automatic," but the cycles of the world "were reliable only when they were accompanied by other, human orders of repetition: the return, generation by generation . . . of a few individuals [formulists] . . . to the knowledge of how Creation actually is, when people do not interfere with it, and the cyclical repetitive enactment of this knowledge in ritual."⁷¹ The Hupa and their downstream neighbors insured the return of salmon and the cyclical abundance of the Trinity River Basin, by regularly renewing the world. The Trinity River was central to Hupa culture and gave of itself to the Hupas the animals of its

A Cult System", 56.

⁶⁹Thomas Buckley, "World Renewal," 84-85.

⁷⁰Thomas Buckley, "World Renewal," 84.

waters, and to maintain their life ways, the Hupas reciprocated spiritually and physically thus maintaining the balance of the river and the world.

A lunar calendar determined exactly when the rituals were held. The number ten is held sacred by the Hupa and their neighbors down river, and the number plays a significant role in the rituals and dances of World Renewal. Historically the Jump Dance was held twice a year, once in the spring and then again in the fall, and the White Deerskin Dance was held once a year, usually in August.⁷² The White Deerskin Dance,



The Jump Dance. Ca. 1906. Only one person is observing in the photo (wearing non-traditional clothing) yet there would have been many other people watching this important event. The dancers wear traditional Jump Dance costumes and regalia. The cedar wall behind them is a significant part of the dance. Photograph in Authors' personal collection.

⁷¹Thomas Buckley, "World Renewal," 88.

⁷²Lee Davis, "On This Earth," 124-125; Pliny Earle Goddard, "Life and Culture of the Hupa," 81-88.



Jump Dancer. This young Hupa and Yurok boy is wearing part of the regalia required for the Jump Dance. The Headdress is adorned with sacred redheaded woodpecker scalps and he carries the Jump Dance basket "purse." He also wears canvas pants. Photo postcard. ca. 1910-1920. Possibly Ericsson, Art Ray, Patterson or Eastman. Authors' personal collection.

with its elaborate rituals, formulas and songs was conducted at ten sacred places for ten days throughout Hoopa Valley (this dance was also held down river on the Klamath). After a formulist performed important rituals and recited formulas in the language of the ancient ones, the dance began. People and regalia arrived at the dance sites by canoes or trails. Scholars have described the dances and regalia in detail, so it is unnecessary to repeat it here.⁷³ However, one part of the ten-day ceremony is especially relevant to this

⁷³Walter R. Goldschmidt and Harold E. Driver, "The Hupa White Deerskin Dance." University of California Publications in American Archaeology and Ethnology (Berkeley: University of California Press, 1940), 35(8):103-142.

study because of its relation to the Trinity River. Pliny Earle Goddard described a segment of the White Deerskin Dance that he and others have called the Boat Dance that was conducted on the Trinity River itself:

The boat dance, which takes place on the fourth day of the ceremony, is spectacular in the extreme. Three large canoes are placed abreast [in the Trinity River]. A man dressed with the hook [deer antler] head-dress assumes a kneeling posture in the bow of each boat. Paddles reaching from bow to bow are held by these men to keep the boats abreast each other. Eight or ten men stand behind one another in each canoe. One man sits in the stern to steer. While the boats are floating down [the river] the men flex the knees and hips in unison imparting considerable motion on the boat. The leaders make peculiar motions with their heads while they lead the boat-dance song. This song, either because of its inherent nature, or because of its associations, powerfully affects the old people. At the landing-place opposite Miskut [a village sometimes spelled Misquit, Mesket or Meskat] the canoes approach and recede from the shore ten times before the final landing is made.⁷⁴

The Trinity River itself is central to this part of the White Deerskin Dance and thus the importance of the river within the world view of the Hupas is revealed. Each part of the

⁷⁴Pliny Earle Goddard, "Life and Culture of the Hupa," 85.

dance must be carried out according to the instructions of the Immortals who watch the dancers and listen to the words of the formulists to insure that they behave properly and recite the formulas precisely.⁷⁵

The Jump Dance, held twice yearly, was conducted first in the Spring during late May, and then again in September at the sacred dance grounds in the Hoopa Valley. Like the White Deerskin Dance it is conducted according to prescribed rituals, formulas, songs and dance steps. The regalia is different from that used in the White Deerskin Dance and the dance took place at only two sites--the towns of Te'k'imitding and Misqit. The Immortals interrupt their own dances to closely watch the Hupas dancing the Jump Dance.⁷⁶ The Jump Dances were held on sacred ground near the Trinity River and were important social and religious events where elaborate dance regalia was worn. Salmon and acorn soup were served at the Jump Dance, and the stones used to heat the soup were

⁷⁵Walter R. Goldschmidt and Harold E. Driver, "The Hupa White Deerskin Dance," 128-131. These authors analyze the dance and downplay its religious significance ignoring the interconnectedness of all Hupa rituals.

⁷⁶Lee Davis, "On This Earth," 124.



First day of the White Deerskin Dance. This snapshot was taken in October, 1906 at Campbell Field (site of part of the sacred ten day dance sequence). Note that the dancers wear a mixture of traditional and non-traditional clothing. They carry white deerskins with tongues made from redheaded woodpecker scalps. Photograph possibly Kroeber, Goddard, or Ericsson. Authors' personal collection.

piled near the dance ground until large piles of stones accumulated. The White Deerskin and the Jump dances are only part of the World Renewal, but are key to continuing the balance of the "earth-disk." Goddard stated it best when he wrote: "These dances, while social and religious in character, were really "medicines" in the wide Indian use of the term."⁷⁷

⁷⁷Pliny Earle Goddard, "Life and Culture of the Hupa," 87. Goddard states that before a major flood at the turn of the twentieth century washed them away, the pile of stones at the sacred dance grounds was enormous suggesting the length of time that the Hupa conducted this ceremony.

The function of these dances is wide in the sense that they help balance all things. But the Hupa also directed their religion specifically to the Trinity River and the fish it yielded. Before taking fish from the Trinity, the Hupa performed prescribed ceremonies and formulas to insure an abundant catch and the return of fish in the future. These ceremonies and rituals, like the larger dances, maintained the balance of the earth-disk. The smaller ceremonies included "first-fruit" rituals, individually recited songs and "formulas," and prescribed behavior by those fishing.

The Hupa did not conduct first-fruit ceremonies before taking all species of fish, but certain rituals had to be conducted before taking salmon and eels, the most important food sources in the Trinity. The Hupa held the First Eel ceremony in March when the lamprey run was at its height. Before the ritual it was forbidden for anyone to catch lampreys. At a time specified by the lunar calendar, the formulist began to act in strict ritual manner for ten days as prescribed by the Immortals. After completing the physically demanding rituals, including sweating and reciting formulas or "praying," the formulist caught eels from the river. Like other Hupa rituals, the formulist followed the instructions from the Immortals, and on the first night after the completion of the ritual, a feast was held. The formulists invited people to eat his catch, but the formulist could not eat these eels. After this ceremony, the people of Hoopa Valley were free to catch eels at will. Before contact with Euroamericans, the Hupas held First Eel ceremonies for both the southern and northern districts.⁷⁸

⁷⁸Goddard recorded and published the myth and formula for the first eel and first salmon ceremonies taught to the Hupa by Culture Hero. Pliny Earle Goddard, "Hupa Texts," University of California Publications in American Archaeology and Ethnology, vol.1, no.2 (Berkeley: University of California Press, 1903), 252-264. By 1940, the first eel ceremony had been discontinued and the formulas

The First Salmon Ceremony was similar to the First Eel Ceremony. The ritual was held in Sugar Bowl south of Hoopa Valley during the run of salmon. The formulist, who was often from Me'dilding, the village that owned the ceremony, observed ten days of ritual behavior accompanied by an attendant. Afterwards the formulist caught a salmon from the Trinity River. The salmon was then treated according to prescribed methods and then cooked. Only the formulist ate of the first salmon. If the salmon was not carefully handled at all times, the salmon would not allow Hupas to catch them in the future. No Hupa could fish for salmon until ten days after the first fish caught by the formulist. After taking the first salmon, the formulist continued his ceremonial behavior for a specified time. The formulists' assistant prepared the fish caught during this time, and on the tenth day after catching the first salmon, the Hupa feasted upon the salmon caught by the formulist. Like all Hupa ceremonies, "Immortals" observed the ceremony to be certain the formulist treated the salmon properly. If handled incorrectly, "the world would be ruined."⁷⁹

Observing rituals of World Renewal allowed the Hupa to manage ritually the fish resources of the Trinity River Basin, but they did not act in a vacuum. Ritual cooperation with neighboring tribes--particularly the Yurok who held territory north (down river) from Hoopa Valley was necessary to insure that the fish could actually get to Hoopa Valley. Through agreements secured with neighboring tribes, ceremonial communal fish dams could remain in the rivers for a short time before being opened to allow salmon to

forgotten. Alfred Kroeber and Edward Gifford, "World Renewal: A Cult System," 61; Lee Davis, "On This Earth," 180-185.

⁷⁹Alfred Kroeber and Edward Gifford, "World Renewal: A Cult System," 59-60; Lee Davis, "On This Earth," 188-189; Pliny Earle Goddard, "Life and Culture of the Hupa," 78-79; Pliny Earle Goddard,

move upriver to the communal weirs of other peoples reliant upon salmon.⁸⁰ The Kepel fish dam in Yurok territory on the Klamath River was the largest ceremonial weir in the region. The Yurok built the weir near Kepel on lower reaches of the Klamath River halfway between Weitchpec and Johnsons. The building of the Kepel weir involved not only the Yurok, but their neighbors as well. The weir required the hands of at least sixty individuals working for ten days. After completion, an elaborate ceremony accompanied by dance and formula was held for several days, or even weeks before the salmon began to run. Once the salmon began running in earnest, the weir was allowed to remain closed for only ten day before it was opened to allow salmon to move upstream to avoid conflict with up-river peoples.

Apparently the raising a weir was not always done in a way that satisfied all peoples upstream from the obstruction. George Gibbs, traveling the region with the United States Treaty Expedition of 1851, noted that intertribal cooperation concerning fish weirs could lead to intertribal conflict. "They [weirs] form a frequent cause of quarrel among the bands [tribes] inhabiting different parts of the rivers. Some understanding however, seems to exist as to opening portions of them at times, to allow the passage of

"Hupa Texts," 265-269.

⁸⁰Lee Davis, "On This Earth," 163-167. The ceremonial weir at Kepel in Yurok territory was the largest fish weir in the region. Because it blocked the run of salmon far down on the Klamath, it was allowed to remain in the river only ten days. The Hupa communal weir, at least after contact, was allowed to remain in the Trinity until the river washed it away-possibly for several months. It was constructed so it could be opened to allow the salmon to swim upriver. Stephen Powers observed in the early 1870s that the inter-tribal system was not working smoothly. Powers noted discord among the people of the region over building fish weirs, their placement and duration of use. See: Stephen Powers, Tribes of California. Reprint of 1877 edition. (Berkeley: University of California Press, 1976), 49. Powers comments that whites were compelling the Indians to open their weirs to let salmon run.

fish for the supply of those above."⁸¹ Once the fish passed the dam at Kepel, they ascended the Trinity River to Hoopa Valley where the Hupa waited at their own ceremonial weir to put in a supply of salmon.

Religiously, the Chimariko and the Trinity River Wintu were much more individualistic in their outlook. The Chimariko had one major dance each summer which lasted for ten days, but evidence suggests that the dance was not religious in nature, but rather, was more of a social occasion. Nor did the Chimariko conduct first fruit ceremonies such as first salmon or first eel ceremony. The Trinity River Wintu, it appears, were even more individualistic in their religious behavior. While evidence is mainly derived from ethnographic data gathered from the Wintu in the Sacramento Valley, it appears that the Wintu dances did not have the same significance for the health of the earth as did the World Renewal dances of the peoples on the lower Trinity and Klamath rivers, but had religious significance nevertheless. Like the dances held by the Chimariko, the dance of the Wintu were more commonly social events.⁸²

The people of the Trinity River Basin looked to rivers and streams for sustenance and incorporated the resources into their spiritual lives. Rivers also served other purposes, such as transportation and communication routes. For the Hupa, the position on the lower Trinity River allowed them access to peoples above and below Hoopa

⁸¹George Gibbs, George Gibbs' Journal of Redick McKee's Expedition Through Northwestern California in 1851. ed. by Robert F. Heizer. (Berkeley: University of California, Archaeological Research Facility, Department of Anthropology, 1972), 48.

⁸²Shirley Silver, "Chimariko," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 208-10; see also, Frank R. Lapena, "Wintu," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 331-3.

Valley. This was crucial for trade purposes, and especially during times of important rituals when the Hupas needed to negotiate with their neighbors, participate in World Renewal ceremonies, or during times of warfare. Prior to contact, the Hupa Indians used dugout canoes for traveling on the waters of the Trinity River. Made of redwood, the Hupa, who did not have significant stands of redwood within their territory, obtained these sturdy craft through trade with the Yurok who were especially skilled boat builders. Capable of carrying thousands of pounds of cargo and up to six adults, canoes allowed the Hupa to communicate and trade with their neighbors and among themselves, aided them in fishing, and were central to the White Deerskin dance.⁸³ While we have several references to the Hupa using canoes on the Trinity, because of the nature of the streams and Rivers in the Trinity River Basin, river travel was not practical for most native peoples in the region. Topography dictated that foot travel was the most efficient way to traverse the Trinity River Basin. For example, sources do not indicate that the Chimariko or Wintu used redwood canoes for transportation. They traded extensively with their neighbors using trails instead of water transport.

An extensive network of trails and paths linked Hoopa Valley with the Pacific coast and interior California. The Hupa traded goods or purchased items from the coastal Yurok who had articles not available from the neighboring Karok and Yurok residing along the Klamath River. Neighboring peoples brought seaweed, dentalium shells, and other objects to Hoopa Valley by means of the river and trails. The Chimariko traded with the Wintu and the New River Shasta, and although they had conflict with the Hupa,

⁸³William J. Wallace, "Hupa, Chilula, and Whilkut," 167-168. Goddard's description of the White Deerskin Dance and the "Boat Dance" demonstrates the use of boats in religious ceremonies.

they traded with them as well. However, because the Chimariko were devastated so quickly after the arrival of Euroamericans in the 1850s, too little information on them exists to allow a re-creation of their trading system. The trading network of the Trinity River Wintu is not well understood for similar reasons. The Trinity River Wintu traded with the Chimariko, New River Shasta and possibly the Hupa, but they had generally hostile relations with the peoples on the Klamath River and usually stayed away from their territory.⁸⁴ The Trinity River, therefore, was only a viable avenue of communication for the Hupa, and was much less so for the Chimariko and Trinity River Wintu. The Trail network in the region followed the non-navigable stretches of the Trinity River, but also deviated from the river when it was necessary to trade with peoples of other drainage basins. For example, the Trinity Wintu were in closer contact with the Wintu of the Sacramento Valley than they were with their Trinity River neighbors, but had to reach them over rugged trails originating in the upper Trinity River Basin.

The Trinity River was central to the subsistence of the pre-contact Hupa and to a lesser extent, the Chimariko and Trinity Wintu. The daily activities of the Hupa were dictated by religious belief. In their relations with one another, their valley home, and the plants and animals they gathered for subsistence, the Hupa conducted themselves according to religious precepts within the context of World Renewal. Seen within this

⁸⁴Shirley Silver, "Chimariko," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 208-10. See also Frank R. Lapena, "Wintu," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 329. Two studies addressing pre-contact trade networks in northern California are L.L. Sample, "Trade and Trails in Aboriginal California." in Reports of the University of California Archaeological Survey, No. 8. Berkeley: University of California, 1950; and James Thomas Davis, "Trade Routes and Economic Exchange Among the Indians of California" in Reports of the

wide context the river held meaning beyond its ability to merely support aquatic life. The Trinity River occupied a central place within the larger world view and cosmology of the Hupa people. While the Hupa harvested fish from the Trinity and conducted religious ceremonies on its waters and banks, it was a practical avenue for transportation and communication as well. For the Chimariko and Trinity Wintu, the river was less essential to their subsistence, but was nonetheless important.

Indigenous uses of the pre-contact Trinity River Basin were ancient and intimate. The Indian people dictated how they interacted with their environment, and over centuries they developed social, political and subsistence systems that allowed them to exploit the material abundance of their surroundings. The practice of World Renewal ensured that the resources they depended upon would be available year after year, and their world would remain balanced and predictable.

The discovery of gold on Reading's Bar in the upper Basin in 1848 initiated changes that swept through northern California. The Indian peoples of the Trinity River Basin immediately experienced a disruption in their intimate world. As the following chapters show, the upheaval was drastic and extensive. Change was not only rapid, but culturally and physically devastating for the Indian peoples of the Basin. The period from 1848 until the mid 1860s was characterized by bloody Indian-White warfare, a rapid decline in the indigenous population, and severe environmental change.⁸⁵ While all the Indians of the region felt the impact of the arrival of thousands of gold seekers, some

University of California Archaeological Survey, No. 54. Berkeley: University of California, 1961.

⁸⁵Jack Norton, Genocide in Northwestern California: When Our World Cried (San Francisco: The Indian Historian Press, 1979), 38.

managed to maintain their traditional homelands, cultural identities, and strong sense of place.⁸⁶ The gold rush to the Trinity River Basin signaled the end of total Indian control of the region as the new arrivals set about re-ordering the country in ways familiar to them. As the Basin passed from Indian to non-Indian control, competing interests determined the fate of how the resources of the region to be were exploited.

⁸⁶In 1864, the federal government established the Hoopa Valley Reservation for the Hupa Indians. This allowed the Hupa to retain much of their aboriginal territory, and much of the knowledge they possessed prior to the arrival on non-indigenous people. See, George Esborn Anderson, "The Hoopa Valley Indian Reservation in Northwestern California: A Study of Its Origins." (Thesis: University of California, Berkeley, 1956).

Chapter 2

The End of Indian Time: The Trinity River Basin to 1858

Prior to the California Gold Rush, there were only two documented visits made to the Trinity River Basin by non-indigenous peoples. The fur trappers who passed through were looking for pelts, and were not interested in settlement.⁸⁷ The first occurred in the spring of 1828 when Jedediah Strong Smith, a well-known explorer and trapper, led a group eighteen men and a herd of approximately three hundred horses through the Basin on his way to Oregon country.⁸⁸ Smith's route led him first through the Sacramento River Valley, and then west/northwest across the mountains towards the Trinity River Basin. The group proceeded into the Basin via Hayfork Creek through Chimariko Indian territory and the Hyampom Valley. On April 22, the party passed several Indian dwellings. Smith reported that Chimarikos began yelling at the party from the hills but remained a safe distance away. At one point in the day Smith attempted to talk with them, but the Chimarikos attacked Smith and his men with bows and arrows. Although the Indians did no harm, the trappers returned fire wounding several Indians who fled

⁸⁷Clarence E. Pearsall, George D. Murray, A. C. Tibbetts, and Harry L. Neall, eds., The Quest for Qual-A-Loo [Humboldt Bay]: A Collection of Diaries and Historical Notes Pertaining to the Early Discoveries of the Area Now Known as Humboldt County, California (Oakland., Calif.: Holmes Book Company, 1966), 23; Richard Dillon, Siskiyou Trail: The Hudson's Bay Company Route to California (New York: McGraw-Hill Book Co., 1975), 60; Byron Nelson, Jr., Our Home Forever: The Hupa Indians of Northern California (Salt Lake City: Howe Brothers, 1988), 37; and Jeff LaLande, First Over the Siskiyous: Peter Skene Ogden's 1826-1827 Journey through the Oregon-California Borderlands (Portland: Oregon Historical Society Press, 1987), 71.

⁸⁸Lee Davis, "Tracking Jedediah Smith through Hupa Territory," American Indian Quarterly 13 (Fall 1989), 369-89. There is a large body of on the travels of Smith. For a reproduction of Smith's journal while in Hoopa Valley, see Maurice Sullivan, The Travels of Jedediah Smith: A Documentary Outline Including the Journal of the Great Pathfinder (Santa Ana, Calif.: Fine Arts Press, 1934). Smith's journal on his trip in California before reaching the Trinity River is in George R. Brooks, ed., The Southwest Expedition of Jedediah S. Smith: His Personal Account of the Journey to California, 1826-1827 (1977; reprint ed., Lincoln: University of Nebraska Press, Bison Books, 1989).

into the hills. Smith did not meet any other Indians until two weeks later when he reached the territory of the South Fork Hupa along the South Fork of the Trinity River.

The party found that the canyon of the South Fork was difficult to traverse. Two miles below the point where Grouse Creek enters the South Fork from the west, passage was impossible because the “mountain closed in to the river which ran in a channel of cleft rocks.”⁸⁹ The party left the river and made its way along Hogback Ridge in three feet of snow. It was several miles before they could return to the river because they “found the deep ravines impossible and the river yet washing the base of high hills.”⁹⁰ After several days walking along the ridge, the party returned to the canyon and camped for three days at the confluence of the South Fork and main stems of the Trinity rivers near the South Fork Hupa village of Tlilding.

The party then proceeded along the main stem of the Trinity River, and on May 6 were near the mouth of Willow Creek, an important tributary that enters the river from the west. Here the expedition encountered several Indian homes and decided to camp near one. While encamped, Smith reported seeing a canoe piloted by Indians floating “down the river with a good many Deer skins on board.”⁹¹ Smith attempted to coax the Indians to shore, but they refused and continued north towards Hoopa Valley. Two or three other Indians were spotted across the swollen Trinity River and when Smith asked

⁸⁹Lee Davis, “Tracking Jedediah Smith through Hupa Territory,” American Indian Quarterly 13 (Fall 1989), 377.

⁹⁰Lee Davis, “Tracking Jedediah Smith through Hupa Territory,” American Indian Quarterly 13 (Fall 1989), 379.

⁹¹Lee Davis, “Tracking Jedediah Smith through Hupa Territory,” American Indian Quarterly 13 (Fall 1989), 381.

them to come across, they too, declined. While camped near Willow Creek, Smith described the typical Indian house found in the lower Trinity River Basin: “Their lodges were built differently from any I had before seen. They were 10 or 12 feet square, the sides 3 feet high and the roof shaped like a house. They were [shaped] built of split pine plank with 2 or 3 small holes to creep in at.”⁹²

Smith’s party continued north along the Trinity until reaching Hoopa Valley. They camped across the river from Me’ dilding, an important Hupa community. While encamped, several Hupas approached the trappers wanting to trade deer skins for axes and knives. Smith noted that he had seen several places where Indians had used metal hatchets on trees along his route suggesting that European trade items had reached the Trinity River Basin well before Europeans. Smith asked the Hupas to give him directions for the best route out of the valley. Using sign, the Hupas informed him that if his party continued north along the Trinity River in the direction of the Klamath River to Weitchpec, travel would be difficult because it “was rocky along the bank of the river.”⁹³ Smith chose an easier route pointed out to him by the Hupas that followed a well-traveled path out of the valley by way of Bald Hills. Smith then skirted north of Chilula territory near Redwood Creek, and thence went to Yurok territory and the Klamath River.

⁹²Lee Davis, in her important analysis of Smith’s journal, notes that Smith at this point crossed a cultural boundary and entered what anthropologist Alfred Kroeber called the Northwestern Culture Area Climax (see Chapter 1) that is generally characterized by the reliance upon salmon as a staple, the use of canoes, high population density, and plank houses. Lee Davis, “Tracking Jedediah Smith,” 381. For a discussion of the northwest culture climax area see, Alfred Kroeber, “Cultural and Natural Areas of Native North America,” in University of California Publications in American Archaeology and Ethnology, 18:1-242.

⁹³Lee Davis, “Tracking Jedediah Smith through Hupa Territory,” American Indian Quarterly 13 (Fall 1989), 383.

Smith's journey through the Trinity River Basin reveals the difficulty of the topography that would hinder future settlement. His account also shows he had mixed relations with the Indians he met, which was not untypical. The Chimariko attacked Smith and his men and expressed fear of them, but the Hupas were friendly, wanted to trade for metal axes and knives and gave him information. Smith needed the information the Indians had and wanted friendly relations with them. The Indians he encountered were in control of their world and Smith's presence, while surely a novelty for the Indians, did not disrupt that world. From this account it is clear that the Indians used the Trinity River for trade, and not surprisingly were willing to interact with Smith for their own benefit, and they had an intimate knowledge of their country. When Smith left the Trinity River Basin on May 9, 1828, it was still Indian Country and remained so until the gold rush for another two decades.⁹⁴

Seventeen years after Smith's visit, more trappers entered the area. In 1845 Pierson B. Reading led a fur hunting expedition into the Trinity River Basin. John Sutter, the founder of New Helvitia located at the confluence of the Sacramento and American Rivers in the Central Valley, sent Reading and some Indian trappers to the upper reaches of the Trinity watershed to look for beaver. Reading did not comment in detail about the things he saw or the people he met in the Basin. He and his men explored the area, but returned to the Central Valley with few furs. Reading's expedition was the last to

⁹⁴ Smith's journey into Oregon Country prompted the Hudson's Bay Company to send fur brigades into Northern California to thwart an American advance into territory monopolized by the HBC. While some trappers did explore the upper-Klamath River, there is no hard evidence that anyone but Smith traversed the Trinity River Basin until the 1840s. Nelson, Jr., Our Home Forever, 38. Pearsall, et al., The Quest for Qual-A-Loo, 78-80. See also Joseph J. Hill, "Ewing Young in the Fur Trade of the Far Southwest, 1822-1834," Quarterly of the Oregon Historical Society 24 (March 1923):1-27.

penetrate the Basin before the discovery of gold in California.⁹⁵

In 1848, another Sutter employee, James Marshall, discovered gold at Coloma in the Sierra Nevada Mountains while building a sawmill race. The find set off a rush that drew hundreds of thousands of people to California from all parts of the globe.⁹⁶ As the rush began, Pierson Reading went to the initial gold discovery site at Coloma to have a look, and noticed that the gold-bearing gravels resembled gravel he remembered seeing on the Trinity River during his 1845 fur expedition. He quickly retraced his route to the Central Valley and assembled a group of Indian laborers to help him look for gold. They crossed the mountains from the Sacramento River Valley into the Trinity Basin and discovered gold at a place later named Reading's Bar near present-day Douglas City.⁹⁷

Reading and his Indian laborers quickly set about mining on the Trinity River, but once word got out that there was gold in the Basin, more prospectors began arriving and competing for mining locations. Reading commanded a large group of laborers which angered a group of white miners from Oregon who appeared on the scene. These men did not want to compete with Indians for wealth. The Oregonians, fresh from the bloody and brutal Indian wars in Oregon, threatened to kill Reading's laborers if he continued to employ them. Reading retreated from his claim back to the Central Valley and left the

⁹⁵Account Book, 1845, Reading Collection, California Room, State Library, Sacramento; Gertrude A. Steger, "A Chronology of the Life of Pierson Barton Reading," California Historical Society Quarterly 22 (December 1943):366.

⁹⁶Rodman W. Paul, California Gold: The Beginning of Mining in the Far West (Cambridge: Harvard University Press, 1947), 20-35.

⁹⁷Erwin G. Gudde, California Gold Camps: A Geographical and Historical Dictionary of Camps, Towns, and Localities Where Gold Was Found and Mined; Wayside Stations and Trading Centers, ed. Elizabeth K. Gudde (Berkeley: University of California Press, 1975), 285.

mining on the Trinity to others. The significance of Readings' discovery is that it set off a rush to the Trinity River Basin that would wholly transform the region and the lives of the native peoples residing there.⁹⁸

The discovery of gold marked the "End of Indian Time" in northwestern California.⁹⁹ Miners poured into the Trinity River Basin hard on the heels of Reading, many following a route from the Central Valley to the Trinity Diggings.¹⁰⁰ The arrival of miners opened a direct competition between Indians and non-Indians for control and use of local resources. The Indians, who had well-ordered societies based on locally abundant resources, were overrun by people who held a wholly different approach to resource use. This difference was at the core of the conflicts that began soon after the commencement of the gold rush.

The isolation of the Trinity River Basin and the rugged nature of the region caused problems for the miners moving into the area. Also, northwestern California receives the highest amount of rainfall in the state, and the rainy season, which begins in October and lasts through March, hampered travel and made it difficult to obtain supplies. For example, in 1849 Hector Dulany, an early arrival at the Trinity River mines, reported that it took a month for him to travel the difficult country from the headwaters of the Trinity Basin to the town of Sacramento during the rainy season, and

⁹⁸Steger, "A Chronology of the Life of Pierson Barton Reading," 366.

⁹⁹The term "The End of Indian Time" is used today by the native peoples of the Trinity River Basin to describe what happened to their world during the gold rush. See Lee Davis, "Tracking Jedediah Smith Through Hupa Territory." American Indian Quarterly Vol 13, no. 4 (Autumn 1989), 370.

¹⁰⁰Owen C. Coy, The Humboldt Bay Region, 1850-1875: A Study in the American Colonization of California (Los Angeles: The California State Historical Association, 1929), 37.

that he would not be able to return to the Trinity River mines until the following spring when the rains let up.¹⁰¹ Nevertheless, individuals braved the difficulties of travel to get to the Basin because of the lure of gold. The presence of so many miners created a demand for supplies and an opportunity for enterprising individuals to make profits from carrying freight to them. The influx of miners, and the search for ways to get supplies to them quickly, opened the isolated Trinity Basin to the outside.

Soon after the discovery of gold in the Basin, steamboats began plying the Sacramento River from San Francisco Bay north as far as modern-day Redding. From there, miners could make the difficult jaunt over the mountains to the mines and supplies could be sent in. Weaverville was established in the Basin early during the rush and became the central supply depot for these mines. Eventually, the camp would grow to become the largest community in the region and the county seat of Trinity County.¹⁰² Despite the difficulties of the journey from the Central Valley to the Trinity diggings, miners clogged the route. J.P. Haynes, who mined on the Trinity River during the opening years of the rush, commented that the trail between the Sacramento Valley and the bustling town of Weaverville was so crowded that "you could scarcely go half a dozen rods but you would meet someone, or someone would overtake you." "In fact," he continued, "you could see someone go over that trail all the time. . . ."¹⁰³

¹⁰¹Letter, Hector Dulany to Brother, Nov. 30, 1849, Dulany Family Correspondence, 1849-1850, Bancroft Library, University of California, Berkeley.

¹⁰²John Martin, Data Regarding Trinity County, Founding of Weaverville, Bancroft Library, University of California, Berkeley; Jerry MacMullen, Paddle Wheel Days in California (Stanford: Stanford University Press, 1944), 16, 23.

¹⁰³Haynes quoted in Bledsoe, Indian Wars of the Northwest, 12.

The difficulties of the overland route from the Sacramento valley and the possibility of making tremendous profits freighting goods to the mines spurred exploration of the Basin and the northern coast of California. At the beginning of the Gold Rush, topographical knowledge of coastal California was limited. But response to the news of gold on the Trinity River set off a rush by ocean to that part of California. After the news of gold reached San Francisco, several shiploads of explorers and speculators sailed from San Francisco Bay in a race to be the first to discover a port and possibly a lucrative water route to the mines. They located the mouth of the Eel River, Trinidad Bay, Humboldt Bay, and the mouth of the Klamath River, but they found no practical water route to the Trinity mines. They did, however, establish coastal settlements that began competing with one another for the overland traffic to and from the mines.¹⁰⁴

Miners who chose to approach the Trinity River Basin from the coast ran into the same obstacles as those approaching from the Sacramento River valley. In June 1849, a Frenchman named Alexander Andre and a party of Europeans landed at Trinidad Bay where they disembarked and packed their supplies overland to the east and the Trinity River mines. After a few days walking, they came upon Hoopa Valley in the lower Trinity Basin which Andre described:

Straight in front of us, at the bottom of a valley we were to cross,

¹⁰⁴For a more detailed discussion of the establishment of coastal communities see Owen Coy, Humboldt Bay Region. There were settlements established at the mouth of the Klamath, but the bar at its mouth was hazardous for boats to cross, and the river not navigable to the mines and so the settlements on the lower Klamath were never as prosperous as those on Humboldt Bay.

the Trinite' River meandered slowly, slightly larger than the Loire river at home. On the right and on the left, huge prairies stretched, separated here and there by rows of trees, as well lined as if they had been planted by men, while in the intervals we could not see the smallest shrub. The grass in these prairies was tall enough to cover a horse. This plateau was surrounded on all sides by very large mountains covered with huge trees. At the bottom of the valley were a few Indian villages. Some persons have estimated the number of Indians at 3,000, but from what I saw myself, I think this number exaggerated. We were to camp in these prairies, and such an attractive sight gave us added strength.¹⁰⁵

Andre's description of Hoopa Valley is obviously exaggerated. The "huge" prairies do not fit into the reality of topography of Hoopa Valley, although coming upon the valley after days of struggling through mountains must have been impressive. What Andre described was a place yet to be transformed by the presence of non-Indian peoples. But that transformation was beginning. When the party entered Hoopa Valley they found a group of American sailors already there recuperating from an exhausting boat trip up the Klamath and Trinity Rivers.

While crossing the prairie, we met a party of Americans whose

¹⁰⁵Alexander Andre, "A Frenchman at the California Trinity River Mines in 1849," Westerners Brand Book, New York Posse, vol. 2, no. 3; vol. 2, no. 4 (1955), and vol. 3, no. 1 (1956). Quotation in vol.

camp was on the bank of the river; they told us they had been here for fifteen days, fishing and hunting. They had a small boat with which they had reached this spot from the sea. The stream being so fast, it took them no less than twenty days and the efforts of six courageous and trained sailors to arrive at the very same spot we had reached after a four and a half days' walk.¹⁰⁶

The Americans were taking resources upon which the Hupas relied for sustenance. We have no record of the Hupas' reaction to these interlopers, but considering their greater numbers, they could have prevented the Americans from hunting and fishing if they wished to do so. One can assume that since this incident took place in June of 1849, very early in the rush to the Trinity River mines, the Indians had yet to realize the dangers the presence of these miners posed to their way of life.

Miners approached the Trinity Basin from the Central Valley and the coast, but in 1849, the exact course of the Trinity River was not widely known to anyone but the native inhabitants. The Indians understood the Basin's topography and the courses of rivers and streams, and knew it was not easy to travel the area except on foot. For non-Indians, this knowledge came through much hardship. In the winter of 1849, Josiah Gregg, the well-known author of the widely read and highly influential account of the Santa Fe Trail, *Commerce of the Prairies*, led a party of nine explorers through the

2, no. 4, 88.

¹⁰⁶Alexander Andre, "A Frenchman at the California Trinity River Mines in 1849," Westerners Brand Book, New York Posse, vol. 2, no. 3; vol. 2, no. 4 (1955), and vol. 3, no. 1 (1956). Quotation in vol. 2, no. 4, 88.

Trinity Basin hoping to find the mouth of the Trinity River and chart a path to the California coast.¹⁰⁷ Gregg and his contemporaries erroneously believed that the Trinity emptied on the Pacific Coast at Trinidad Bay.

Traveling on foot during the rainy season, the group departed Rich Bar at the mines on the Trinity River on November 5, 1849, and followed the river to its junction with the South Fork of the Trinity where Jedediah Smith had camped decades earlier. At that point in their journey, Gregg met several Indians and inquired about what lay farther downstream. Since the party was in South Fork Hupa territory and near the important village of Tlelding, it is safe to assume these were South Fork Hupas. The Indians told Gregg that the tribes downstream would not welcome them and they should move west and out of the Basin. Why the Hupas down river would not welcome the Gregg expedition is unknown, but it is probable that the South Fork Hupas were referring to some other group that was hostile to whites, or the Hupas were not anxious to have more whites in Hoopa Valley. Regardless of who the hostile Indians might be, the Gregg Party heeded the advice of the South Fork Hupas and abandoned the river. They turned west and struggled overland out of the Basin hoping to make the coast. The Gregg party failed to discover the mouth of the Trinity River and establish if a water route to the mines existed. However, the expedition did add to the general knowledge about the region, and also reaffirmed the difficulty of travel to and from the mines from the coast.¹⁰⁸

¹⁰⁷Josiah Gregg, Commerce of the Prairies: Or the Journal of a Santa Fe Trader during Eight Expeditions across the Western Prairies 2 vols. (New York, 1844); rpt. ed., Max Moorhead, ed., (Norman: University of Oklahoma Press, 1954). Much of this information is summarized from Paul Horgan, Josiah Gregg and his vision of the early West (New York: Farrar, Strauss, Giroux, 1979).

¹⁰⁸Gregg did not survive the expedition. His papers relating to the journey were lost at his death.

Because of the experiences of miners like Alexander Andre, and explorers like Josiah Gregg, people wanting to travel to the mines, or supply them realized that freighting goods overland would be the only practical way. The newcomers at Trinidad and Humboldt Bay soon began to build trails and improve existing Indian trade trails to connect the coastal ports to inland camps to facilitate commerce and communication.¹⁰⁹ In the summer of 1850, residents of Humboldt Bay wrote the editor of the widely read San Francisco newspaper *Alta California*, "A road [to the mines] is now nearly completed and packers are already coming down with mules to Humboldt for provisions and goods, and a good business will be done there this summer and fall."¹¹⁰ The residents let it be known that three hundred mules were kept busy packing between the mines and the coast earning for their owners a handsome \$1.50 per pound for freight.¹¹¹ A mule and horse packing industry quickly grew on Humboldt Bay and Trinidad to supply the increasing number of miners heading to the Trinity Basin and others making their way to the Klamath River in search of gold.

The influx of miners put enormous pressure on Indian resources throughout northern California and caused severe problems for the native inhabitants of the Trinity

A. J. Bledsoe, Indian Wars of the Northwest: A California Sketch (San Francisco: Bacon & Company, Book & Job Printers, 1885), 34. David Rich Lewis states that the Gregg party passed through Hoopa Valley, but this information contradicts Bledsoe. That is possible because Gregg's notes were lost, and the party didn't know where they were. Yet, I adhere to Bledsoe's description because it is earlier and closer to the actual event. See David Rich Lewis, Neither Wolf nor Dog: American Indians, Environment, and Agrarian Change (New York: Oxford University Press, 1994), 85.

¹⁰⁹Coy, Humboldt Bay Region, 68, n. 14; Memorial and Biographical History of Northern California (Chicago: The Lewis Publishing Company, 1891), 140.

¹¹⁰Alta California, June 26, 1850, 2-4.

¹¹¹Alta California, June 26, 1850, 2-4.

River Basin. The Indians now had to compete with people who had different views on how land and resources should be used. The method and motivations of non-Indian resource extraction threatened the very existence of Indian people in the Trinity River Basin. Soon after the rush began, the competition for space and resources resulted in sporadic hostilities between Indians and non-Indians in the northwest, but violence within the Trinity Basin was less common than elsewhere. Murders of Indians and reprisal attacks on whites was the common scenario.¹¹²

The United States government had limited influence and no presence in the Basin during the initial gold rush. At the time of the gold discovery in the Sierras, the United States was struggling to deal with the recent doubling of its territory at the end of the Mexican War. In 1849 Congress transferred the Indian Office from the War Department to the newly created Department of the Interior as part of an overhaul of Indian policy. The Indian Office had yet to create a specific policy to effectively deal with the thousands of additional Indians now included in territory governed by the United States.¹¹³

In 1850 Congress provided for three commissioners to investigate the Indian situation throughout California. Congress authorized them only to gather information about the Indians and assess the situation. Congress did not intend that the three should

¹¹²Nelson, Our Home Forever, 37-91; David Rich Lewis, Neither Wolf nor Dog, 84-88; Jack Norton, When Our Worlds Cried: Genocide in Northwestern California (San Francisco: The Indian Historian Press, 1979).

¹¹³One of the few studies addressing the struggles of the Indian Office during this era is Robert A. Trennert, Alternative to Extinction: Federal Indian Policy and the Beginnings of the Reservation System, 1846-51 (Philadelphia: Temple University Press, 1975). For a synthesis of the evolution of federal Indian policy see, Francis Paul Prucha, The Great Father: The United States Government and the American Indians 2 vols. (Lincoln: University of Nebraska Press, 1984).

or could make treaties with the California Indians. However, contrary to the wishes of Congress, the Secretary of the Interior told the commissioners to “make such treaties and compacts with the Indians as may seem to be just and proper.”¹¹⁴

By 1850, relations between Indians and whites in the northwestern region of California began to deteriorate. During the summer of that year, two whites were killed east of Union (modern Arcata), a packing center on the Humboldt Bay. The two men were found 18 miles east of the town at a spot in the redwood forest west of the Trinity Basin that packers used as a camping spot on a pack trail leading to the mines. As prospectors continued to spread across the area, clashes increased. A conflict between Shasta Indians and miners at the forks of the Salmon River led miners to retaliate by burning three villages and killing several Indians.¹¹⁵ In the spring of 1851 a group of prospectors from Trinidad Bay moved inland to prospect the middle reach of the Klamath River. They followed a trail leading from Trinidad across the Bald Hills through Chilula territory to the Klamath River and Yurok territory at Weitchpec. They split into small groups and began working up river into Karok territory. Three men went missing and were found dead by their companions. A volunteer force made up of prospectors set out to punish the Indians. They found an Indian village, and, using a tactical approach that would be perfected in the region, waited until dawn when they fired on and killed the sleeping Indians. These types of incidents became more frequent as more miners inundated the region, and fear of an all-out Indian war began to spread among the

¹¹⁴Quoted in Albert L. Hurtado, Indian Survival on the California Frontier (New Haven: Yale University Press, 1988), 132; See also Harry Kelsey, “The California Indian Treaty Myth,” Southern California Quarterly 55 (1973):225-38.

newcomers.¹¹⁶

Upon news of trouble in the northwest, one of the three commissioners appointed by Congress to investigate the Indian situation in California, Redick McKee, hastily prepared to go to northern California to try and avert more bloodshed. With an Army escort commissioner McKee made his way north to Trinidad. From there he headed inland past Bloody Camp (a site where packers had been killed by Indians a year before) and crossed the Bald Hills to the confluence of the Trinity and Klamath Rivers at Weitchpec. He learned that Weitchpec was an important and convenient place whereby Indians might be gathered for a parley. McKee succeeded in meeting several Indians representing groups living on the Trinity River and the lower and middle Klamath River. The final document, signed on October 6, 1851, contained the signatures of 27 Indians, including five Hupa men representing the 12 villages in Hoopa Valley in the Trinity River Basin. Among the several stipulations, the treaty outlined boundaries of a 20 square mile reservation that would include Hoopa Valley on the Trinity River. Indians outside the boundaries would be removed to the reservation where they would become farmers. The treaty stipulated that 1000 acres of farm land in the reserve, presumably in Hoopa Valley, were to be set aside for white farmers and the remaining lands farmed by Indians. This latter stipulation shows how little McKee understood about the limited agricultural land in the Trinity Basin.

McKee forwarded the document to Washington D.C. for consideration by the

¹¹⁵Coy, The Humboldt Bay Region, 137; Alta California, 8/20/1850, Alta California, 8/22/1850.

¹¹⁶Bledsoe, History of Del Norte County, 7.

Senate, but that body rejected the treaty along with 17 others negotiated by the three California commissioners. Pressure from state and local interests prompted the Senate not to ratify the treaties and to sequester them. The main opposition to the treaties came from interests who feared that Indian reservations would lock-away valuable land and resources.¹¹⁷ Non-Indian interests took precedence over Indians in gold rush California. The failure of the Senate to ratify the treaty left the Indians, their land and resources, unprotected. Miners carried on their work without pause, and their activities broke the boundaries between the Indian and white worlds.¹¹⁸

When miners first entered the Trinity River Basin they established their camps at claims along the streams and rivers. The rugged topography of the Basin, as well as, the need for water for mining meant that there was limited habitable space. Favorable living surfaces were usually already occupied by Indians if there were resources nearby upon which they depended. Once the rush began, many Indians abandoned their homes in face of the onslaught or were outright driven away or killed. Competition for riparian space and the resources of the Basin were favorably tilted toward the miners because their mining activity and their overwhelming numbers rapidly disrupted the aquatic ecosystem and undermined the native peoples' ability to subsist in their traditional way.

Even such places as Hoopa Valley that lay far downstream from the majority of mining activity was not immune to the impact of mining in the upper Basin. Groups of

¹¹⁷Hurtado, Indian Survival, 141.

¹¹⁸The most comprehensive, but somewhat dated study of the region is Owen C. Coy, The Humboldt Bay Region, 1850-1875: A Study in the American Colonization of California (Los Angeles: The California State Historical Association, 1929). Another important work to consult regarding early mining and settlement of the Trinity River is Isaac Cox, The Annals of Trinity County (Eugene: University of

prospectors traversed the valley testing the river gravel for gold and killing game and taking fish. Some low-grade placer deposits were found in Hoopa Valley early in the gold rush, but the quantities of auriferous gravel discovered there were small so that few miners attempted to mine the Valley during the early gold rush. Instead, most bypassed Hoopa and headed for the rich diggings farther upriver and later to mines near the Klamath River at Orleans or on the Scott and Salmon rivers. But Hoopa Valley lay between the coast and the mines, thus, pack trains continually moved back and forth from the coast to the mines passing near the Valley making for a continual presence of non-Indians in the area.¹¹⁹

The physical presence of so many miners displaced Indians and crowded their world. By 1851, the Basin had been thoroughly explored, and thousands of miners crowded along rivers and streams in an area of rich placer gravels along the middle and upper Trinity River and its tributaries. The debris miners dumped into the streams and rivers degraded salmon habitat, and hampered the Indians' ability to catch fish. Debris contributed to the causes of the conflict between Indians and non-Indians because silt, sand, mud and rocks roiled area rivers and streams. While the first miners who entered the area used simple tools, their method of mining did not respect people living down stream or relying upon a healthy stream for subsistence. A brief description of early placer mining techniques gives some indication of the potential disruptive impacts of placer mining.

Oregon, 1940. First published 1858).

¹¹⁹Byron Nelson, Jr., Our Home Forever: A Hupa Tribal History (Salt Lake City: University of Utah Printing Service, 1978), 105. In April, 1874, miners were working gravels on the south end of the reservation square on the Trinity River. This caused conflicts between Hupas and miners, but because of

When prospectors found pay dirt, they laid claim to the site and began mining with the simple tools they carried on their backs or packed into the Basin. With picks, shovels, gold pans, long toms and rockers, miners first turned their attention to the auriferous (gold bearing) gravel bars along a river's meandering course.¹²⁰ The bars contained free gold easily separated from gravel using the tools at their disposal. They washed promising gravels on the banks of the Trinity River or tributary streams, depositing silt, rocks and gravel into the water, roiling the stream and creating myriad problems for aquatic life and the native peoples dependent upon the river for subsistence. If a prospect was not near water, miners dug ditches to divert water for washing gravel from an existing stream to a claim. At most claims pay dirt was overlain by a thick layer of overburden consisting of gravel, clay and soil. Miners tunneled down through the overburden to access promising gravels. They then dug out the gold-bearing gravel and hoisted it to the surface where they washed the dirt and clay contributing to the pollution of nearby rivers and streams.

Using these simple methods, miners rapidly exhausted the exposed auriferous gravel bars on the Trinity River and its tributaries. They then turned their attention to the actual beds of the rivers and streams. Because of its specific gravity, placer gold migrates over time to the bottom of river gravel near bedrock. Thus, miners devised ways to mine gravels to bedrock under a flowing streams. One early solution was the

reservation boundary disputes, the miners were allowed to continue working.

¹²⁰This discussion is a synthesis of information taken from Mines and Mineral Resources of Trinity County, California: County Report 4 (San Francisco: California Division of Mines and Geology, 1965); Gold Districts of California: Bulletin 193 (Sacramento: California Division of Mines and Geology, 1970); Owen C. Coy, Humboldt Bay.; Isaac Cox, Annals of Trinity County.; and Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest

wing dam. Wing dams were constructed directly in a river to divert the current into a small, narrow channel on one side of the stream to expose the gravels behind the dam. Miners then could mine the stream to bedrock. Miners built wing dams of logs, brush, dirt and stone, but could only do so when the rivers and streams were low because of limited technology and the need to avoid back flow around the dam. This meant that mining was at its peak during the late spring, summer and early fall months during the same time as the runs of eels, salmon and steelhead.¹²¹

Wing dams were obviously of limited value so placer miners erected larger, more complicated dams. These structures completely blocked and diverted a stream, were much more environmentally intrusive than wing dams. The most well-known of these early structures was the Arkansas Dam located four miles above present-day Junction City on the Trinity River. In 1851, a group of miners agreed to pool their capital and labor resources to build a large stone and brush dam to completely divert the river around their adjacent claims thereby exposing the entire riverbed for mining. The project was a major undertaking considering that the miners did not know how the river behaved. Unlike rivers such as the Sacramento or the Mississippi, the Trinity River acts more like a mountain stream. If there is heavy precipitation in the upper Basin, the Trinity rises quickly in a freshet. If not taken into consideration, this river behavior undermined human activity. The Arkansas dam was near completion when it was destroyed by flood.

(Playa Del Rey: Geoscientific Systems and Consulting, March, 1981).

¹²¹Owen C. Coy, The Humboldt Bay Region, 1850-1875: A Study in the American Colonization of California (Los Angeles: The California State Historical Association, 1929), 129; Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey: Geoscientific Systems and Consulting, March, 1981), 29. See also, Rodman W. Paul, California Gold: The Beginning of Mining in the Far West (Cambridge: Harvard University Press,

The miners were not deterred, and made two more attempts to rebuild the structure at the same site during subsequent mining seasons, but each time it failed because of rapidly rising water and they finally conceded defeat. Each time the Arkansas dam fell, it deposited more and more debris into the main stem of the Trinity River and the anadromous fish habitat so vital to the survival region's native peoples.¹²²

The bars and beds of the Trinity and its tributaries were not the only places containing gold; the benches and terraces next to and above area streams also contained placers. These areas were dry, therefore miners had to bring water to them from nearby rivers and creeks. Miners dammed streams and rivers to divert water. They dug ditches where the terrain permitted, but for extremely rugged terrain, they erected wooden flumes that could be built upon trestles over rugged country permitting miners to wash gravel deposits far from a river's edge. This expanded the amount of land that could be mined for gold, but also took water from its source diminishing the amount within the original stream. One result of this activity is that they removed a large quantity of water from the Trinity River and its tributaries reducing the water available for salmon and other fishes while at the same time they polluted the water that remained in the stream.¹²³

Another consequence of the discovery and exploitation of deposits distant from a

1947).

¹²²Cox, Annals of Trinity County., 44; Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey: Geoscientific Systems and Consulting, March, 1981),29.

¹²³Cox, Annals of Trinity County., 61., Cox toured the Trinity from just above the Hoopa Valley to the upper reaches of the river. He lists seventy six flumes and ditches and eighteen water wheels operating on the upper and middle Trinity in 1858. This should be considered a low estimate because the author did not give specific details on every site he visited, nor did he tour the lower Trinity River.; Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey: Geoscientific Systems and Consulting, March, 1981), 30.

source of water is that water itself became a valuable commodity. There was no mining without water.

When miners first entered the Basin this was not a problem, but as more mines were opened away from rivers and streams, access to and ownership of water caused conflict between the miners themselves. For example, an enterprising individual named William Ware built a dam and ditches on West Weaver Creek in the early 1850s and began selling water to miners owning dry claims. Miners who relied upon water in West Weaver Creek did not oppose Ware's operation until a drought limited the supply and Ware diverted almost the entire stream into his ditch. In frustration the miners armed themselves and went to Ware's dam and destroyed it letting water run once again. The conflict turned on water rights. Did the miners adjacent to the stream have a riparian right to the water regardless of when they arrived at the site? Or did Ware, who diverted the stream well before many of the miners who opposed him were in the area, have the right to turn the stream into his ditch because he appropriated the stream first? Ware filed a complaint, and eventually, in one of the first water rights cases in California that addressed the issue of riparian rights versus prior appropriation, the Ninth Judicial District Court of Trinity County ruled in favor of Ware upholding the doctrine of prior appropriation. More water rights litigation followed as more ditches were constructed, and periodic droughts exacerbated the problem.¹²⁴ Miners competing for water, a limited resource, began turning to the court system as their own ability to compromise with one

¹²⁴The best treatment of the struggle over West Weaver Creek and the War controversy is found in Donald Pisani, "The Origins of Western Water Law," *California History* 70(Fall, 1991):242-257, 324-325. Also see Isaac Cox, *The Annals of Trinity County, 191-193*, and John Carr, *Pioneer Days in California, 254-262*.

another declined.

Early placer mining in river and stream channels took place during the time of year when the water was low enough to allow miners to use the limited resources and tools they possessed to access the beds of rivers and streams. The mining season lasted generally from the late spring to the early fall, which coincided with the runs of eels, salmon and steelhead so important to the sustenance and spiritual lives of the regions Indian peoples. The impact on the Indians must have been profound. First eel and salmon ceremonies had to be observed to ensure a bounty and the return of fish. A roiled stream hampered the ability of a shaman to catch fish and insure a future food supply. The construction of communal and private fish weirs had to go forward, but a severely polluted stream and the presence of miners digging for gold could hamper those life-giving activities.

The failure of the Senate to ratify the 1851 Treaty and set aside a reserve for the Indians left them vulnerable to the effects of placer mining and the influx of non-Indians. In the lower Trinity Basin near Hoopa Valley there were few miners and a limited non-Indian presence. But because the Basin was so isolated, and because freighting goods overland from the coast or Central Valley, people began to look for places within the Trinity watershed whereby they might locally produce goods to sell to miners. One of those places was the Hoopa Valley. Because the valley was better suited to farming, and because it was closer to the mines, marketing valley products to hungry miners was potentially profitable.¹²⁵

¹²⁵Byron Nelson, Jr., Our Home Forever: A Hupa Tribal History (Salt Lake City: University of Utah Printing Service, 1978), 105. In April, 1874, miners were working gravels on the south end of the

David Snyder was the first non-Indian to settle in Hoopa Valley. Captain Snyder, as he was commonly referred to in the local press, located in the valley in 1853.¹²⁶ While the valley was not rich in gold, it contained considerable arable land, a rarity in mountainous inland northwestern California. Snyder believed that if he could farm the Valley, he might use the Trinity River as a transportation artery to ship his produce up river to market. Snyder set up a wheat farm, and in the virgin soils the wheat did well. Snyder also built a grist mill and began milling wheat for market. Although the Trinity proved unsuitable for navigation, his agricultural endeavors were successful. He had access to the trails to the mines that passed near Hoopa Valley. He reportedly made handsome profits supplying miners with produce and flour. The Hupas tolerated his presence in the valley, but they now had to compete within their own home for the resources upon which they relied.¹²⁷

Farther up river, miners crowded the canyons of the Trinity River and its tributaries. The most productive gold claims were along a seventy-five mile stretch of the middle and upper Trinity River and its tributaries in Chimariko and Wintu territory. These people were rapidly overrun by miners. In the upper Basin the Indians were in a more precarious position than the Hupas down-river because the presence of so many

Square on the Trinity River. This caused conflicts between Hupas and miners, but because of reservation boundary disputes, the miners were allowed to continue work. See also George Gibbs, George Gibbs' Journal of Redick McKee's Expedition Through Northwestern California In 1851, Robert Heizer, ed. (Berkeley: Archaeological Research Facility, Department of Anthropology, University of California, 1972), 40, 47; George Osborne Anderson "The Hoopa Valley Reservation in Northwestern California: A Study of its Origins", 25, 52.

¹²⁶George Osborne Anderson, "The Hoopa Valley Reservation.", 48; Byron Nelson Jr., Our Home Forever., 67; Humboldt Times, March 3, 1855.

¹²⁷Nelson, Our Home Forever, 61-62.

miners threw their world into chaos. Nevertheless, during the first decade of the Gold Rush, violence directly in the Trinity Basin was sporadic. Just outside of the Basin, however, gold strikes to the north and west on the Klamath, Scott and Salmon rivers drew in thousands of miners to those areas, and violence erupted there that affected the Indians in the Trinity River Basin.

In 1854, a conflict known locally as the Red Cap War erupted near Orleans up-river from Weitchpec on the Klamath. While this war did not openly involve the native peoples of the Trinity Basin, the Red Cap War prompted the United States government to enter the region and establish a presence there. The Commissioner of Indian Affairs, George Manypenny, called for the creation of a reservation to isolate Indians and stem the tide of violence. On November 16, 1855, at the urging of the Indian Office, President Pierce set aside 25,000 acres as a reservation.¹²⁸ The reservation, known as the Klamath Reserve, began at the mouth of the Klamath River on the Pacific Ocean, and ran 20 miles inland from the coast encompassing one mile on each side of the river all within the territory of the Yuroks. There were some areas along the lower Klamath where farming could be conducted, and the Indian Office hoped to prevent more violence by sending the regions native peoples to the isolated area where there were no mines or pack trails and very few non-Indians. Only Yuroks, who already resided on the lower Klamath, and a few Indians from Smith River to the north, occupied the Reservation. The Indians of the Trinity Basin, rather than remove to the Klamath Reserve, attempted as best they could to remain in their home territories.

¹²⁸Charles Kappler, Indian Affairs, Laws and Treaties: Volume 1, Part 3. Executive Orders Relating to Indian Reserves, (Washington D.C.: GPO, 1904) 816-817. The reservation was destroyed by

The Hupa refused to remove to the Klamath, even as more non-Indians began to arrive in their valley. For example, a year after Captain Snyder moved to Hoopa, a local newspaper reporter commented: "We learn of one or two parties, who commenced mining in Hoopa Valley last week, have been very successful. It is the first work [mining] ever done there. . . ." According to the article, the auriferous gravel deposits in Hoopa Valley were large enough to support several hundred miners for many years.¹²⁹ The next year, in 1855, a reporter stated that in an effort to attract miners to Hoopa Valley, several ditch companies had been formed by non-Indian valley residents in an attempt to profit from the many streams feeding into the Trinity River. To encourage mining these companies offered to provide free water to any miner who failed to make at least five dollars a day from his claim.¹³⁰ But mining in the valley never amounted to much. In 1856, a local newspaper reported that, "[t]here are at present quite a number of Chinamen mining along the Trinity in the valley, and they seem to be doing well."¹³¹ In typical fashion, Euro-Americans shunned the low-grade gravel of Hoopa Valley and left it for Chinese miners who were willing to work less-productive gravels.¹³²

The Hupas responded to this new presence by taking advantage of the possibilities

flood in 1862.

¹²⁹Susie Baker Fountain Papers, Notebooks. Humboldt State University, Humboldt Room, Arcata, California., vol. 34., 65-6. See also: "Mining in Humboldt County," Humboldt Times, December 30, 1854.

¹³⁰Susie Baker Fountain Papers, Notebooks. Humboldt State University, Humboldt Room, Arcata, California., vol. 34., 65-6.

¹³¹Susie Baker Fountain Papers, Notebooks. Humboldt State University, Humboldt Room, Arcata, California., vol. 34., 65-6.

¹³²Byron O. Pickard to George S. Rice, Chief Mining Engineer, United States Bureau of Mines, June 20, 1922, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, 1907-1939, Hoopa

that the new arrivals represented. They did not sit idly by watching non-Indians take their water and land. Although they were seeing their world altered, they also recognized opportunity to participate in this new world. The *Alta California* reported that there were many agricultural and other opportunities in Hoopa Valley. Moreover, there was no labor shortage because the Hupas there would hire themselves out as farm and mine laborers for one dollar a day.¹³³ Willing participation in the money economy of the non-Indian world is not surprising considering the Hupas already embraced money (dentalium shells) as a medium of exchange and wealth was a way to gain prestige among their own people.

While Indians willingly participated in the new economy brought to them by the gold rush, they remained at a disadvantage in the contest they did not voluntarily enter. During the 1850s the State of California stepped in to stack the deck against them. For example, California authorized local residents to form militia companies in the event of war between Indians and newcomers. These state-funded volunteer military units were essentially state-sanctioned vigilante squads with little discipline or regard for Indian lives. The local volunteer units often exacerbated the violence because they wanted to rid themselves of the regions' indigenous population.¹³⁴ Their encounters with Indians often deteriorated into bloody massacres of innocent people. If Indians wanted to turn to local civil authorities or courts to redress these wrongs, they could not. The state of California

Valley, Box No. 44, File 332, "Mines, Mineral Lands, Mining," National Archives, Washington, D.C.

¹³³Alta California April 9, 1857, 2:3.

¹³⁴The number of Native Americans killed in northwestern California is uncertain, but some authorities claim that as many as 15,000 indigenous peoples were murdered by whites between 1850

made it illegal for an Indian to testify against a white person in court. If an Indian wanted to defend himself with an adequate weapon, he was legally forbidden from doing so because in 1854, the legislature passed a law making it illegal for Indians to own firearms.¹³⁵ The state allowed whites to “indenture” Indians captured in war or found to be orphaned. This encouraged a vigorous illegal slave trade in Indians who were routinely kidnapped and sold under the guise of a legal indenture.¹³⁶ Clearly, the State stood behind and supported non-Indians in their competition with Indians over the use of local resources, and non-Indian interests were to drive the transformation of the Basin with the aid of the state.

By the mid-1850s, non-Indian settlement was spread across many parts of the Basin. Camps and towns dotted the landscape, many were located near the Trinity River or one of its tributary streams, and mining continued at a brisk pace. Weaverville was the County seat located on Weaver Creek. There was also Douglas City, Junction City and Trinity Centre on the Trinity River, as well as numerous camps such as Big Bar, Rich Bar, and many others on tributary streams such as Coffee Creek, Stuart’s Fork and others. Widespread mining activity produced debris that clogged rivers and streams causing problems not only for Indians, but whites as well.¹³⁷ Debris destroyed property, disrupted

and 1870. See: [Genocide in Northwestern California](#).

¹³⁵Nelson, [Our Home Forever](#), 63.

¹³⁶Nelson, [Our Home Forever](#), 63-64, 66.

¹³⁷The debris from mining that accumulated in the Trinity and Klamath basins moved down with each storm. By 1862 the debris reached the mouth of the Klamath River where a flood in that year devastated the Klamath Reserve set aside in 1855. The flood washed away 29 of 30 reservation buildings, and deposited debris three to four feet deep upon the site. The Department of the Interior abandoned the reservation as a total loss. Records focus on the severity of the flood, but do not speculate as to the source

the regional transportation network serving local communities, and forced some residents to abandon their homes and businesses. The debris issue received little attention from the contemporary press and other observers, but there is some fragmentary evidence that gives a limited picture of some of the consequences of debris deposition for non-Indians in the Trinity River Basin.

John Carr, an early arrival in Trinity County, recorded his observations of the Trinity Mines. On an unnamed stream below Weaverville feeding into the Trinity River, Carr observed that during the early rush to the Basin, a man named Lathrop hit upon the idea of trapping fish and selling his catch to hungry miners. Lathrop constructed a fish trap and apparently did a brisk business selling his catch to hungry miners at fifty cents a pound. His fish business depended on a healthy river and a reliable run of salmon. But Carr tells us that as mining expanded, the miners discharged so much debris into the stream that they forced Lathrop out of business:

The fish operation was soon a failure, for when the mines came to be opened, the debris running into the Trinity stopped the salmon from running upstream. From a clear mountain stream it became a red, muddy river to its mouth, which was death to salmon.¹³⁸

Mining took precedence over fishing, even if it was a non-Indian fisherman. Here,

of the debris. It is likely that mines on the Klamath and Trinity Rivers were the source. See George Osborne Anderson, "The Hoopa Valley Reservation in Northwestern California: A Study of its Origins", Master's Thesis: University of California, Berkeley, 1956, 136, fn.66.

¹³⁸John Carr, Pioneer Days in California (Eureka, California: Times Publishing Company, 1891),

resource competition between non-Indians led to the failure of one resource-based business at the hands of another.

A few years after Lathrop's business folded, the editor of the *Trinity Journal* described how the miners disposed of their debris as the mining season commenced on the Trinity River. This technique undoubtedly contributed to the failure of Lathrop's fish business. The editor stated:

We have been informed that the miners along the Trinity are beginning to work in earnest. At Big Flat the large wheel at the head of the flat supplies the miners with an ample supply of water, and they are fast sending the "top dirt" down the river. At other points along the river the mines are flourishing.¹³⁹

Sending the "top dirt" down the river not only caused disruption of spawning runs, it impacted the regional transportation network. After the mines had been in operation for several years, a man named Allen Butler wrote to the Trinity County Board of Supervisors at Weaverville and asked that Trinity County provide funds to raise the existing bridge across Canyon Creek on the road from Weaverville to the Salmon River mines-an important transportation artery. Butler stated that the bridge was no longer

148.

¹³⁹File: "Trinity River-Dam," Doc #2, p.7. February 9, 1856, Weaverville Historical Society Museum, Weaverville, California. Article possibly from the *Trinity Journal*.

effective because Canyon Creek had filled with mining debris.¹⁴⁰ Butler did not ask that somebody should step in and regulate mining, but he did turn to local authority for redress. Mining fueled commerce in the region, but the debris caused by mining hampered that very same commerce. The communities in the Basin were connected by a series of trails and roughly constructed roads that already made travel difficult, and mining debris could exacerbate the problem.

Debris from mining also destroyed property. Near Weaverville, mining debris filled a creek known as Garden Gedde. When the rains came, the creek flooded resulting in the loss of nearby property. Franklin Buck, an early settler at Weaverville, wrote that every rainstorm brought flooding because "the bed of the stream has been filled up with tailings from the mines and it [the stream] runs anywhere and cuts a channel either close to the bank or a hundred feet off".¹⁴¹

Mining was not the only resource activity conducted by non-Indians that contributed to the clogging of streams and the flooding associated with it. Logging was a vital activity that began as soon as miners reached the Basin. The need for wood in mining and construction spurred the development of a local logging industry closely tied to mining. Unlike along the coast and Humboldt Bay where logging and milling grew into a powerful industry by the mid-1850s, the difficulty of the terrain in the Trinity Basin made early logging and saw milling a local affair with the market for sawed lumber contained mostly within the Basin. Miners and local residents required sawed lumber for

¹⁴⁰Allen Butler to the Trinity County Board of Supervisors, August 8, 1858, Trinity County Petitions, C-A 318, Bancroft Library, University of California, Berkeley.

¹⁴¹Franklin A. Buck [A Yankee Trader in the Gold Rush: The Letters of Franklin A. Buck](#),

building flumes, water races, water wheels, diversion dams, fuel and, of course, commercial structures and private dwellings.

Lumbermen built the first sawmills as close to the site of demand as possible. Once logging began in earnest, lumberjacks cut most trees near at hand if they were of sufficient size to fulfill an intended need, leaving the rest for firewood. Loggers cut stands of timber on public land, often without a permit or having paid any fees. Settlers could claim 160 acres of government surveyed land for \$1.25 per acre under the Preemption Act of 1841 if they could prove residence and cultivation. Of course this requirement was almost impossible for the new settlers arriving in northwestern California because settlement in California moved well in advance of government surveyors. Thus, timber tracts were technically claimed and cut illegally. In 1853 the federal government responded by opening un-surveyed lands (excluding mineral lands) to preemption as well making it possible to pay \$1.25 per acre for un-surveyed public lands. After that there was no real barrier to logging in the Basin except a lack of markets or water to power mills.¹⁴²

Lumbermen proceeded to cut trees indiscriminately with little regard for property rights, and with even less regard for the rights of indigenous peoples or the potential harm

Katherine A. White, ed. (New York: Houghton Mifflin Company, 1930), 191.

¹⁴²Geoscientific Systems and Consulting, Overview of the Cultural Historic Resources of Euroamerican and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey, California, 1981), 107. Coy, The Humboldt Bay Region, 80-83. The Homestead Act of 1862 and the Timber Culture Act of 1873 were used by lumbermen to gain access to timberlands, although they were not intended for such purposes. The 1878 Timber and Stone Act was specifically designed to allow lumbermen access to timber. All of these acts were abused and eventually the led to the creation of forest reserves in the early-twentieth century.

their activities had upon the environment.¹⁴³ Once a mining claim played out, the claim was sold or abandoned and the mining company or individual mill owner shutdown or moved the mill to another location. This practice, and the fact that placer claims played-out rapidly, meant that most sawmills in the Trinity River Basin in the 1850s were short-lived and their history remains obscure.¹⁴⁴

Isaac Cox, the first person to write a description of the Trinity River mines, toured the Trinity River Canyon through the busiest mining areas in the late 1850s. He noted that every mining camp along the Trinity River had its own sawmill.¹⁴⁵ These mills were usually water-powered, and diverted water from nearby streams or the Trinity River to turn water wheels and power saws. Loggers in the Basin cut a wide variety of trees including Douglas fir, yellow and sugar pine, white and red fir, and incense cedar. Redwood was not available in the Trinity Basin because it is outside of the “Redwood Belt”, that strip of Redwood habitat paralleling the coast of California from San Francisco Bay northward to Oregon.

Franklin Buck, who is mentioned earlier in connection with the flooding of Garden Gedde near Weaverville, was also a lumberman. His logging activities provide us with a good example of the operational history of early sawmills in the Trinity River Basin. In 1856, Buck and a partner erected a sawmill along the North Fork of the Trinity River in the upper Basin. The men built a dam to back up water to create a mill pond for

¹⁴³Hyman Palais and Earl Roberts, “The History of the Lumber Industry in Humboldt County,” Pacific Historical Review Vol. 19., No. 1. February, 1950., 1.

¹⁴⁴Geoscientific Systems and Consulting, Overview of the Cultural Historic Resources.,109.

¹⁴⁵Isaac Cox, The Annals of Trinity County, 1858 (n.p.), 61.

manipulating saw logs, and diverted water to power the mill. They sawed logs into boards, and sold the wood miners. Buck wrote that the lumber “was floated . . . down the North Fork into the Trinity and used, most of it, for building flumes in the [Trinity] canyon.”¹⁴⁶ The flumes were essential for supplying water to placer mines. By 1856 mining was being conducted on the gravel benches above and away from the Trinity River and other streams using a new placer mining technique called hydraulic mining (discussed in the next chapter). Hydraulic mining was developed at Nevada City in the Sierra Nevada, and was adopted in the Trinity Basin, because it allowed miners to wash enormous amounts of gravel quickly.

During the Summer of 1856, Buck estimated that he sold 100,000 board feet of lumber to the mines, but his business suffered severe fluctuations. Orders varied considerably with the rapidly changing fortunes of the mines along the river. Apparently the flush times were limited because Buck and his partner closed their operation by the end of the decade. The record does not indicate if he resumed logging and milling in another location.¹⁴⁷ In the late 1850s, the Trinity County Assessor reported that there were eighteen water-powered sawmills operating in Trinity County.¹⁴⁸ One was the Warrener Mill operating on Little Weaver Creek, a tributary of the Trinity River near Big Flat. This operation cut an estimated 100,000 feet each season. Isaac Cox also noted that

¹⁴⁶Franklin A. Buck, A Yankee Trader in the Gold Rush: The Letters of Franklin A. Buck., Katherine A. White ed. (New York: Houghton Mifflin Company, 1930), 161.

¹⁴⁷ Franklin A. Buck, A Yankee Trader in the Gold Rush: The Letters of Franklin A. Buck., Katherine A. White ed. (New York: Houghton Mifflin Company, 1930), 161; Cox, Annals of Trinity County, 61.

¹⁴⁸County Assessors' Reports of County Statistics, 1858, Trinity County. Governor's Files, Folder

a sawmill at Manzanita Flat was “flourishing” during his tour of the Basin.¹⁴⁹

While the evidence is not abundant, early logging operations in the Trinity River Basin contributed to erosion and the further degradation of the health of the Trinity River and its tributaries. Although we do not have documentation clearly linking early logging practices in the Basin to erosion and increased flood damage, the observations by miners and others who noted the debris clogging the region’s streams provides anecdotal evidence supporting this conclusion. It is safe to speculate that some of the early flooding occurring on the Trinity River soon after the arrival of miners and loggers was exacerbated by the fact that loggers often took every salable tree near at hand leaving soils vulnerable to erosion. Since sawmill operators built the first mills near streams and rivers to harness their water to power saws and fill log ponds, it is highly likely that logging contributed to stream pollution. While it is clear that mining was the main source of the debris making its way into the Trinity River during the nineteenth century, logging surely contributed to the problem.

The extensive impact of early, non-industrial placer mining in the Trinity River Basin rapidly and extensively disrupted the ecosystem of the region. Native Americans responded to the incursion first through accommodation, and then resistance.¹⁵⁰ Rampant warfare along Redwood Creek among the Chilula and Whilkut and on the Klamath River mines spilled into the Trinity Basin. By 1858, Indian-white warfare was rampant

#544, California State Archives, Sacramento, California.

¹⁴⁹Cox, Annals of Trinity County, 61; Geoscientific Systems and Consulting, Overview of the Cultural Historic Resources, 117.

¹⁵⁰Stephen Powers, Tribes of California, 73.

throughout the northern coastal region. Within the Trinity watershed fighting was particularly heavy on the upper-Trinity River among the Wintu and Chimariko. Down river, the Hupas were outside of the major mining areas, were not openly involved in these conflicts, and were less impacted by them at first than were the Chimariko and Wintu. The truth, however, is that the Hupas used diplomacy and secrecy to make their non-Indian neighbors think they had no hand in local hostilities while secretly aiding their neighbors in the war against white incursion.¹⁵¹

By 1858, the indigenous people of the area began to mount a stiff resistance against whites. Indians managed on several occasions to completely shut down pack trails into the mines from the coast. Miners received almost everything they consumed via pack trains, and the closure of the pack trails was a serious threat. In response, the United States Army stepped in to provide escorts for the pack trains to protect them from attack and insure that miners would continue receiving supplies. Forts were erected in strategic areas so that the Army could respond to conflicts and stem the violence. Nevertheless, attacks against settlers and miners were frequent. Something had to be done to end the violence, but there were few options open. Whites could not exterminate all the regions' Indian peoples, although some settlers viewed this as a final solution to the problem. Removing the Indians to reservations was an option, and supporters of this approach claimed it held the potential for providing care and education for the Indians. Many settlers opposed the reservation idea arguing that reservations would instead lock up resources valuable to whites. With no consistent policy for addressing the Indian

¹⁵¹Nelson, Our Home Forever, 66-67.

problem, the native people struggled to cope with the disruption of their subsistence system and open warfare directed at them by whites.

The Hupas were initially spared from the onslaught of miners who overran Chimariko and Wintu territory farther up-river. The Hupas tolerated the presence of whites within their valley because they understood that open resistance to white settlement might result in the total destruction of their homes and forced removal to the Klamath Reserve or possibly another reserve elsewhere in the state. However, Captain Snyder and other valley settlers suspected that the Hupa were secretly aiding their neighbors in their war against the whites (they were), and so they took matters into their own hands. In October 1858 Snyder and a groups of settlers took Captain John, a prominent Hupa man from the village of Me'dilding and a signatory to the 1851 treaty negotiated by Redick McKee, to Humboldt Bay and the town of Eureka. They boarded a steamer and sailed to San Francisco with two intentions. First, the settlers wanted to intimidate Captain John. If, as they suspected, the Hupas were aiding other tribes at war in the region, Captain John would see a great American city and realize that resistance to white settlement was futile. Second, Snyder carried in his pocket a petition from the settlers of Hoopa Valley addressed to Congress asking that the Army establish a military post in the valley to make sure the Hupas remained peaceful and, if possible, that the Hupas be removed to a distant reservation.

The delegation arrived at San Francisco Bay two days after leaving Eureka. The impact of the city on Captain John and his companions can only be guessed at, but it must have been impressive to a man who had certainly never traveled far from his valley home. Undoubtedly Captain John saw a forest of ships' masts; San Francisco Bay was

the premiere port on the West Coast. The city itself bustled with people from every corner of the globe. The number of people, reported to be 50,000 at the time, the countless buildings and houses, the ships in the Bay must have been an amazing sight.

The local press reported:

. . . [Captain John] could not control his wonder when our city burst into view...as the steamer rounded the point, he very anxiously inquired, ‘How long it took to build it,’ expressing a strong doubt of the statement when told it had all been done in ten years. He said that his people had never seen many whites, and they believed our numbers to be few....

The *Humboldt Times* reported that Captain John told his fellow travelers that “...he [would] tell all the tribes...of the mighty power and countless numbers of the whites.” After returning to Hoopa Valley, Captain John reportedly stood on the bank of the Trinity River and scooped-up a handful of sand. He slowly allowed the sand to sift through his fingers while informing his people that the whites were as numerous as the grains of sand and resistance would be useless. More importantly, on October 30, 1858, the *Humboldt Times* reported that the United States Army moved troops into Hoopa Valley and established Fort Gaston.¹⁵² Thus, a permanent military presence arrived in the valley and the Trinity River Basin.

¹⁵²Quoted in Byron Nelson, Our Home Forever., 67-68.



Captain John. Ca. Photo taken October 1906 as noted in pencil on reverse. Photograph possibly by Kroeber, Goddard, or Ericsson. Similar photos of Captain John are published elsewhere. 58 years before this photograph, David Snyder and several other white residents of Hoopa Valley took Captain John to San Francisco in an attempt to intimidate him hoping he would stop the Hupa people from joining in the Indian-white warfare then raging in northwestern California. Authors' personal collection.

By the late 1850s, much of the gold-bearing river gravels in the Basin had been mined more than once and returns from river mining were diminishing. For example, the auriferous gravel underlying Deadwood Creek near Lewiston had been mined three times

from the mouth of the creek where it meets the Trinity River upstream for three miles. By 1858, Chinese miners, who often re-worked claims abandoned by white miners, completely diverted the Trinity River into flumes where it flows in the canyon between Northfork and Big Flat, and mined the gravels in the river a total of six times.¹⁵³ To continue making profits, miners had to turn their attention to pay dirt farther away from rivers and streams. When Isaac Cox toured the Trinity River Canyon in 1858, he counted 76 flumes and ditches taking water from the Trinity and its tributaries. He also noted that there were 18 water wheels operating in the canyon, some as large as 40 feet in diameter, lifting water out of the river into races so the water could be used elsewhere.¹⁵⁴ Thus, ten years after the initial rush to the region began, gold mining in the Basin was shifting from relatively simple channel mining to more sophisticated industrial hydraulic mining that would expand the scale of mining and its negative environmental consequences.

¹⁵³Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey: Geoscientific Systems and Consulting, March, 1981), 30-32.

¹⁵⁴Cox, Annals of Trinity County, 61., Cox toured the Trinity from just above the Hoopa Valley to the upper reaches of the river. This number is low. Prior to the publication of Cox's work, the Alta California reported that Trinity County had a total of 120 mining ditches. This information is in Donald Pisani, "Origins of Western Water Law," fn. 32.



Waterwheel. Photo ca. 1910. This waterwheel is of the typical design used in early placer mining on the Trinity River. This wheel was located on the upper-Klamath River. Photo postcard. Authors' personal collection.

From 1858 onward, the Indian peoples of the Trinity Basin had to contend with people backed by military force. The federal government became a permanent presence in the area, and as far as native people were concerned, the United States would begin to

implement a policy to re-direct the way Indians used resources in the Trinity River Basin. Military presence in the Trinity Basin failed to end the Indian-white warfare immediately, but by 1858, the Trinity Basin was no longer wholly Indian Country and Indian time was at an end. The combination of the miners intruding upon the territory of the Basin's native peoples, and the discharge of mining debris into rivers coupled with the removal of water devastated the salmon runs and late in the decade sparked conflict with the local Indian population that would continue into the 1860s.

Chapter 3

Confining Trinity River Indians to a Reservation: 1858-1864

By late-1858, Indian-White warfare in northwestern California was rampant. Violence erupted within the Trinity River Basin, and outside the Basin as well. Warfare along the Klamath, Scott and Salmon rivers to the north and east impacted the Trinity Basin peoples, as did conflicts along Redwood Creek west of the Basin and on the Mad, Van Duzen and Eel rivers to the south and southwest. Because the Indians of the northwest lived in such close proximity to one another, and there were so many small tribes with close relationships, the conflicts engulfed all Indian peoples of the region. Indians aided their Indian neighbors in the effort to repel the white advance, and to retain control of their territories and resources. The newcomers, for their part, continued to move into the region adding to their own numbers and increasing pressure on Indian peoples and resources. Because fighting was regional rather than confined to the Trinity River Basin, we must look at the course of Indian-white conflict generally so that when a relatively peaceful period returned to the Trinity River Basin in 1864, the new world of the Indians and the whites will make sense. Finally, it is important to keep in mind that although the federal government eventually used federal military force to compel the Indian peoples to move to a remote reservation and embrace agriculture and ranching as a new way of sustaining themselves, the actions of local non-Indians, including townspeople, miners and merchants, and the reluctance among Indians themselves to cave into white pressure actually shaped the outcome of the course of events rather than a consistent, one-sided directed government policy.

The common scenario cited by whites as the cause of violence between Indians

and whites was the commission of depredations by Indians upon property owned by non-Indians. Indians stole cattle or some other property, and whites then tracked them down to recover the stolen goods. In the process of recovering stolen property, Indian villages were often attacked, Indians were killed, and survivors faced the possibility of being “indentured.” This biased scenario, which dominated the newspaper reporting at the time and the memoirs of those who witnessed the events, ignored several important factors that led to violence. The newcomers overran Indian homes, roiled streams with mining debris which killed fish, and introduced livestock that ate important plant foods, such as acorns, that were staple foods for Indians. When Indian resources failed, or when Indians were prevented access to them, they were faced with starvation and had few choices but to prey upon cattle and other white-owned resources for survival. Resentment, too, drove the violence. Because of the system of legal indenture, Indian slave traders scoured the countryside in search of Indians. Once a village was located, the slavers attacked, killing resistors and rounding up others, usually women and children, whom they then sold to farmers and others who used them as laborers or domestics. Those who managed to escape the attack retaliated and killed whites if they could. Retaliation was not merely driven by anger or hatred, but had a cultural component as well. Many Indian tribes of the region believed that a life taken had to be paid for in kind. If goods or money were not given to the family of a slain person, the relatives of the deceased had a duty to avenge his or her murder. Relatives, it should be remembered, were not only those people related to one another by blood or marriage, but also by clan and moiety thus relationships were complex.¹⁵⁵ In response to Indians trying to even the score, whites

¹⁵⁵The system of payment to a family for loss of property or the death of a relative is common throughout

raised volunteer militias to punish the Indians. The militias used the common tactic of surrounding a village at night and attacking sleeping Indians at dawn. After the attack, whites burned Indian houses and food stuffs to discourage re-habitation of the site and to starve any people who managed to escape into submission. Thus, a complicated cycle of violence perpetuated itself. It would take a concerted effort by the United States Army and the Indian Office to put a stop to the killing, but it took several years before the violence ended. Once the conflict was over, the federal government was firmly entrenched in the Trinity River Basin, and the indigenous people were no longer a deterrent to the free use of the resources of the Trinity River Basin.

Increased federal military presence in the Trinity River Basin began in 1858. The United States Army began pushing into the area in response to increased violence arising from the efforts by local, non-Indian residents and state officials pushing to clear the region of all Indian peoples, regardless of who they were or what they had done. By the late 1850s, Indian-white warfare was out of control. When a clash occurred, no matter who was at fault or what led to the incident, the first response among whites was to form volunteer militias to chastise Indians. Non-Indians also petitioned the state and federal governments for help in suppressing hostile Indians. In fact, local non-Indian actions drove much of the state and federal policy directed at the Indians of the region. By the

the northwest culture area. Taking a life for a life was also acceptable, but was less preferable to payment in goods or money because revenge killing could lead to continual violence and blood feuds could develop. In 1851, George Gibbs, the interpreter accompanying Redick McKee during the treaty negotiations at Wietchpec mentioned this system of payment and retaliation. While speaking with an important leader from a Yurok village, Gibbs noted that the man claimed his people were still owed one life by the whites. Gibbs noted, "The Chief, with great formality, displayed a bone, marked on one edge with twenty-six notches, being the number of white men admitted to have been killed upon the Klamath; while the other side of it counted twenty-seven, as the number of Indians killed by the whites." In this instance the treaty negotiators resolved the conflict by giving the village blankets and axes to compensate them for the discrepancy in numbers. Quoted in, George Gibbs' Journal of Redick McKee's Expedition through

late 1850s, volunteer militias had been operating against Indians in the area for several years, but these groups were without legal standing, financial backing, and were usually formed for a specific attack and quickly disbanded. As trouble between whites and Indians continued, white citizens, particularly in coastal towns such as Trinidad and Eureka where supplying the mines was important to the local economy, clamored for the state of California or the United States to send more troops into the region to end the Indian troubles.



Women and a child of the Klamath and Trinity region wearing a mixture of traditional and non-tradition clothing. Photo postcards ca. 1910-1920. Possibly Art Ray, Patterson or Eastman. Authors' personal collection.

As early as 1853 the United States Army established Fort Humboldt at Eureka on

Northwestern California in 1851, Robert F. Heizer, ed. Berkeley: University of California Press, 1972, 47.

the coast in response to troubles along the Klamath. Fort Humboldt was too far from the mining areas to be effective in quelling violence inland. In 1855 the Army established Fort Terwar to prevent trouble between miners and Indians living on the newly established Klamath Reserve. The Army also established posts in the Salmon and Scott river region, and in 1858 selected Hoopa Valley as the site for Fort Gaston in the Trinity Basin. The number of federal troops, however, was simply too few to meet white demands to subdue the Indian populations and to completely clear the region of Indians. Public relations played an important role in forcing the Army to make a more concerted effort to pacify the region. Local newspapers criticized the commanders of federal forces for not doing their jobs. Officers followed the orders of their superiors rather than bowing to the demands of local residents who then derided the officers in the local press as incapable, corrupt and incompetent.

When locals deemed the federal government's response inadequate (or, not severe enough), they raised their own volunteer troops to chastise the Indians. For example, in 1858 citizens of Union (Arcada) and Eureka raised subscriptions to fund a militia to attack Indians who were raiding along the pack trails leading to the Trinity and Klamath mines. The citizens also turned to the state and requested assistance in the form of money and soldiers. In response, Governor Weller asked the United States Army to send additional troops to the region. The Army responded by dispatching only a single detachment to Fort Humboldt. These soldiers turned out to be too inexperienced and poorly trained to be of much use beyond escorting pack trains. Weller also ordered State Adjutant General William Kibbe to Weaverville in the Trinity River Basin to organize two companies of militia with the goal of punishing Indians and to clear the trails

between Weaverville and the coast. Kibbe raised a company of 70 men at Weaverville, and he assigned Captain I.G. Messec to command a second company of 80 to 90 men raised at Big Bar on the Trinity River.¹⁵⁶

These companies, known as the Kibbe Guards, set out to clear the entire region of indigenous peoples. Kibbe claimed that his forces were too small to take the Indians head on, and so resorted to attacking villages late at night to achieve surprise. Kibbe's methods were effective. The militias took to the field at the height of the rainy season, and their first campaign ended with the capture of at least 350 Indians, mostly in the Redwood Creek area to the west of Hoopa Valley. The prisoners were sent to Humboldt Bay and imprisoned there until they were shipped south by steamer south to Mendocino, and then to Round Valley Reservation after the Indian Office agreed to house the prisoners there. Over one hundred Indians were killed in this initial campaign, and the Kibbe Guards continued operations into the spring of 1859 with engagements on Redwood Creek, the Van Duzen and Eel rivers, as well as, within the Trinity Basin.¹⁵⁷

Peace might have been achieved without such bloodshed but the native peoples could not stop whites from committing acts of violence. The militias were made up of

¹⁵⁶*Humboldt Times*, 9/24/1858; Bledsoe, Indian Wars of the Northwest, 251. There is some disagreement among sources as to the number of volunteers enlisted under Kibbe. The information in this section is a general description of events. The California Indian Wars were extensive and the correspondence between the governor's office, Indian agents, local officials, militia officers, federal Army officers and officials, and concerned citizens can be found in the Indian War Papers, California State Archives, Sacramento.

¹⁵⁷Bledsoe, Indian Wars of the Northwest, 255; For a brief description of the violence against the Trinity River Wintu, the Chilula and Whilkut, see Edward D. Castillo, "The Impact of Euro-American Exploration and Settlement," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 99-126; William J. Wallace, "Hupa, Chilula and Whilkut, in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 177-179, and Frank R. LaPena, "Wintu," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 324-325.

individuals who were mostly miners and packers with an interest in the removal of Indians. They did not want a peace that left Indians in the region. Rather, most whites were determined to capture and remove Indians to reservations far from the areas coveted by whites. With local sentiment mostly in favor of this position, local militias became little more than Indian hunting parties. There were few voices of protest against them. By 1859, the Redwood Creek area west and southwest of Hoopa Valley was almost completely cleared of Indians. White settlers quickly overran the region expanding livestock operations that had helped provide spark for conflict in the first place. But the optimism of new settlement was premature because the Indians that were sent to Round Valley Reserve and the Klamath Reserve escaped and returned to their homes where they again clashed with whites.¹⁵⁸

On the night of February 26th, 1860, an incident occurred that shocked many Americans sympathetic to the plight of American Indians generally, and sympathetic whites in northern California in particular. Early in the morning before the sun rose, a group of local men, probably merchants, traders, packers, and possibly the editor of a local newspaper, from the town of Eureka, and other men from smaller coastal communities, armed themselves with clubs, axes, knives, pistols and rifles and executed a plan that had obviously been well-thought out. On that cold February morning, hundreds of Wiyot Indians who lived on islands in Humboldt Bay (having been displaced from the coastal shoreline by white settlement) had celebrated a religious event with dancing,

¹⁵⁸Much of the violence in the Redwood Creek area was a result of introduced livestock destroying resources upon which the Whilkut and Chilula relied upon for sustenance. Owen Coy, The Humboldt Bay Region, 146-147; Nelson, Our Home Forever, 69-70, 80. Those individuals sent to the Mendocino Reservation soon escaped and returned home and continued fighting.

feasting on seafood and drinking liquor. The exhausted celebrants had finished their festivities and were sleeping when the armed whites landed on the island (called Indian Island at that time, and Gunther Island today), and set about killing the sleeping Indians by bashing in their skulls, cutting throats, and shooting when necessary. Simultaneous attacks took place at other Wiyot villages farther from Eureka and when the massacre ended, hundreds of Indian men, women and children lay dead. Although reports disagree on the number of Indians killed, the estimated number on Indian Island ranged from 188 to 350. As for other village sites, reports vary and are not reliable. All reports agreed that there was only one Wiyot survivor on Indian Island, a child that later came to be adopted by a local white family. He took the white name Jerry James, and was the son of the prominent Wiyot headman, Captain Jim. Nobody was punished for the murder of hundreds of innocent people, but the massacre drew the attention of sympathetic whites throughout the United States and led to a concerted effort to stop the violence in northern California.

Although the Indian Island Massacre sent shock waves throughout the Indian communities of northwestern California, the pattern of Indian resistance to white encroachment continued into the early 1860s making northern California the scene of some of the bloodiest and most morally disturbing events in the history of Indian-white relations. The Indians inland that survived being exiled to reservations outside of the region continually managed to escape and return to their homes where they rearmed and continued fighting. In 1862 the federal government, although now embroiled in the American Civil War, increased its military presence in the region and tried to end hostilities by capturing all Indians resisting white presence and sending them to

reservations away from the mines and far south to such places as Catalina and the Channel Islands where they could not escape. Colonel Francis G. Lippitt, the newly appointed commander of the District of the Humboldt, insisted that his men should not treat the native peoples as the volunteer militias had done (or the civilians of the towns of Eureka, Union and elsewhere had done). He cautioned his men that they should not conduct “Indian hunts,” but instead, that they should “bring them [Indians] in and place them permanently on some reservation where they can be protected against all outrages by hostile whites.”¹⁵⁹ Lippitt, while perhaps well-intentioned, was unable to succeed. While he managed to capture and send hundreds of Indian prisoners to reservations, they continually escaped and returned to their homes. Indians and whites continued attacking one another and the bloodshed continued.¹⁶⁰

The pattern of Indian-white warfare in northwestern California had an important demographic component that worked in favor of the newcomers. The continual attack on Indian villages led to a drastic decline in the numbers of Indian people of reproductive capability.¹⁶¹ The culling of young men through violence, the devastation of resources and village sites, the removal of Indians to distant reservations, and the indenturing of young men and women meant that it was increasingly difficult for them to reproduce quickly enough to recover from the population lost to warfare, disease, and dislocation.

¹⁵⁹Quoted in Nelson, Our Home Forever, 80.

¹⁶⁰Nelson, Our Home Forever, 80.

¹⁶¹For a detailed analysis of the demographic changes experienced by California Indians during the Gold Rush, see Albert L. Hurtado. Indian Survival on the California Frontier (New Haven: Yale University Press, 1988).

The longer that conflict dragged on, the fewer Indians there would be to resist. Whites, on the other hand, continued to stream into the area at the same time that the Indian population was in decline. The balance of whites to Indians tipped more in favor of whites as time passed.

Violence and warfare among Indians and whites in northern California was in part caused by the differing approaches to resource use. The only options open to the native peoples hoping to remain in their homelands were to fight or accommodate. Those people who chose (or were more often forced) to fight, such as the Chimariko and Trinity River Wintu were decimated. They essentially vanished or were absorbed into neighboring tribes or ended up living on the margins of the white society that came to dominate the region. The Hupa, on the other hand, chose a mixture of diplomacy, secrecy, resistance and accommodation, and managed to cling to their homes along the Trinity River. Their persistence paid off, but only after warfare reached the valley in 1863.

In 1863, S.G. Whipple, the former agent at the Klamath Reserve, replaced Lippitt as commander of the Humboldt military district. Whipple had extensive experience among the Indians of the northwestern California, and he believed he could subjugate the Indians. Whipple thought that ending the continuing Indian-white warfare rested upon subduing the Hupas whom he suspected of committing depredations far from their villages casting suspicion on neighboring Indian peoples while maintaining a “friendly stance” towards whites living among them. Whipple also worried that if the Hupas and neighboring tribes were not soon subdued, they might join forces and an extensive Indian

uprising might occur.¹⁶² Whipple, as the former agent on the Klamath Reserve, believed that the Yurok below the mouth of the Trinity River would prefer peace, but he feared the Karok Indians on the Klamath above the Trinity might join the Hupas in a general war. Whipple did not offer evidence that the Hupa were attacking whites or that a general uprising was about to erupt, but in early January 1864, Whipple moved into Hoopa Valley and established his headquarters at Camp Gaston where he could operate against hostiles and watch the Hupa. At just about the same time, a skirmish along a pack trail between Eureka and the Klamath mines led to the death of several packers and hostile Indian attackers. Among the dead Indians lay a slain Hupa warrior of renown among his people and well-known to the whites of Hoopa Valley. The gig was up and the cover was blown. Hupas were now definitely linked to the ongoing conflict. In response to Whipple's movement of additional troops to Hoopa Valley and the revelation that Hupas actually were guilty of engaging whites in war, many Hupas fled the valley and into the surrounding mountains where they could protect their families and continue fighting. Whipple responded by secretly recruiting friendly Hupas as scouts and sent them out to convince those who fled the valley to return.¹⁶³

A Hupa man named Charley Hostler, who was opposed to those Hupas who fled to the mountains for reasons that are not clear in the record, led about dozen Hupa scouts into the mountains to search for the hostile Hupas with the hope of contacting them and

162Letter. S.G Whipple to R.C. Drum, January 12, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 723-725.

163Letter. S.G Whipple to Lieut. Middleton, January 30, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 727.

convincing them to return to the valley so that the military would not force the friendly Hupas to Round Valley along with any hostile Hupas captured in a campaign that was sure to come if they remained in hiding.¹⁶⁴ After two months, the scouts made contact with the Hupas hiding in the mountains and Whipple's assistant, J.T. Carey, began negotiation with them. Whipple told Carey, "If they deliver themselves up they will be dealt with leniently by the Government," and assured them that if they cooperated with Government most would receive a pardon. Whipple also promised to suspended military actions until the results of the negotiation were known.¹⁶⁵ The negotiation ended with the return of twenty young men to the valley, but several other groups remained in the mountains which angered Whipple. Remarkably, he still held faith that a negotiation could prevent further violence and end the struggle.¹⁶⁶

Whipple soon made contact with the leaders of two bands still hesitant to come in. One band was lead by a Hupa named Big Jim and second was led by Seranalthin John (also called Captain John, who was the same John taken by David Snyder to San Francisco in 1858 - obviously, San Francisco was not as impressive to him as the local press had claimed or hoped). Through negotiation, Whipple managed to get them to return to the valley. The Indians Big Jim and Seranalthin John returned stolen weapons and other articles taken on raids in the upper Trinity and Klamath River basins, and

164Letter. S.G Whipple to R.C. Drum, February 18, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 758-759.

165Letter. S.G Whipple to Carey, April 6, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 807.

166Letter. S.G Whipple to James Ulio, April 21, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 825-825.

Whipple agreed to ration the two bands because they had no food. Whipple wrote, "...it is absolutely necessary that rations be issued them, for the present time at least."¹⁶⁷

Whipple also pointed out that many Hupa men had been wage laborers on local farms and ranches, or had worked as packers. Since most whites abandoned the region in response to Indian-white warfare, the government must ration the Indians who could not gain fish from the dirty Trinity River because of up-river mining, and now could not earn cash except through criminal acts. Rations were insurance that they would not again commit depredations and the violence could be stopped.¹⁶⁸

During the Summer of 1864, more Hupas came in from the mountains, but an unknown number, perhaps 100 warriors, still remained hidden. Whipple's patience ran thin and he wanted all Hupas remaining in the mountains to return at once. Whipple issued orders to Captain A. Miller to move immediately with force into the mountains where he was to attack all the holdouts - men, women and children, until they were killed or surrendered. "Kill the last one until they find it prudent to obey."¹⁶⁹

This ultimatum left the holdout Hupas with little choice, they could fight the whites or surrender to them. Some Hupas in the valley and living in peace panicked and choose to leave the valley again, but instead of trying to wait out the war, they joined their neighbors on Redwood Creek and elsewhere and again took up arms. Other Hupas

167Letter. S.G Whipple to James Ulio, April 28, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 830-831.

168Letter. S.G Whipple to James Ulio, April 28, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2: 830-831.

169Letter. Hanna to Miller, June 1, 1864, in Official Records of the War of the Rebellion, Vol 50, Part 2:

stayed in the valley and decided to throw in with the Americans and aid the Army against their hostile brethren. This situation caused hostilities to break out amongst the Hupa remaining in the valley and inter-village warfare erupted for reasons that Whipple did not completely comprehend and we can only guess. While white outsiders viewed the Hupa as a single “tribe”, in reality, the Hupas saw themselves differently. Briefly, an explanation of power and obligation at this point in the narrative can help the reader understand the complex nature of Hupa and northwest coast Indian societies, and perhaps crack a window into what helped cause the Hupas to war among themselves, and how white resource use, while obviously destructive, actually was much more damaging in ways whites could not see and Whipple surely did not understand.



Hupa Indian packers unloading supplies in Hoopa Valley ca. October 1906. Packing mules required great skill. After peace came to the region in 1864, Indians often worked as packers running supplies from the coast to the inland. Photograph possibly Kroeber, Goddard or Ericsson. Authors' personal collection.



Hupa Indian packers coming into Hoopa Valley ca. October, 1906. Hoopa did not see its first gas-powered freight truck until well into the second decade of the twentieth century. Packing required special skill and a good grasp of how to distribute weight evenly on an animal so as to ensure that the mule would not give-out before it was time to change animals. Photograph possibly Kroeber, Goddard, or Ericsson. Authors' personal collection.

Imagine the situation as a series of concentric circles of loyalty and obligation. A Hupa man was in a position of authority within his nuclear and extended family, but a shaman or doctor, who could be a woman, had power of a different source and she could be stronger within the family unit because of her natural and supernatural knowledge and possession of formulae. But for the moment, sticking with the man and imagining him not to have supernatural knowledge, he had political, legal, and social obligations to his nuclear and extended family, but also clan and moiety obligations which could obligate him to people living in other villages and in some cases, other tribes, thus we see a larger circle of ties which could control what decisions he made and how he acted or was obligated to act. Also, depending on which family the man was a member of, say he was Seranalthin John's nephew, he had more legal and social power within his village and

among other villages because of his blood line. In addition, Seranalthin John was a rich man. The fact that Seranalthin was rich increased his nephew's standing in Hupa society, and in Indian northwestern California generally.

Unlike other northwestern cultures, the Hupa, Yurok and Karok, the most southern of the Northwestern Culture Type Indian societies, did not practice potlatch - thus, certain individuals and families tended to become wealthier over time, and a type of aristocracy was grown that had reached impressive proportions by the 1850s. For the purposes of this study, let's say our imagined Hupa man was wealthy. What was wealth to the Hupa Indians and their neighbors? Three principle types of wealth were sought by the Hupas. The most common and democratic was dentalium shell money. Dentalium shells were only found on the Puget Sound in what is today western Washington state, and were traded widely. The value was measured by lines tattooed on the forearm of a man - the longer the string of dentalium shells, the more valuable. A second, and more prestigious and important form of wealth was the ownership of places of resources extraction - in this case prime fishing eddies and holes on rivers and streams, acorn gathering sites, and sites for gathering berries for food and grasses and shoots for basket-making. These sites could not be trespassed upon or used without permission from the owners, or compensation of some form. The sites were also religiously connected to the earth disk and religious prescription had to be observed whenever a person used them. It is significant that over time many women came to own these type of sites, and through family relationships, aristocratic families owned sites in their own territory and also miles away in the territories of their neighbors. This was a larger circle of obligation, but was an obligation that fell on others wishing to use sites owned by someone else.

Finally, the most prestigious form of wealth and important obligation was the ownership of Dance Regalia. Dance regalia was so valuable it was only loaned during a dances and was stored away the rest of the year in cedar boxes and passed down as inheritance. A complete regalia list is not needed here, but certain pieces should be mentioned. White deer skins were sacred and a central part of the ten day white deerskin dance. Albinism is rare among humans, and is certainly rare among other animals. Mature albino deer are even rarer considering the fact that albinos usually die young. So when, during the White Deerskin Dance, a man lent the dancers 10 white deer skins, he was certainly wealthy and possessed great power and prestige. For the White Deerskin, Boat, Jumping and Brush Dances, a wealthy man might lend redwood canoes (a more common wealth item and not sacred), headbands of red-headed woodpecker scalps (white deerskins were also adorned with a red-headed woodpecker scalp for a lounge), or sacred black or red obsidian blades of ceremonial proportions (often 15-18 inches long, 3 wide and an inch thick-shaped and sharpened volcanic glass of extreme value). Finally, there were beads, dentalium shell necklaces, ceremonial weapons, and spectacularly decorated tube baskets worn by dancers during the Jump Dance. It was a man, or sometimes a woman, who owned the dance regalia that had extreme wealth and power - but also commensurate tribal, extra-tribal and religious obligations among all practitioners and participants of World Renewal.

Owning resource sites and dance regalia made the wealthy person a respected individual. They became arbitrators, settled disputes between individuals, married couples, and negotiated with other prominent men and women over blood feuds, murders, accidental death, resource use sites, and other conflicts. They were not, however,

“chiefs” in the sense that whites understood the term from their own culturally biased standpoint. Whites believed these powerful people could tell their neighbors what to do. They were commanders of the people of their villages, and could “make” others do as they were told. This was a misconception - instead, they were wealthy, respected, aged (usually) wise in council and good speakers who were looked to as arbitrators. It was this basic misunderstanding by white observers, and a misunderstanding of what motivated obligation, loyalty and therefore, action, that helped fuel the fighting, and finally led to fighting amongst the Hupas themselves. Obligation caused some to support was while breaking down traditional cohesion and group solidarity.

Nevertheless, once Whipple issued his ultimatum of surrender or death, several groups of Hupas left the valley and allied with their neighbors the Whilkut and Chilula to fight against the whites. After several months of hostilities, Whipple’s forces had captured over 500 Indians and held them at Fort Humboldt near Eureka. What to do with the Indians was an important question. Because those Indians who had been sent to Mendocino and Round Valley during the previous years managed to escape and return to their homes, there was some question as to the advisability of how to deal with the Indian prisoner held at Fort Humboldt.

Austin Wiley, Superintendent of Indian Affairs for California, advocated sending the prisoners to Catalina Island or San Pedro Bay in Southern California to prevent their returning to the northwest coast. Wiley wrote to William Dole, the Commissioner of Indian Affairs, suggesting such an approach to the Indian problem, but Dole rejected his

plan.¹⁷⁰ Since Dole refused to support the plan, Wiley suggested that if the Indians could not be removed far to the south, the only workable alternative was to establish a reservation at Hoopa Valley.¹⁷¹

In Hoopa Valley, the Indians informed the commander at Camp Gaston that they would remain at peace if the government would reserve Hoopa Valley for them. The commander agreed, but he did not have the authority to create a reserve. On August 8, 1864, against the protest of local whites who insisted that all Indians be killed or removed from northwest California, Austin Wiley traveled to Hoopa Valley to negotiate an acceptable agreement with the Hupas. Wiley negotiated a Treaty of Peace and Friendship with the Hupas, and also with South Fork Hupas, and other Indians living on Grouse and Redwood Creeks outside of the Trinity Basin. In the treaty, Wiley agreed to set aside the whole of Hoopa Valley and the surrounding hills as a reservation. Among the stipulations agreed to by the Hupa were a promise to cease hostilities, obey the agent in charge at Hoopa Valley, remain within the defined limits of the reservation, and to deliver up all firearms in their possession.¹⁷² The federal government purchased the improvements that whites had made in Hoopa Valley, including twelve farms, fields and equipment, a derelict saw and grist mill, and ordered all whites out of the valley except

170Letter, Austin Wiley to Commissioner of Indian Affairs William Dole. June 4, 1864. National Archives. Office of Indian Affairs. Letters Received. Entry M234: Roll 39.

171Letter, Austin Wiley to Commissioner of Indian Affairs William Dole. August 2, 1864. National Archives. Office of Indian Affairs. Letters Received. Entry M234: Roll 39.

172There were three treaties negotiated with the Hupa. None of the treaties were ratified, but the 1864 document was recognized as valid and the terms of the agreement were followed. Vine Deloria, Jr., and Raymond J. DeMallie, Documents of American Indian Diplomacy: Treaties, Agreements and Conventions, 1775-1979 Vol. One (Norman: University of Oklahoma Press, 1999), 207-208, 231-232.

soldiers, BIA employees and licensed traders. The military post remained and would be active in the valley until 1892. The Indian agent sent to the valley decided that the Hupas' best chance at living at peace was to make them become farmers. Although Hupas had labored on farms within the valley for over ten years, had cut wood and milled wheat for market to the mines, worked as packers and sold fish to earn cash, teaching them to rely on farming as the most important part of their subsistence would be a challenge that was never to be completely realized for reasons beyond the control of Indian Agents, the BIA, or the Hupas themselves.

Nevertheless, the newly arrived agent set about teaching the Hupas to become farmers. The agent set up an experimental farm near his quarters which were part of Camp Gaston. He thought that the Hupas could easily be educated as farmers and re-oriented away from a reliance upon Salmon fishing and the Trinity River. As farmers, the Hupas would become self-sufficient, the possibility of future conflicts with their non-Indian neighbors would diminish, and with the help of the government, they could become positive contributors to society.¹⁷³

This optimism, as far a farming goes, did not materialize, but after 1864, major Indian-white violence in the Trinity River watershed essentially ended and the Hupas and others on the reservation began a new life. The establishment of the Hoopa Valley Reservation on the Trinity River assured the presence of the Hupa along the Trinity River. But the setting-aside of the reservation was too late for their upstream neighbors, the Chimariko who were decimated by the time the reservation was formed, or the Trinity

173“Report to the Secretary of the Interior,” Executive Documents: The House of Representatives, Second

River Wintu who were either pushed out of the Trinity River watershed, or ended up living on the margins of the white communities that came to dominate the riparian areas once inhabited by native peoples.¹⁷⁴ The only sizable Indian presence along the Trinity River after 1864 was in Hoopa Valley.¹⁷⁵

The end of Indian-white warfare and the creation of the Hoopa Valley Reservation was a turning point in the history of the Trinity River watershed. It had taken just over fifteen years from the discovery of gold on the upper Trinity River until the native peoples in the region had been eliminated as a significant hindrance to the advancement of white settlement and the contest over resource use. After 1864, non-Indian land use practices came to dominate the area. Whites managed to succeed in their goal of eliminating Indians from a majority of the landscape, and they continued to transform the land and exploit its resources for a market economy. The native peoples, particularly the Hupa, the Karok, and their down-river Yurok, did not disappear. Rather, the reservation allowed them to retain their pre-contact territory and their cultural identity and to take anadromous fish from the Trinity River. Yet the reservation was the tool that the federal government would attempt to use to try to decouple the Hupa from the Trinity River and their surrounding landscape, and to reorient their land use practices in a way that mirrored those of the larger white society.

Session, Fifty-Fourth Congress, 1895-1896 (Washington, D.C: Government Printing Office, 1896), 125.

¹⁷⁴The South Fork Hupa were absorbed into the Hupa proper after the creation of the reservation in 1864. See William J. Wallace, "Hupa, Chilula, and Whilkut," in Handbook of North American Indians: Volume 8, California, Robert F. Heizer, ed., Washington, D.C.: Smithsonian Institution, 1987., 177.

¹⁷⁵A flood destroyed the Klamath Reserve on the lower Klamath River in 1861-1862. Because of the destruction of building and fields, the government physically abandoned the Reservation and the Indian

During the period of Indian-white warfare in the Trinity River Basin, non-Indians continued to transform the region in numerous ways. This transformation was by no means immediate, nor was it always consciously directed with predictable results. The Indian people who lived along rivers and streams were replaced or absorbed by non-Indians who became riparian peoples themselves, and who, like the natives before them, gained their livelihoods from the river and nearby resources. The small, intimate world of pre-contact northwestern California was shattered. The Indians fought for control of their resources, but were far from successful. Euro-Americans understood that if they were to control the resources they desired, they would have to exterminate the Native Americans, or at least remove them to reservations. They chose a combination of the two. Those Indians removed to the Hoopa Valley Reservation would be shown how to use local resources in ways compatible with, and acceptable to, the larger white society.

While violence between Indians and newcomers continued sporadically, mining and logging advanced in the region. Logging is among the worst threats to a river's health because improper or careless logging practices can overwhelm a river with sediment. Since rivers are the lowest points in a regional topography, they form because of runoff, and collect sediment and debris and deposit it in a terminal basin such as a lake or the ocean. Over thousands of years, rivers adjust to the storm regimes (high and low precipitation) and sediment loads (the amount of sediment and debris washing into the river) characteristic of their watersheds. Wildlife, particularly anadromous fishes, evolve and adapt to the specific characteristics of a watershed (its precipitation patterns, topography, geology, temperatures, sediment load and chemistry). Here they are born

inhabitants returned to their former villages along the river.

and spend several years in-stream while growing. It is also where they return to spawn and die. The impact of logging on a river is dependent in part upon the soil composition, topography, climate and precipitation of the watershed, coupled with the method of logging. If conditions are right, removing trees from the landscape can cause a serious erosion problem and threaten the health of a watershed and the wildlife living within it.

The Trinity River Basin possesses characteristics that exacerbate the destructiveness of logging. The majority of the region's soils are granitic and highly unstable. This is particularly true of the Grass Valley area on the upper Trinity River, however, the topography of the entire Basin is rugged, and steep. The climate of northwestern California is the wettest in all of the State, and the majority of precipitation arrives in the form of rain. Loggers cut at will, usually taking the best trees, damaging others, and leaving behind piles of slash and brush, damaged stream banks, and a landscape vulnerable to erosion. Deforesting steep mountains overlain by unstable granitic soils and exposing them to the heavy rains of northwestern California made erosion a serious issue on the Trinity River.¹⁷⁶ Just as mining debris wreaked havoc within the Trinity Basin, the silt, sand and debris from logging operations washed into the river and its tributaries, altered water chemistry, temperature, and clarity, and further reduced anadromous fish habitat and salmonid populations.

The scant documentation addressing nineteenth-century logging and milling along

¹⁷⁶There are numerous studies of the erosion and sedimentation problems caused by logging in the Trinity River Basin. Among the earliest are: Grass Valley Creek Siltation, California Department of Fish and Game. Region 1, Redding, California, 1963; M. Coats, The Effects of Erosion and Sedimentation on the Fishery of the Grass Valley Creek and the Trinity River, Trinity County, California. California Department of Fish and Game. Region 1., Redding, California, 1967.

the Trinity River does not give precise data on the location and number of sawmills in operation, the length of time they were in operation, nor the number of trees cut. Therefore, one can only guess at the environmental impact of these logging operations. What evidence we do have suggests that these short-lived operations were environmentally destructive. For example, Franklin Buck, who previously operated a sawmill on the North Fork of the Trinity River, commented on the depletion of trees for fuel near Weaverville, the largest community serving the Trinity River mines and the county seat. “[Wood] is getting quite scarce already near town. We have to go two miles to find it and it is getting to be quite an object. It brings eight dollars a cord and is growing scarcer and higher every year.”¹⁷⁷ Bucks observation suggests the logging method referred was clearly having a negative impact on the area surrounding Weaverville.

The amount of precipitation falling on Weaverville every year is high, and so one can speculate that flooding and erosion, especially along Garden Gedde, the creek running through Weaverville, was exacerbated by the deforestation around the town. Buck complained that debris filled the creek and caused problems for town residents, and pointed out that mining debris filled the stream. The deforestation caused by logging around Weaverville certainly contributed to the serious erosion problem along the stream.¹⁷⁸ Bucks’ observations suggest that loggers took every piece of salable wood, whether for sawing or for fuel. Lumberjacks felled trees without regard to the

¹⁷⁷Franklin A. Buck A Yankee Trader in the Gold Rush, 181.

¹⁷⁸Franklin A. Buck A Yankee Trader in the Gold Rush, 191.

environmental consequences, and in the Trinity River Basin where precipitation is high and soils are granitic and unstable, early logging practices surely negatively impacted area streams and fisheries.

Logging on an industrial scale also began on the coast of northwest California soon after the first Euroamericans began to settle in the Klamath-Trinity watershed. Logging companies developed transportation networks pushing inland along coastal rivers and streams. Lumberjacks first worked the forests along the coast, cutting the timber easily accessed by the technology available to them. They then moved inland along rivers feeding into the Pacific Ocean. The method, scale and intensity of logging evolved rapidly as water-powered sawmills employing whipsaws, and oxen dragging saw logs overland, gave way to rotary-blade steam-driven sawmills, the employment of steam donkeys for yarding, and the adoption of logging railroads. Logging companies exploited a variety of tree species for different uses, and the intensity of logging increased as the regional logging industry turned away from supplying local markets with building materials to exporting wood and wood-products to far-off destinations such as San Francisco, Hawaii, Australia and the Philippines.¹⁷⁹

During the early 1860s, when Indian-white warfare was rampant, logging and milling had emerged as a significant industry on the Humboldt Bay and operators there began exploiting the rivers and streams leading to the Pacific Ocean. While the logging operations along the coast had not yet moved into the Klamath River estuary in the early 1860s, it had penetrated inland into the “Redwood Belt” east of Eureka and was poised to

¹⁷⁹Thomas R. Cox, Mills and Markets: A History of the Pacific Coast Lumber Industry to 1900 (Seattle:

move into the Klamath where floating logs for milling, and the pollution of the river with sediment and debris would impact the Salmon runs into the Trinity River Basin. By 1860s, residents of the Humboldt Bay region could claim that their mills were among the leading producers of lumber in all of California.¹⁸⁰ The *Alta California* reported that in the Humboldt Bay region, “Lumbering is the main occupation and source of employment.”¹⁸¹

As lumbermen expanded their operations to meet increasing demand, there was a corresponding increase in the disturbance of land, streams and rivers as loggers cut and moved more and more trees to yarding areas and sawmills. The destructiveness of early logging can be understood by briefly outlining the methods employed to move logs from the forest to the mill. When the first mills began operating in the region, loggers cut trees near-at-hand and transported them relatively short distances to the mills. Loggers felled trees and skidded the logs to staging areas and mills using oxen, steam donkeys, and crude logging railroads that could be easily dismantled and moved as areas were logged-over. Moving trees by dragging them across the forest floor disturbed soils and plants, created unstable soil conditions and erosion problems, and filled streams with sediment, logging debris and slash.

University of Washington Press, 1974).

¹⁸⁰Coy, *The Humboldt Bay Region*, 118-120. By 1857, the Humboldt and Klamath County Assessors reported a that nine sawmills in the area had produced a combined total of 25,000,000 board feet of lumber for that year. See: *Humboldt County Assessor’s Report, 1857* (n.p.); *Klamath County Assessor’s Report, 1857* (n.p.). Another source reports that the Papoose Sawmill was the first erected on Humboldt Bay. See: Christine Savage, *Six Rivers National Forest: A Contextual Cultural Resources Chronology of Events on or Near Forest Lands* (Six Rivers National Forest, January, 1991), 8.

¹⁸¹*Alta California* 6-6-1861, 2:2.

Loggers also used rivers to move their logs wherever they could, but northwestern California did not have abundant navigable waterways than ran year-round. Loggers felled trees, dragged them to a nearby river and dumped them directly in the river bed to await high water. For example, in the early 1860s, at Freshwater Slough feeding into Humboldt Bay, lumbermen floated logs downstream to tidewater on freshets caused by early-winter rains. Once at tidewater, lumberjacks easily moved the timber to nearby mills for sawing. Waiting for high water or floods to move timber, however, was slow and time consuming. To overcome the obvious problems with waiting for nature to act, loggers became creative. Rather than wait for a flood to move timber in rivers not naturally navigable, lumber companies struck upon the idea of “booming” their logs. Booming, simply put, was creating a man-made freshet. Loggers dumped saw logs in a river bed, built a temporary dam upstream from the waiting logs, and when enough water backed-up behind the dam to float the logs downstream, the dam was broken down using explosives. The freshet caused by the collapse of the dam moved logs downstream to tidewater. These methods of moving saw logs choked rivers with debris and sediment, and destroyed anadromous fish habitat and spawning beds.¹⁸²

Transporting logs by water was cheap, quick and reliable, and where it was possible to move logs by river year-round, lumbermen attempted to do so. The Eel River, navigable for the much of the year on its lower stretches, was a favored route for early lumber companies. However, logging interests soon discovered they were not the only

¹⁸²Using seasonal floods and human-caused freshets to move logs down rivers usually too shallow to be used on a daily basis was a common practice in the western lumber industry, and large numbers of board-feet could be moved this way. In late 1860, logs containing an estimated one million feet of lumber were floated down Freshwater Slough to Humboldt Bay during heavy run-off. See: Coy, [The Humboldt Bay](#)

commercial enterprise interested in utilizing the rivers of northern California. Several times each year, salmon and steelhead ran the coastal rivers of northern California. Cannery operations made their living harvesting salmon, and by the 1860s they were harvesting fish from most major rivers in the region. As a result, conflicts between fishing and lumber interests eventually erupted.¹⁸³ Nevertheless, the majority of coastal rivers in northern California, excepting the lower forty miles of the Klamath River, were simply unsuitable for floating logs and so using water to move logs and sawed lumber from interior forests to coastal sawmills and ports was, for the most part, unrealistic.

While water was used where possible, logging railroads were commonly used to move felled trees to staging areas on the Humboldt Bay or directly to lumber mills. Loggers preferred to build railroads on relatively level ground because of cost and the useful life of the railroad.¹⁸⁴ Once loggers removed the valuable trees from a particular cutting area, they often moved their rail lines, thus investment in expensive bridges, trestles and tunnels was not realistic unless the railroad could be used for other purposes or if a large stand of valuable trees awaited the lumberjack's saw.¹⁸⁵ The reach of a logging railroad could be extended by using oxen and other methods of bringing logs to a yarding area near the road for shipment to the mills, but as distances to tree stands

Region, 216, fn.5.

183The major battles between fishing and logging interests erupted in the early twentieth century along the lower Klamath River between companies using the river to move logs, and sport fishermen competing for space on the river. Once logging operations moved far into the interior after World War II, the issue of declining salmon and steelhead runs caused by logging and milling operations on the upper reaches of the Trinity and Klamath rivers prompted protests from fishing interests and resulted in state regulation (see below).

184Coy, The Humboldt Bay Region, 286-292.

increased, this became more and more expensive. Nevertheless, logging railroads were used throughout coastal northern California.¹⁸⁶ Thus, by the 1860s Humboldt Bay was a world producer of redwood and other types of lumber for global markets.

While logging on the coast expanded during the early 1860s, mining also continued during the period of Indian-white warfare. By the early in the 1860s channel mining was beginning to wane in the Trinity Basin as the easily accessible placer gravels played out. While the extent of early mining activity was widespread, impressive, and as the warfare between newcomers and Indians suggests, socially and environmentally disruptive, miners began importing industrial mining techniques developed outside of the Basin that enabled them to rework the previously mined gravels of the Trinity River and to mine areas untouched by earlier activity. Miners imported new methods of mining, particularly hydraulic mining (discussed in greater detail in the following chapter) during the early 1860s at the same time that the Hupas and other native peoples were trying to resist white incursion. They could not prevent industrial mining from reaching into the Trinity River Basin, and the impact of industrial mining was substantial.

The confinement of Indians to a reservation, the beginning of industrial logging on the coast, and the advancement of industrial hydraulic mining in the Basin resulted in

185Hyman and Roberts, "History of the Lumber Industry in Humboldt County", 8, 12-13, 15.

186See, Lynwood Carranco and John T. Labb, Logging in the Redwoods (Caldwell, Idaho: Caxton Printers, 1975); and Lynwood Carranco and Henry L. Sorensen, Steam in the Redwoods (Caldwell, Idaho: Caxton Printers, 1988). Although these texts are for popular consumption, they are valuable for their photographic documentation of the variety of equipment and methods used in the early logging practices of northern California.

a wholly new world for the Indians of the region. The new world, while recognizable, was the result of tensions at the local state and federal levels, and between cultures and land use practices. Nature itself played a role by providing an abundance of anadromous fishes, free gold, trees, and water. After 1864, these tensions played out in important ways. By addressing change among the Hupas we can understand these tensions and changes in the Trinity River Basin.

Chapter 4

Industrial Mining and the Decline of the Fishery: 1864-1898

The introduction of industrial hydraulic mining to the Trinity River watershed beginning in the 1860s had a tremendous environmental impact on the river and the region in general. Industrial mining is defined here as the application of large-scale, highly-developed gold-recovery techniques to massive, low-grade disseminated gold-bearing placer gravels. The most important and destructive industrial mining technique applied in the Trinity River Basin was hydraulic mining.¹⁸⁷ It was at Nevada City in the Sierra Nevada foothills in 1852 where three miners hit upon the idea of directing water under pressure onto auriferous (gold-bearing) gravel. Edward E. Matteson, Antoine Chabot and Eli Miller are generally acknowledged as combining their skills and imaginations to invent one of the most efficient, and environmentally destructive, methods of gold mining ever known.¹⁸⁸ The three miners developed hydraulic mining at their Buckeye Hill claim in the Sierra Nevada foothills. They experimented with different configurations until successfully hitting upon an acceptable design. The apparatus consisted of a wooden intake located at their water ditch to regulate pressure, one hundred feet of canvas hose, and a tin nozzle tapered to a 1 ½ inch opening. The initial results were encouraging. Blasting away at the gravel claim, the partners began

¹⁸⁷Dredging in the Central Valley is not addressed in this report because dredges were not a factor in the debris controversy. Dredges are mentioned when discussing the Trinity River because they contributed to the degradation of spawning habitat.

¹⁸⁸Philip Ross May, Origins of Hydraulic Mining in California, 40-46.

washing considerably more gravel than their fellow miners on nearby claims.¹⁸⁹ Their invention attracted considerable attention, and soon miners throughout the southern mines (Mother Lode Country near the first strikes - not the northern mines on the Klamath and Trinity Rivers) were improving upon their original design. With the new invention, the consumption of water and the amount of debris washing from mines into area streams skyrocketed. The *Daily Alta California* described the new hydraulic method:

A new method of mining the hill diggings has lately been introduced in this place as novel as it is efficient. The usual cut is made from the outer edge at the base into the centre of the hill. From a reservoir on its summit (made from a barrel, to preserve a steady pressure), the water is conducted by a leading hose of strong canvas, terminating with a pipe, similar to that of a fire engine. The column of water thus produced ranges from twenty to one hundred feet according to the height of the hill [depth equals hydraulic pressure - thus, the greater the height of the "head" - the point where water enters the hose above a mine - the greater the pressure emitting from the tip of the hose]. . . [A]nd such is the immense power of the water as it escapes from the pipe, that no alluvial deposit can resist the force for an instant. The toughest clay dissolves like wax, thus disintegrating much fine gold, a greater part of which has hitherto been lost [by the previous, inefficient rocker, long-tom and gold pan]

¹⁸⁹Philip Ross May, Origins of Hydraulic Mining in California, 40-46.

Witness the operation of the new appliance: the hydraulic apparatus is brought into contact with the *debris* [emphasis in original] . . . , which melts like ice under a midsummer sun, and lo! in much less time than it requires to describe the operation, the huge mass is released from its diluvian home and comes tumbling down into the space below.¹⁹⁰

This article points to the potential environmental harm of hydraulic mining. The hydraulic method reduced the amount of labor needed to mine gravels, substantially increased the amount of gravel that could be washed in a single day, eliminated the danger of collapsing undercuts that killed so many miners, and like all industrialized methods of production, required fewer and fewer miners as the method improved. Hydraulic mining, as it improved, became a truly industrial mining technique whereby a single man, operating an improved hydraulic monitor (nozzle) with a head of 500 feet could move mountains. In a single day one man could move more gravel than a thousand men working a claim by hand. The hydraulic method changed everything about gold mining. Water was the paramount resource needed for hydraulic mining, and the amount of water consumed by mines near Nevada City, the site of the first hydraulic mines, jumped considerably with the new invention. Early in the 1850s, a typical hydraulic operation using 40 Miners' Inches of water was considered unprecedented. By mid-decade, some mines were buying as much as 76 inches a day, and by the close of the decade, many hydraulic mines consumed 300 Miners' Inches. Miners soon discovered

¹⁹⁰Daily Alta California, June 7, 1853., quoted in Philip Ross May, Origins of Hydraulic Mining in

that the debris from their mines became a problem for the mine itself. Although earlier mining had created a tremendous debris problem for those living downstream from placer claims, particularly anadromous fish and the Indian people who relied on them which led to wars described previously, the new mining created new problems, and these problems impacted not only the miners, but whites living well away from the mines. A new tension developed in gold country, but this tension emerged between whites which impacted the direction of mining, and had important legal ramifications for the mining industry, yet, for reasons we shall see, did not apply to the Trinity River Basin.



Industrial hydraulic mining scene in the Trinity River Basin ca. 1940. The location of this mine is unknown, but note the hydraulic “Giants” operated by a single individual with a counterweight. Note that the working face has been caved-down and the debris is being pushed towards the sluice. Eastman photo postcard. Ca. 1940s. Authors’ personal collection.

Debris produced by hydraulic mining accumulated so quickly in the rivers and streams near the mines themselves that the mine operators soon discovered that they needed to move the debris away from their operations or the mines would have nowhere

California, 46-47.

to send the detritus and would have to shut down. Thus, mine operators hit upon the idea of using their “Giants” (hydraulic monitors) to push gravel through sluices with wooden riffles lined with liquid mercury to recover the gold and at the same time move the debris into nearby ravines and stream beds with the rivers of water they had purchased from canal and ditch companies and moved through their operations. Once the debris was cleared from a mine, it was forgotten by the mine owners, but people living below the mines were aware of the debris perched high in the mountains awaiting rain and snow to wash down into the valleys. Once the debris began moving with winter rains, it caused tremendous damage to navigable rivers and flooded farms and towns causing crop losses and millions of dollars in damage. By the late 1860s, the stage was set for epic court struggles that would end hydraulic mining in the watersheds above the Central Valley by the 1880s, but the same battles fought to stop mining in the mother lode region would not apply to the Trinity and Klamath Rivers, and the result was disaster for the health of the Trinity and Klamath River fisheries. Before relating the necessary details of this struggle, we must briefly understand the impact of industrial mining in the Trinity Basin.¹⁹¹

By the early 1860s miners began applying the hydraulic mining method in the Trinity and Klamath River watersheds. Engineers continued improving upon hydraulic mining equipment until hydraulic mining became extremely efficient, industrialized, and destructive. Canvas hoses gave way to riveted metal penstock pipes, pointed nozzles gave way to double-jointed monitors, and “Giants,” and deflectors, or counterweights,

¹⁹¹Philip Ross May, Origins of Hydraulic Mining in California, 47-49.

allowed a single worker to easily steer a Giant in any direction directing millions of gallons of water under pressure at a gravel bank. Black powder, and eventually dynamite, helped miners loosen stubborn gravel. Finally, water was gathered in company-owned reservoirs and sent to the mines through hundreds of miles of ditches and flumes.¹⁹²

Foreign capital poured into California to fund the operations, and many hydraulic mines became international ventures.¹⁹³ Large mining companies acquired thousands of acres of Tertiary gravel, controlled water rights over large areas, and people who formerly labored for themselves as independent, hardscrabble placer miners became employees of international mining companies making steady, but usually low, daily wages, and working a 10 to 12 hour shift under a mine foreman who supervised mines that often operated 24 hours a day, seven days a week. Every year these industrial ventures dumped millions of cubic yards of debris into area streams and rivers and pushed the debris downstream using billions of gallons of water diverted from other rivers and streams and brought to the mine to be dirtied, dumped and forgotten.¹⁹⁴

To understand the impact that hydraulic mining had upon rivers and streams in the Trinity Basin, we need to explore in a general way the rise of opposition to hydraulic

¹⁹²Joseph J. Hagwood, Jr., The California Debris Commission: A History, 6-18; Robert L. Kelley, Gold vs. Grain, 41-42.

¹⁹³Robert L. Kelley, Gold vs. Grain, 45-46.

¹⁹⁴Philip Ross May, Origins of Hydraulic Mining in California, 49. For estimates on debris and a thorough geological and hydrological discussion, see: Grove Karl Gilbert, Hydraulic-Mining Debris in the Sierra Nevada, Professional Paper #105, United States Geological Survey (Washington, D.C.: United States Government Printing Office, 1917).

mining that began in California's Central Valley and how it played out.¹⁹⁵ Industrial hydraulic mining began in the Mother Lode region of the Sierra Nevada foothills where miners there, like those who later worked in the Trinity River, began mining free gold from the gravel bars of rivers and streams using shovels, picks, crowbars, gold pans, rockers, long toms and sluice boxes. These simple tools, combined with gravity, water and a strong back, a miner could make a good daily wage and the technology, although simple, led to the rapid exhaustion of the easily accessible gold in the Sierra and the Trinity-Klamath region because of the large number of miners using this technology.

As happened on the Trinity River, once the placer bars played out in the Sierra, miners turned their attention to the stream beds and began "river mining" accessing bedrock under river gravels by de-watering rivers using water wheels, wing dams, coffer dams, flumes and ditches. Obviously de-watering impacted stream bed morphology and aquatic life. The miners literally dried-out and turned over the beds of rivers in search of gold. As the "forty-niners" exhausted the most profitable gravels in the Sierra Nevada, they began chasing the actual source of placer gold in the surrounding hills.

¹⁹⁵The best work on the hydraulic mining debris controversy and the development of the hydraulic mining are: Robert J. Kelley, Gold vs. Grain: The Hydraulic Mining Controversy in California's Sacramento Valley: A Chapter in the Decline of the Concept of Laissez Faire, (Glendale, California: The Arthur H. Clark Company, 1959); Robert J. Kelley, Battling the Inland Sea: American Political Culture and the Sacramento Valley, 1850-1986 (Berkeley: University of California Press, 1989); Robert L. Kelley, "Forgotten Giant: The Hydraulic Gold Mining Industry in California," Pacific Historical Review, xxiii(November 1954):343-356; Robert L. Kelley "The Mining Debris Controversy in the Sacramento Valley," Pacific Historical Review, xxv(November 1956):331-346; Grove Karl Gilbert, Hydraulic-Mining Debris in the Sierra Nevada, Professional Paper #105, United States Geological Survey (Washington, D.C.: United States Government Printing Office, 1917); Philip Ross May, Origins of Hydraulic Mining in California, (Oakland: The Holmes Book Company, 1970). One can argue that all mining using water is hydraulic mining, however, hydraulic mining is usually defined by law as, "mining by the application of water under pressure, through a nozzle, against a natural bank." See: Philip Ross May, Origins of Hydraulic Mining in California, 3. This technique can be used to mine a variety of minerals, but in California it was most commonly used to mine placer gold.

Unexpectedly, they discovered ancient river beds that were fossil rivers from the Tertiary era that had deposited gravel containing placer gold.¹⁹⁶ To mine these deposits, miners developed hydraulic mining through experimentation. Miners approached these auriferous gravels just like any other placer deposit, but mining Tertiary gravels proved to be no easy task because Tertiary gravel deposits were hundreds of feet deep and gold was disseminated throughout. Like any river placer, the highest gold accumulations in these deposits were found at bedrock, but these deposits were highly compacted and difficult to break apart. Three miners near Nevada City improved their gold-saving appliances so as to profitably mine the millions of yards of low-paying auriferous gravel over lying bedrock and launched truly industrial scale hydraulic mining.¹⁹⁷

The availability of water took on new importance when miners began exploiting Tertiary gravels because most deposits were far from a water supply. Water, which was always important for mining placers, became a valuable commodity that could be sold to hydraulic mines far from a stream. Enterprising individuals formed ditch and canal companies, built reservoirs, and sent their water to Tertiary gravel deposits through ditches, canals and flumes where they charged mines for the precious commodity by the

¹⁹⁶The Tertiary gravel deposits were discovered quite by accident near Rich Ravine north of Nevada City in the early months of 1850. The rivers and streams flowing west from the Sierra Nevada into the Great Central Valley cut through and eroded the ancient stream beds deposited during the Tertiary Age, and so re-deposited the placer gold where it was first discovered and mined. See: Philip Ross May, Origins of Hydraulic Mining in California, 33; Joseph J. Hagwood, Jr., The California Debris Commission: A History, (Sacramento District, United States Army Corps of Engineers, 1981), 1-3; Robert J. Kelley, Gold vs. Grain, 22-26; Robert J. Kelley, Battling the Inland Sea, 16-30.

¹⁹⁷Philip Ross May, Origins of Hydraulic Mining in California, 26.

"Miner's Inch."¹⁹⁸

With a reliable supply of water at hand, tried recovery methods such as ground sluicing, and booming, were possible but these methods only worked on shallow deposits.¹⁹⁹ Miners found that continued washing and caving down caused working faces to grow higher and higher creating hazardous conditions for the miners working below. Also, as the depth of a mine increased, more over-burden gravel had to be moved to get to pay dirt, and profits diminished. Once miners realized that high-pressure streams of water could quickly and cheaply break down millions of tons of tightly compacted gravel, true hydraulic mining took off and spread throughout the mother lode and by the mid-1860s, the Trinity River Basin.²⁰⁰

The Achilles heel of Industrial hydraulic mining was the increasing volume of debris entering streams and rivers above agricultural communities and mercantile centers of the Central Valley. Estimates from the 1860s show that hydraulic mines were profitably working gravels containing 34 cents worth of gold per cubic yard. By the 1870s, the method and equipment had become so refined as to commonly allow profits to

¹⁹⁸There is much ambiguity in the exact volume of water contained in a "Miner's Inch." Prior to 1901, a Miner's Inch was generally defined as the rate at which a volume of water flowed through a vertical, one-inch square opening under 6 inches of head (the pressure created by water 6 inches deep). One Miner's Inch equaled approximately 17,000 U.S. gallons in 24 hours. However, there was considerable local variation in the volume of water in the "Miner's Inch," because of differences in head pressures. To end the confusion, in 1901 the California State Legislature created a uniform Miner's Inch for California, defining it as equivalent to 1 ½ cubic feet of water passing through any aperture or opening in one minute. See Phillip Ross May, Origins of Hydraulic Mining in California, 10-11, 34-36.

¹⁹⁹Phillip Ross May, Origins of Hydraulic Mining in California, 29-31.

²⁰⁰Phillip Ross May, Origins of Hydraulic Mining in California, 4, 26, 38-39. Even as hydraulic pressures increased, it was still necessary to use black powder, dynamite and other methods for breaking-up highly compacted gravels.

be made from gravel yielding only 4.75 cents worth of gold per cubic yard. The North Bloomfield Gravel Mining Company, one of the largest hydraulic mines ever operating in California, claimed a profit from working gravel containing only 2.9 cents worth of gold per cubic yard between 1870 and 1874.²⁰¹ From 1875 to 1876, the North Bloomfield was washing gravels estimated to contain one part of gold for every twelve million parts of gravel and using a hundred million gallons of water a day.²⁰² Efficiency was paramount and led to the accumulation and movement of mining debris that created problems downstream from the hydraulic mines and eventually led to litigation and regulation by the State of California and the federal government.

Hydraulic mines dumped so much debris into California streams and rivers that the industry eventually came under legal attack by farmers, merchants, steamship companies, the State of California and the federal government. Billions of cubic yards of rock, gravel, sand, mud and silt originating in the Sierra Nevada began flowing with spring flooding during the early 1860s downstream to the Sacramento Valley where it filled the lower reaches of the Feather River, much of the Sacramento River to the Delta, the American River, and eventually affected Suisun Bay.²⁰³ The debris overflowed farmlands and towns along the rivers of the upper Central Valley destroying thousands of

201The North Bloomfield Gravel Mining Company was located on San Juan Ridge in the Yuba River Basin. The North Bloomfield set the standard for hydraulic mining efficiency and was the largest, most industrialized of the California hydraulic mines. The North Bloomfield was owned by industrial capitalists based in San Francisco, and employed mining engineers and a large labor force to overcome the problems encountered while developing a new mining method. See: Robert L. Kelley, Battling the Inland Sea, 80-81; Robert L. Kelley, Gold vs. Grain, 47-54.

202Robert L. Kelley, Battling the Inland Sea, 20; Philip Ross May, Origins of Hydraulic Mining in California, 8-9.

acres of farmland, flooding towns and cities, and destroying commercially navigable stretches of the Sacramento, Feather, Yuba and American rivers. Although the “Debris Problem” as it became known in the local press, began to seriously harm the regional agricultural, commercial and navigation interests in the 1860s, there was not a serious challenge the hegemony of gold mining over farming and commerce until the 1870s. These developments ultimately affected the mines of the Trinity River Basin.

In the Trinity River Basin debris harmed transportation networks, caused flooding in Weaverville, and ended early attempts to exploit the salmon runs near Weaverville for commercial purposes.²⁰⁴ The introduction of mining debris into a river system changes river bed morphology and flood behavior. When a river channel fills with debris, the height of the banks remain the same, and the ability of the stream to carry flood waters diminishes. The final result is that even a slight rise in water levels can send the river over its banks onto surrounding lands carrying with it debris.²⁰⁵

The winter flood of 1861-1862 was a memorable event in California history. The flood scoured high mountain canyons and stream beds that had filled with mining debris, and moved it into the major rivers of the Sacramento Valley causing those rivers to overflow their banks and inundate farm lands and towns and kill several people.²⁰⁶ Within the Trinity and Klamath Basin, flooding occurred as well, and was severe enough

203Robert L. Kelley, Battling the Inland Sea, 64.

204Robert L. Kelley, Battling the Inland Sea, 3-7, 10-16, 27.

205Robert L. Kelley, Battling the Inland Sea, 26, 63, 72; Robert L. Kelley, Gold vs. Grain, 56-84.

206Robert L. Kelley, Battling the Inland Sea, 70-74.

on the lower Klamath that the Klamath Indian Reserve, created in 1855 for Yuroks on the lower Klamath below Weitchpec, was flooded and washed away. Buildings washed away, crops and fields were destroyed, and several feet of debris covered much of the reserve causing the Yurok to abandon the reservation and move to their former homes along the Klamath.²⁰⁷ But the mines in the Basin continued dumping without restriction. Throughout the remainder of the 1860s, floods came and went, depositing more debris.²⁰⁸ This continued in the Sacraments Basin as well, and because of mining debris, steam navigation companies lost the use of the Sacramento from the town of Sacramento to Red Bluff, a distance of 395 miles. They also lost 41 miles on the Feather River making it more costly to send freight to the Trinity and Klamath Mines.²⁰⁹ Eventually, valley agricultural interests began a long series of court battles with the hydraulic mining industry that eventually ended on the side of farming and navigation.²¹⁰ The intricate legislative and legal battles surrounding the debris issue are beyond the scope of this study, but a general discussion is important to our understanding of hydraulic mining in the Trinity River Basin.

In 1878, after several devastating floods had caused millions of dollars in damage and loss of life in the Central Valley, an uproar from valley agriculture, urban, and

²⁰⁷No sources yet consulted directly connects the destruction of the Klamath Reserve specifically to mining debris, but it is safe to assume that place mines contributed to the sediment load of the Klamath River by 1862, 12 years after mining commenced in that region.

²⁰⁸Robert L. Kelley, Gold vs. Grain, 58-59.

²⁰⁹Jerry MacMullen, Paddle Wheel Days in California, 144-145.

²¹⁰Robert L. Kelley, Battling the Inland Sea, 63-65.

navigation interests prompted the State legislature to investigate the debris problem. The legislature created the Office of State Engineer and charged it with producing a report investigating the capacity and condition of the State's rivers, irrigation possibilities, and the improvement of navigation. Specifically, the State Engineer was to report on how much damage debris had caused to rivers and lowland property, and return a plan whereby future injury could be stopped without closing the hydraulic mines.²¹¹

The legislature appointed William Hammond Hall as State Engineer, and under his able, but under funded direction, there began a systematic survey of California's two most important navigable rivers; the Sacramento and San Joaquin. Hall was a former officer in the Army Corps of Engineers and had been studying the Sacramento and San Joaquin River systems since the early 1870s. The Army Corps, as a federal interest, was concerned primarily with navigation and conducted intensive mapping surveys of the Sacramento and San Joaquin-California's two main navigable rivers to aid navigation for commerce - the debris was secondary to them at first.²¹² Hall incorporated his experience with the Corps into his own work for the state and eventually issued his report in 1880.

Hall concluded that hydraulic mining had severely damaged the Sacramento, San Joaquin, and other rivers receiving debris, destroyed thousands of acres of farmland, and ruined navigation. Flooding, Hall warned, was natural and inevitable, but was made worse by debris and these problems would continue to worsen unless addressed quickly. Hall recommended a system of debris dams and levees to control debris, control floods,

211Robert F. Kelley, Gold vs. Grain, 104-105; Robert F. Kelley, Battling the Inland Sea, 187-188.

212Robert L. Kelley, Battling the Inland Sea, 191-193.

and scour rivers by increasing water velocity. Halls' plan included only general data on where dams might be built, and it did not include a detailed description of the volume of water that surged down the Sacramento Valley during flood periods.²¹³

There are no precise statistics for the amount of debris dumped into the rivers of the Sierra Nevada, but federal statistics for the period 1853 to 1909 reveal a startling picture. Estimates for this period show the following: Yuba River, 685 million cubic yards of debris dumped; Feather River, 100 million; Bear River, 255 million; American River, 255 million; Butte Creek and Cherokee Canal, 30 million. Farther south in the area of the Tuolumne and Mokelumne Rivers, 230 million cubic yards of debris were dumped. Thus, an estimated total of one billion, five hundred and fifty five million cubic yards of debris entered valley streams and rivers, and much of this debris arrived before Hall finalized his study in 1880.²¹⁴

After Hall submitted his report, the California State legislature began consideration of an act that was a compromise among various interests, and embraced the main points of Hall's work. The 1880 "Act to Promote Drainage" called for the creation of a three-person commission to approve plans submitted by the State Engineer with the U.S. Army Corps of Engineers acting as a consultant. The act called for the erection of works to control mining debris, protect towns from flooding, improve navigability and

213Robert L. Kelley, Gold vs. Grain, 132-135; Robert F. Kelley, Battling the Inland Sea, 202-207.

214Joseph J. Hagwood, Jr., The California Debris Commission: A History, 21; Robert F. Kelley, Battling the Inland Sea, 202-203; Grove Karl Gilbert, Hydraulic Mining Debris in the Sierra Nevada, 43; Thomas L. Casey, Mining Debris, California, 51st Congress, House Executive Document 267 (Washington, D.C., 1891), 9.

prevent further harm of navigable rivers.²¹⁵ The costs would be covered by a complicated series of taxes.

While the legislators debated the Drainage Act, the Army Corps of Engineers, which initially studied and mapped for the interests of navigation issued its own preliminary report on its investigation of the Sacramento and San Joaquin rivers and the worsening debris problem to the Secretary of War. The conclusions of the reports' main author, Lieutenant Colonel G.H. Mendell, not surprisingly supported Hall's report in almost every way. Mendell painted a bleak picture of the condition of California's navigable waterways, and went farther than Hall by recommending nine large debris dams in the Sierras to halt debris from the mines.²¹⁶ The contents of the report boosted support for the Drainage Act, which became law soon thereafter. The Drainage Act marks one of the earliest instances when a state acted to create a governmental agency to protect and control rivers in the interest of the general welfare rather than for one interest over another.²¹⁷ On the federal level, the Army Corps ordered Mendell to prepare an additional report on the feasibility of the suggestions put for in his preliminary report issued in 1880.²¹⁸

Under the Drainage Act, brush debris dams and levees were quickly thrown-up, and the supporters of the act claimed, prematurely it turned out, that they had solved the

215Robert L. Kelley, Gold vs. Grain, 135-136.

216Robert F. Kelley, Battling the Inland Sea, 208-209.

217Robert L. Kelley, Gold vs. Grain, 144, 149-153.

218Robert F. Kelley, Battling the Inland Sea, 210.

debris problem. The mining industry continued hydraulicking and adding debris, and the rather half-hearted measures to halt the debris failed. Opponents of the Drainage Act argued that dams alone were not a realistic solution. Rather, the problem, Hydraulic mining, they insisted, must be stopped.²¹⁹ The 1880 Drainage Act was a compromise designed to allow hydraulic mining to continue while attempting to protect navigable waterways, valley communities, and farmland. The act was an attempt to satisfy all sides in the controversy showing that the state was as yet unwilling to officially stand totally against an industry that even the experts said was a nuisance to the public welfare. However, for technical reasons, in September 1881 the Drainage Act was declared unconstitutional leaving California agricultural and commercial interests without any law or policy to address the debris problem. It was now time for litigation.²²⁰

The State of California and individuals brought numerous lawsuits against hydraulic mines to halt operations. Many cases lasted for years and made their way to the State Supreme Court, and almost all of them went against the hydraulic mining industry. Yet loopholes in each decision allowed mining to continue forcing the litigants to seek redress in federal court where, finally, hydraulic mining was dealt a severe blow.²²¹ The single most important case decided against hydraulic mining, and which

²¹⁹Robert L. Kelley, Battling the Inland Sea, 217.

²²⁰After the State Supreme Court declared the 1880 Drainage Act unconstitutional, California had, from that point forward, to rely upon the federal government for planning and executing the mitigation of rivers harmed by hydraulic mining.

²²¹Of all the lawsuits filed, three are most important. In the case of, *The People of the State of California v. The Miocene Mining Company*, for the first time the state of California went to court in an attempt to stop a hydraulic mine from damaging lowland property. In the cases of, *The People v. The Gold Run Ditch and Mining Company*, and *Edwards Woodruff v. North Bloomfield Gravel Mining Co., et al.*, the

really brought the industry to its knees, at least in the Sierra Nevada region, was the *Sawyer Decision*.

The case began in September 1882, when Edwards Woodruff filed suit in the Ninth United States Circuit Court of Appeals at San Francisco against the North Bloomfield Gravel Mining Company and all hydraulic mines working along the Yuba River asking for a perpetual injunction against them.²²² *Edwards Woodruff v. North Bloomfield Gravel Mining Co., et al.*, dragged-on for eighteen months, and the decision, commonly known as the *Sawyer Decision*, was handed-down in two parts. In April 1883, Judge Lorenzo Sawyer ruled that there was no misjoinder of defendants as asserted by the mining companies in the case (in other words, Sawyer said it was legal and right to join all defendants under one suit). Sawyer stated that enjoining all defendants in one suit was valid because all the defendants were cooperating to produce debris, and the debris flowed as a combined mass before damaging farmlands and rivers. The first half of the decision eliminated the prohibitively expensive method of having to sue each mine individually.²²³

The second part of the *Sawyer Decision* was handed down on January 5, 1884. The Judge ruled that the brush debris dams the State constructed under the Drainage Act (one on the Bear and one on the Yuba) had proven ineffective in halting debris, and the dams built by mining companies on their own in an effort to mitigate the problem failed

hydraulic mining industry was permanently restrained from dumping debris into the rivers of the Mother Lode region.

²²²Robert L. Kelley, Gold vs. Grain 229-242.

²²³Robert L. Kelley, Gold vs. Grain, 233-234; Joseph J. Hagwood, Jr., The California Debris

and thus did not stop the complaints of downstream residents. Sawyer said these dams were essentially useless and half-hearted gestures. Therefore, unless tailing debris into rivers was granted by law, which it was not, dumping debris constituted a major destructive nuisance to private and public interests under common and statutory law. Thus, the mining companies were perpetually enjoined from dumping any type of mining debris or refuse into the Yuba River or any of its tributaries.²²⁴ The decision would effectively end hydraulic mining in the Sierra Nevada, but not immediately, and it did not end hydraulic mining elsewhere. By its language the Sawyer Decision did not actually forbid hydraulic mining, instead it forbade miners from dumping debris in a river if the dumping created a public nuisance by harming navigation and farmlands. Thus, if a mining company could find a way to mine while keeping debris out of rivers and streams, it could legally operate.²²⁵ Once again, Sawyer gave the mining companies a loophole, but nature and technology were not so kind. Debris dams could simply not be built high and strong enough, nor even large enough to restrain millions of cubic yards of sediment. Mining companies, therefore, could not afford to build big dams, nor did they yet possess such technology. Thus, the *Sawyer Decision* put a stop to most hydraulic mining in the Sierra Nevada, but not in the northern mines of the Trinity River and Klamath River mines.

While the *Sawyer Decision* was hailed as a great victory for valley interests, the issue of debris remained important to valley residents and navigation interests because so

Commission: A History, 25-26.

²²⁴Robert L. Kelley, Gold vs. Grain, 239-240.

much debris was still sitting in the mountains waiting to be washed into the Sacramento and its tributaries. To deal with this latter issue, in 1888, Congressman Marion Biggs of California secured passage of a bill in Congress providing for a definitive investigation of the debris problem and the possibility of river reclamation. The bill created a three-person commission composed of Army Corps officers, who were to study the debris problem, and submit a report on the possibility of reclaiming the rivers and reviving hydraulic mining. The Biggs Commission, as it was known, conducted extensive interviews and surveys in an attempt to reconcile mining, farming and navigation interests. In 1891 the commission issued the "Heuer Report," named after Major W.H. Heuer of the Commission.²²⁶

The Heuer Report stated that hydraulic mining had to cease because of the damage it had done and was doing to rivers, and its method of debris disposal was in violation of recent court decisions. Heuer stated that high stone debris dams were feasible and could effectively restrain much of the debris on major rivers if no more debris was added. These findings were nothing new. What is significant about the Heuer Report was the section addressing the funding of the construction of debris dams. "The construction of dams being called for entirely in the interests of the miner, the cost

225 "Mining Debris, California," House Executive Document 267, 51st Congress, 2nd Session, 4.

226 "Report of the Board of Engineers on Mining Debris Question in State of California," House Executive Document No. 267, 51st Congress, 2nd Session, 1891; Joseph J. Hagwood, Jr., The California Debris Commission: A History, 27. The Biggs Commission is sometimes referred to as the "Benyaurd Commission", because the Heuer Report was compiled under the Direction Lieutenant Colonel W.H.H. Benyaurd of the Army Corps of Engineers and head of the three member Army Corps Investigating commission created by Congress in 1888. See: Grove Karl Gilbert, Hydraulic Mining Debris in the Sierra Nevada, United States Geological Survey Professional Paper 105 (Washington D.C: United States Government Printing Office, 1917), 11.

thereof should be borne by the individual interested. . . ."²²⁷ This brief passage suggested that debris dams used exclusively to restrain mining debris from mines wishing to operate had to be paid for by the mines themselves rather than from taxes or by the federal purse. Although he did not say so in the report, Heuer must have understood the implication - it would cost more for a mine to build a stone high dam than it could make from mining.

In 1892, just after the delivery of the Heuer Report, Congressman Anthony Caminetti of California introduced another bill in Congress that encompassed the major recommendations of the report. Caminetti, in his own effort to save mining, also proposed the creation of a Debris Commission that would have the power to regulate and license hydraulic mines if they could prove that they were in compliance with rules and regulations implemented to protect farms and navigable rivers. In March 1893, the bill, known as Caminetti Act, became law. The bill created the California Debris Commission (CDC) and its members were drawn from the ranks of the Army Corps of Engineers and appointed by the President of the United States. The jurisdiction of the California Debris Commission only extended to navigable rivers and their tributaries:

That the jurisdiction of said commission, in so far as the same affects mining carried on by the hydraulic process shall extend to all such mining in the territory drained by the Sacramento and San Joaquin river systems in the State of California. Hydraulic mining, as defined in section eight hereof, directly or indirectly injuring the navigability of said river systems,

²²⁷Quoted in Joseph J. Hagwood, Jr., The California Debris Commission: A History, 28.

carried on in said territory other than as permitted under the provisions of this act is hereby declared unlawful.²²⁸

This section of the act had significant implications for the Trinity River Basin. The duties of the California Debris Commission were extensive and required the commission members to possess extensive knowledge of river behavior and the works used to alter that behavior. The CDC became the final authority on any subject or issue relating to hydraulic mining within the jurisdiction outlined by the act creating it. Any miner or mining company wishing to operate within the CDC's area of jurisdiction had to apply for a license, submit plans and specifications for debris restraining structures, and wait for approval to commence construction. Once finished, the structures were inspected and a license to mine granted. If at anytime thereafter the mine caused any damage downstream, the CDC revoked its license and shut down the mine.²²⁹

The significance of the above discussion about the fight in the Central Valley over the harmful effects of hydraulic mining is that the Caminetti Act did not apply to regions lying outside the Sacramento-San Joaquin watershed. The debris controversy was limited to the Central Valley and its tributary streams because of the navigable nature of many

²²⁸"An Act to Create the California Debris Commission and Regulate Hydraulic Mining in the State of California" as amended to January 1, 1938. (Washington D.C.: Government Printing Office, 1938), sections 3 and 4; See also, Appendix A, in Joseph J. Hagwood, Jr., The California Debris Commission: A History, 90.

²²⁹Joseph J. Hagwood, Jr., The California Debris Commission: A History, 30. Hydraulic mining in the Sacramento-San Joaquin watershed continued on a minute scale as compared to the heyday of the 1870s and early-1880s, but as late as 1980, hydraulic operations under the supervision of the CDC were still working Tertiary gravels in the Sierra Nevada.

inland rivers, and the presence of millions of acres of farmland.

The development of hydraulic mining on the Trinity River must be considered within the context of the debris controversy in the Central Valley and the protection of navigable streams in that part of California. Unlike the Sierra Nevada, the Trinity watershed did not contain nearly the massive quantities of Tertiary gravels for washing by the hydraulic method. Instead, numerous "bench" deposits suitable for mining with hydraulic technology ran parallel to regional rivers and streams. As noted previously, miners began small-scale hydraulic mining along the Trinity River a few years after the development of that technology in the Sierra Nevada. Large-scale mines soon opened employing the same methods and equipment. As the mines located within the Sacramento and San Joaquin River watersheds began to shut down after the 1884 *Sawyer Decision*, hydraulic mining activity picked-up in the Trinity River Basin. The hydraulic mines along the Trinity and its tributaries were never as numerous as those in the Mother Lode, but many were large ventures and their activity permanently impacted the river. The tailings from these mines washed into tributaries and the main stem of the Trinity River choking the river with debris and altering stream-bed morphology.²³⁰ High gravel benches deposited by the Trinity River for thousands of years were reduced to gaping pits and exposed bedrock. Miners used their nozzles to push tailings into mercury-lined sluices where placer gold amalgamated with the mercury to assure higher recovery rates. The water, rocks, sand, mud, silt and unknown quantities of mercury flowed into nearby

²³⁰Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey: Geoscientific Systems and Consulting, March, 1981), 33.

drainages, streams and the Trinity River where it remained, lodged or eventually washed downstream.²³¹

Regardless of the praise historians have heaped upon the *Sawyer Decision* and the Caminetti Act as early pro-environmental measures, they did not apply to the Trinity River Basin because there was little agriculture in the watershed (except for the Hoopa Valley Reservation) and the river was not navigable. Because it was not navigable, the river was also outside of the jurisdiction of the California Debris Commission. During the debris controversy, the hydraulic mines in northwest California were seldom mentioned. In fact, as early as 1876, when the Army Corps was studying the debris problem, it did not even investigate the Trinity and Klamath rivers because it was assumed they were not navigable streams. If they had been so, they would have been under the jurisdiction of the Corps. In the Mendell Report, for example, the officer explained that because the Trinity and Klamath Rivers were not navigable, and the debris posed no problem to agricultural lands, they were excluded from investigation:

It may be remarked that in addition [to the hydraulic mines operating in the Sierra Nevada] there are, on the Klamath and Trinity, one of its [the Klamath's] branches, quite important places, which are now worked [by the hydraulic method]. The detritus is lodged in the rivers, which are neither navigable or tributaries of navigable rivers, so that this separate

²³¹Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest (Playa Del Rey: Geoscientific Systems and Consulting, March, 1981), 76-77.

mining district is not thought to come within the limits of this investigation.²³²

The contemporary press was not lost to the fact that the *Sawyer Decision* did not cover hydraulic mining in the north. In January 1887, *The Mining and Scientific Press*, a San Francisco newspaper catering to the mining industry, pointed-out to its readers that while hydraulic mining was almost dead in the Sierra, the hydraulic mines in Trinity County were expanding and the trend was likely to continue:

Since the closing by legal procedure of [hydraulic mines vs. the State] in the central mining counties . . . the gold obtained from this source [is] diminished to about one-fourth of what it once was. This reduction would have been considerable [sic.] greater, but for some increment in the business in the more northerly counties, where it has not yet been interfered with by legal process, nor is it at all probable that it ever will be, as there is no agricultural or other interests there exposed to be injured by its continuance.²³³

232Lieutenant Colonel G. H. Mendell, United States Army Corps of Engineers, "Report Upon a Project to Protect the Navigable Waters of California From the Effects of Hydraulic Mining." House Executive Document 98, 47th Congress, 1st Session, 1882., 9.

233The Mining and Scientific Press, January 28, 1887, 73:3.

Local boosters in the northern counties encouraged hydraulic miners to come to the Trinity River region in hopes of stimulating the local economy. Legal and environmental conditions were favorable to hydraulic mining, and the flurry of court decisions and injunctions did not reach the north. Describing the Klamath River, the largest river in northern California, a local booster outlined the reasons why hydraulic mining went unregulated in northern counties:

Placer mines [in the north] pay well, hydraulic better This region should be the paradise of the hydraulic miner. It is out of the injunction belt, as the Klamath is not navigable, its banks are not arable and its debris not possibly detrimental to any interest.²³⁴

The Heuer Report of 1891 gave more attention to the mines on the Trinity and Klamath Rivers and other northwestern rivers in what is termed the "northern district" of hydraulic mining, but the same conclusions were reached about the rivers and mining as put forth by Mendell. Heuer stated:

The gravel deposits composing the hydraulic mining field in California may be considered as embraced in two districts. The upper one, in the northwestern part of the State, embraces portions of the counties of

²³⁴San Francisco Call, July 9, 1887, 5:1.

Trinity, Siskiyou, and Humboldt and is watered by the Klamath, Trinity, Salmon, and Scott rivers and their tributaries In this upper district there are no farming lands liable to injury from the debris [discharged from the mines], nor are there any river channels which need improvement or rectification [for navigation]. By acts of the legislature of the State the main rivers have been declared navigable, but they are not so in fact. There are therefore not the same reasons for restriction [of hydraulic mining] as have been advanced against the operations in the Sierra district.²³⁵

Heuer then went on to say:

There is no conflict in this section between the miner and the farmer, and therefore there are no differences to be reconciled. The main streams are not navigable, and thus dumping debris into their channels, or that which works down from the tributary streams, can be productive of no harm.²³⁶

However, debris did cause problems for people and wildlife living downstream

²³⁵"Mining Debris, California," House Executive Document 267, 51st Congress, 2nd Session, 6.

²³⁶"Mining Debris, California," House Executive Document 267, 51st Congress, 2nd Session, 7.

from the mines of the Trinity watershed.²³⁷ As we have seen, beginning in the 1850s, the amount of debris discharged by hydraulic and other types of placer mines into the Trinity River and its tributaries was certainly large, but the debris issue received little attention from the contemporary press and other observers, and did not command the attention of the state of California.²³⁸ With fragmentary evidence presented earlier in this chapter, we have already seen a glimpse of some of the consequences of debris deposition along the Trinity River. The limited observations of the Trinity River region during the nineteenth-century show that mining debris accumulated in the Trinity River and its tributaries, and the fact that the Sawyer Decision, Caminetti Act and CDC did not regulate the debris on these streams left them open to continual debris build-up. Finally, with the encouragement of the local press, hydraulic mining was actually encouraged in the region, and the main bait dangled in front of the eyes of potential hydraulic mining companies was the claim that debris could never cause problems in the Trinity and Klamath basins.

Yet we know that debris impacted the lives of those peoples living along the river in negative and positive ways. On the positive side, mining created jobs and pumped

²³⁷Debris from the Trinity mines combined with that of the Klamath mines before the latter drained into the ocean. Besides Hoopa Valley, on the Trinity River, a site of arable land on the lower Klamath was chosen as a reservation (Klamath River Reservation) and Indians began farming. The flood of 1862 washed away 29 of 30 reservation buildings, and deposited debris three to four feet deep upon the site. The Department of the Interior abandoned the reservation as a total loss. Records focus on the severity of the flood, but do not speculate as to the source of the debris. It is highly likely that mines on the Klamath and Trinity Rivers were the source. See George Osborne Anderson, "The Hoopa Valley Reservation in Northwestern California: A Study of its Origins", Master's Thesis: University of California, Berkeley, 1956, 136, fn.66.

²³⁸In the 1930s, the debris issue on the Klamath and Trinity did get the attention of the State of California.

money into the local economy. On the negative side, the rivers filled with sediment causing severe interruptions of salmon and steelhead runs, and undoubtedly destroyed spawning beds. The alterations and pollution of the Trinity River seriously disrupted Native American subsistence practices and was a significant factor leading to a series of bloody regional conflicts between Native Americans and gold miners.²³⁹ Debris also destroyed property, and cost counties and municipalities money to repair bridges and roads, and hurt small businesses.²⁴⁰

By the 1870s, small scale placer mining was dying in the Trinity River Basin, and hydraulic mines were becoming the norm. In the 1870s, Stephen Powers, a newspaperman with a keen interest in anthropology, toured California and published a series of articles on the condition of the Indians of California. His collected observations were published first in Harper's and later as a single publication, Tribes of California, which is still a classic work on a world that was undergoing rapid transformation. On Trinity River, his observations give us some idea of the impact mining had upon the fishery resource. Powers, described the area at the confluence of the Trinity and Klamath rivers:

As to the enormous numbers of salmon which ascended the streams of California before miners roiled them there can be no doubt. Here [at

²³⁹Stephen Powers, Tribes of California, 73.

²⁴⁰John Carr, Pioneer Days in California (Eureka, California: Times Publishing Company, 1891), 148. File: "Trinity River-Dam," Doc #2, p.7. February 9, 1856, Weaverville Historical Society Museum, Weaverville, California. Article possibly from the *Trinity Journal*. Allen Butler to the Trinity County Board of Supervisors, August 8, 1858, Trinity County Petitions, C-A 318, Bancroft Library, University of California, Berkeley., Franklin A. Buck A Yankee Trader in the Gold Rush: The Letters of Franklin A. Buck, Katherine A. White, ed. (New York: Houghton Mifflin Company, 1930), 191.

Weitchpec] one veteran pioneer says . . . he could have walked across the stream and stepped every step on a dead salmon; another that he has seen them so crowded in the deep and quiet reaches of the river that he could not thrust a spear without transfixing one or more.²⁴¹

Powers continued his observations at Hoopa Valley noting that the Hupa Indians were less impacted directly by mining because there was little gold in Hoopa Valley. However, by the time Powers visited them, they, like other native peoples of the region, had been involved in a series of bloody conflicts arising directly out of the disruption of fish runs by placer mining and were now trying their hands as subsistence farmers under watchful eyes of the soldiers at Camp Gaston and the agents of the BIA.²⁴²

Farther up the Trinity River in the territory of the Chimariko Indians, Powers commented directly upon changes in the stream channel of the Trinity River and the changes in salmon runs. "In the early days, before mining operations filled up the Trinity [with debris], there was a fall five or six feet high at Big Flat, above which the salmon could not pass."²⁴³ Salmon can easily pass an obstacle of "five or six feet," so the falls, if they impeded salmon runs, were probably higher than Powers' estimate. Nevertheless, by the 1870s, the falls had obviously filled with debris and salmon were able to move easily up river. If Powers' observations are correct, the bed of the Trinity River was drastically

241 Stephen Powers, Tribes of California reprint. (Berkeley: University of California Press, 1976), 59.

242 Stephen Powers, Tribes of California reprint. (Berkeley: University of California Press, 1976), 73.

243 Stephen Powers, Tribes of California reprint. (Berkeley: University of California Press, 1976),

different than it had been in 1850 when the rush hit hardest, and the population of salmon had visibly declined within twenty years of the Gold Rush.

It was this drastic impact upon the Trinity River and tributary streams that helped contribute to the conflicts between whites and Indians discussed previously. The Chimariokos, whose homeland stretched along the Trinity River from the confluence of the South Fork of the Trinity east to Big Bar, were the hardest hit and were completely routed from the Trinity River canyon. Powers stated while he was in the former home territory of the Chimarikos, that "sternly were the Indians taught that they must not presume to discuss with American miners the question of the proper color for the water of the Trinity River."²⁴⁴ The quote clearly suggests that pollution of the Trinity River was a major source of conflict. Powers concluded that by the early 1870s just a few years before his visit, most independent miners were gone but had left behind devastation. "[A]mid the stupendous ripping-up and wreck of the earth. . . ." is a grim, rock-bound canyon strewn with grey boulders, abandoned mines, equipment and [abandoned and burned] Indian villages.²⁴⁵

In 1872, the year Powers began touring California, the California State Board of Fish Commissioners, a recently created regulatory body, declared mining to be the single

93-94.

244Stephen Powers, Tribes of California reprint. (Berkeley: University of California Press, 1976)., 94.

245Stephen Powers, Tribes of California reprint. (Berkeley: University of California Press, 1976)., 94-95.

biggest cause for the depletion of anadromous fish in the state.²⁴⁶ They could have just as easily claimed that mining was also the biggest cause for the destruction of Native American societies. Nevertheless, the declaration by the California Fish Commission was aimed at the Central Valley and had not impact or weight in the northern mines. The extensive impact of mining in the Trinity River Basin was keenly felt by the native peoples living there, and the disruption of the ecosystem was rapid and extensive. Power's observations are the best contemporary observations we have on how mining debris changed the Trinity River and the lives of the indigenous people who lived there. But we can look at other developments to see that this alteration was not over when Powers was writing.²⁴⁷

The most well-known and visible example of the impact of hydraulic mining debris upon the Trinity River and downstream residents was the LaGrange Mine. The La Grange was located in Oregon Gulch three miles west of Weaverville. Originally the mine was several different mines worked by various mining companies. By the 1860s, miners applied the hydraulic method to several of the claims and large-scale mining began. By the 1870s, these mines were producing thousands of yards of debris every day and continued to do so for decades.²⁴⁸ In the early 1890s, European investors purchased several of the claims and consolidated them into a single, large industrial hydraulic mine.

²⁴⁶Arthur F. McEvoy, The Fisherman's Problem: Ecology and Law in the California Fisheries, 1850-1980 (New York: Cambridge University Press, 1986)., 84.

²⁴⁷Arthur F. McEvoy, The Fisherman's Problem: Ecology and Law in the California Fisheries, 1850-1980 (New York: Cambridge University Press, 1986)., 84.

²⁴⁸The first hydraulic monitors were installed at the mine in the early-1870s. See: *Trinity Journal*, February 15, 1873. Trinity County Historical Society Museum, Weaverville California, Document

The La Grange Hydraulic Mining Company expanded the operation by bringing in additional water and the most modern hydraulic equipment. The LaGrange became one of the largest hydraulic mines to ever operate in California and produced mountains of debris²⁴⁹ The company fed its Giants with millions of gallons of water brought in from the Stuart's Fork of the Trinity River northeast of the mine. A series of ditches, flumes, tunnels and siphons re-directed the water out of the Stuart's Fork, over the mountains, and to the company's reservoir. The mine discharged its debris directly into Oregon Gulch where it flowed into the Trinity River.²⁵⁰

File: Mining, Document #18a and 18b.

²⁴⁹J.J. Jackson, Tales of the Mountaineer (Weaverville, California: Rotary Club of Weaverville, 1964), 59-66.

²⁵⁰California Division of Mines and Geology, Gold Districts of California, 144-146.



Looking over the pit of the La Grange Mine. Note only two people can be seen as the face caves-down. Possibly Eastman photo postcard. Ca. 1930-1940. Authors' personal collection.

The LaGrange Mine and the predecessors on the site continuously produced debris from the 1860s well into the twentieth century.²⁵¹ The amount of debris produced by the LaGrange was so large that to avoid litigation with downstream residents, the mine owners purchased a debris "right-of-way" to the Trinity River consisting of Oregon

Gulch below the mine for a distance of four and a half miles from the mine to the Trinity River, and one quarter of a mile on either side of the gulch.²⁵² This four and a half by one-half mile right-of-way encompassed the entire town of Oregon Gulch. As the LaGrange continued operation, the town was eventually covered with debris to an estimated depth of four to five hundred feet.²⁵³ Official estimates show that the LaGrange discharged at least one hundred million cubic yards of debris into Oregon Gulch and the Trinity River.²⁵⁴ Residents of Oregon Gulch relocated elsewhere in the region, and the only building moved in tact was the Catholic Church which residents moved to Junction City where it still stands.²⁵⁵

As of 1898, the LaGrange was just one of three hundred and seven hydraulic mines working or claimed in Trinity County. Of that number, one hundred and forty-five properties were operating as of October 1898, employing hundreds of miners and discharging thousands of tons of detritus into the Trinity River and its tributaries daily

251 Mines and Mineral Resources of Trinity County, 32-33.

252 Jerome McDonald, "La Grange Mine - Trinity County, California," Student Essay, 1971.

253 J.J. Jackson, Tales of the Mountaineer (Weaverville, California: Rotary Club of Weaverville, 1964), 59-66.

254 Exact figures for the amount of debris washed and gold recovered by the LaGrange Mine vary. See: California Division of Mines and Geology, Mines and Mineral Resources of Trinity County, 32-33; California Division of Mines and Geology, Gold Districts of California, 144-146; J.J. Jackson, Tales of the Mountaineer (Weaverville, California: Rotary Club of Weaverville, 1964), 59-66.

255 Oregon Gulch was a rich mining area prior to the arrival of hydraulic equipment at the LaGrange Mine. Residents sold-out to the LaGrange and moved to other locations. The Catholic Church was moved to Junction City, and a ranch owned by Robert "Bob" Slattery was covered by water backed-up by a debris dam created by LaGrange tailings. The body of water is known as Slattery's Pond. See: Vernon Ryan, "LaGrange Mine" Oral History Transcription. (Weaverville Historical Society Museum, Weaverville, California, October 3, 1969). Document File: LaGrange, Document #27, p.4.

without regulation.²⁵⁶ A California mining publication commented that by the late nineteenth century:

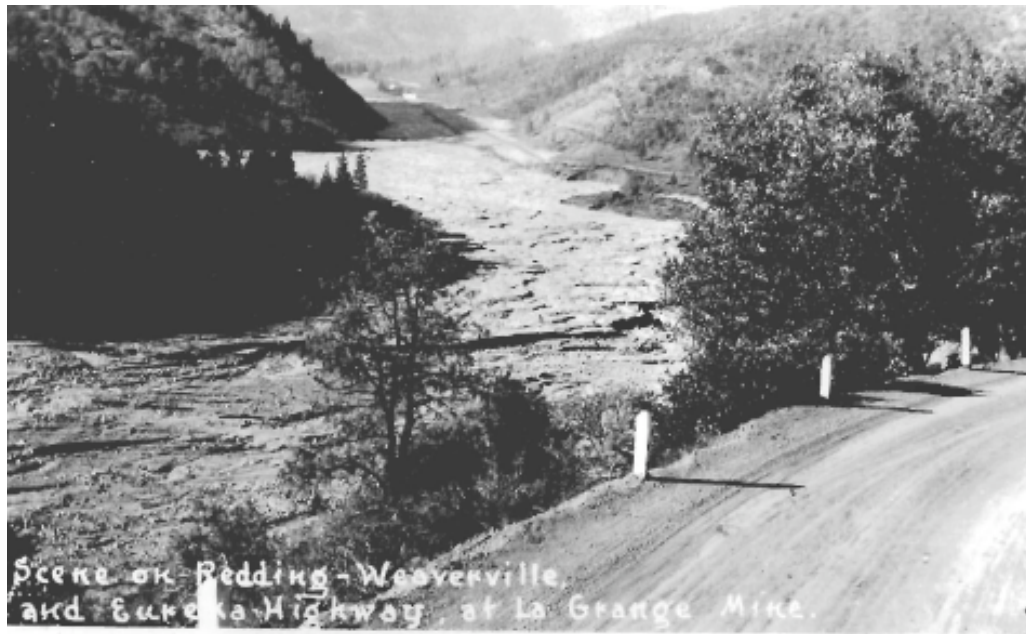
Hydraulic mining is carried to its highest development in Trinity County, as the anti-debris law does not obtain there. The famous LaGrange mine. . .is situated west of Weaverville. . .where the problem of what to do with the tailings does not worry the management, and the conditions for economical working are so favorable, that gravel carrying only five cents a cubic yard can be worked at a good profit. . .[and the mine] has immense reserves of auriferous gravel. . . .²⁵⁷

Although the LaGrange was the largest hydraulic mine in Trinity County, there were others of considerable size including the Cie Fse, near Junction City, the McMurray and Hupp Mine near Weaverville, the Sykes Hydraulic Mine located near Trinity Center, and the Indian Creek Mine near Douglas City.²⁵⁸

²⁵⁶California State Mining Bureau, Register of Mines and Minerals: County of Trinity, California (Sacramento: Superintendent of State Printing, 1900). The number of operating hydraulic mines and employees may be too low because mine owners were reluctant to give information to the State Mining Bureau during field surveys.

²⁵⁷E.H. Nutter, "Gold Mining in Trinity County: An Unfailing Record of Production Which Dates Back to the Days of the Pioneer." Pacific Coast Miner, February 27, 1904.

²⁵⁸California State Mining Bureau, Register of Mines and Minerals: County of Trinity, California (Sacramento: Superintendent of State Printing, 1900).



Debris accumulating in Oregon Gulch below the La Grange Mine. Note that this view leads down to the Trinity River. Also note the land slides on the right-center. Somewhere in the debris lies the town of Oregon Gulch. Unknown photographer. Postcard ca. 1927. The back of the card describes “the beautiful scene on the Trinity River in California.” Authors’ personal collection.

It is within the context of a continually expanding industrial mining industry and the growth of new extractive industries that we must understand the interconnectedness of human activity, environmental change, and the decline of the anadromous fishery of the Trinity River Basin upon which the Hupa, Karok and Yurok depended. And through this context we may also understand the problems faced by indigenous people. Finally, it is important to have a basic understanding of the habitat requirements of anadromous fishes if we are to understand how changes in river morphology can disrupt fish populations. At contact, the Trinity River supported a wide variety of aquatic life. The species that most concern us are four anadromous fishes: salmon, steelhead, Pacific lamprey and sturgeon. Although these fishes can survive fluctuations in their habitat,

extreme changes adversely affect their populations. Fishes reproduce and thrive in an ecosystem that is closest to that species' optimal habitat condition. For any fish species, factors important to its ability to survive, thrive and reproduce are: temperature, stream flow and gradient, water chemistry, dissolved oxygen, water salinity, stream depth, cover in the river and along its banks, bottom type, barriers to water flow and fish movement, seasonally related flow and temperature variation, invertebrate population, competition from other fish and aquatic life, and the abundance of aquatic plants.²⁵⁹

When a particular fish species is doing well, biologists assume that the fish live in an ecosystem with optimal conditions for the survival of that species. The anadromous fishes of the Trinity River at contact were well-adapted to that particular stream. The river system was in "balance" and the fishes could survive seasonal changes in the river and the ocean. This is not to say the Trinity remained static. On the contrary, the river was continually fluctuating, but within limits to which the fish had adapted and could survive. Salmon, for example, are highly adaptable to changes in habitat conditions, and their habitat requirements change throughout their life stages. They are born and live in freshwater rivers while young and spend their adult lives at sea. They return to the river only for spawning, and so ensure continuation of their species. If one of their essential habitat requirements is changed or destroyed (for instance, choking of spawning beds or elimination of gravel suitable for spawning), the chain that allows them to maintain their population is broken. Therefore, a "balanced" ecosystem is extremely fragile even

²⁵⁹For a discussion of the fish species of the Trinity River, see Peter B. Moyle, Inland Fishes of California, 24. For habitat classification, biologists divide the Klamath River Basin into upper and lower Klamath River Systems. The Trinity River is part of the lower Klamath River System which includes the Klamath River below Klamath Falls, the Trinity River, and 200 tributary streams. See Peter B. Moyle,

though the fish species may seem hardy and adaptable.²⁶⁰

Biologists classify the Trinity River as a coastal stream based upon its physical characteristics and fish fauna. When miners first entered the area, the Trinity had a variable flow regime ranging from a raging torrent during the rainy season, to a placid stream in the summer. The Trinity River has a high gradient through much of the system, except where it meanders through Hoopa Valley, and so for much of its length, flows rapidly.²⁶¹ Biologists divide coastal streams and rivers into "fish zones," areas that contain optimal habitat for a particular species. The anadromous "fish zone" of a coastal stream exists as far upstream as fish can migrate, and downstream to where tides influence the river's flow. The water is generally cold, clear and fast flowing. Pools are frequent, especially on the lower reaches of the river, and are separated by long stretches of shallow riffles flowing over rocks, gravel and sand. Anadromous fishes use small rocks, sand and gravel for spawning. Young trout and salmon live in the anadromous fish zone for one or two years before moving out to sea. Lamprey may spend from four to five years living along the river's edge and in silty backwaters. Most of the main channel of the Trinity River and the lower reaches of many of its tributary streams were once prime examples of an anadromous fish zone.²⁶² Habitat alterations are the greatest threat to the survival of any species. Human activities that most threaten aquatic fauna habitat are: watershed changes, stream-channel alterations, de-watering (diversion), pollution,

Inland Fishes of California, 36-37.

²⁶⁰Peter B. Moyle, Inland Fishes of California, 24.

²⁶¹Peter B. Moyle, Inland Fishes of California, 35-37.

dams and reservoirs. In addition, the introduction of exotic fish species, and the rise of commercial fishing can all contribute to the decline in native anadromous fishes.²⁶³

Placer and later hydraulic mining created substantial change in the morphology of the Trinity River and contributed to a reduction in the anadromous fish population by filling pools with debris, covering spawning gravels with silt, diverting water, denuding river banks, etc... . Not all of the downward pressure in fish numbers can be attributed to mining. By the 1870s commercial salmon fishing operations arrived at the mouth of the Klamath River. Anadromous fishes that spawn in the Trinity River Basin must pass up the Klamath River to make their way to the Trinity. Industrial salmon fishing operations prevented many of the fish from entering the river system and further reduced the numbers of fish available to upstream residents.²⁶⁴ Commercial fishing took place contemporaneously with mining and so both of these activities combined to cause a rapid reduction of the aquatic life in the Trinity River.

For example, in 1876, Martin Van Buren Jones and George Richardson established the first commercial fishing operation at Requa on the lower Klamath River. The operation was strategically located to intercept fish at the point where they entered the river on their spawning runs to the upper reaches of the Klamath and Trinity rivers.²⁶⁵

²⁶²Peter B. Moyle, Inland Fishes of California, 34-37.

²⁶³Peter B. Moyle, Inland Fishes of California, 46.

²⁶⁴Arthur F. McEvoy, The Fisherman's Problem: Ecology and the Law in the California Fisheries, 1850-1980 (Cambridge, England: Cambridge University Press, 1986), 47.

²⁶⁵Arthur F. McEvoy, The Fisherman's Problem: Ecology and the Law in the California Fisheries, 1850-1980 (Cambridge, England: Cambridge University Press, 1986), 58-60. See also Alfred E.

The fishery was located on land that had been set aside for the Klamath Reserve in the 1850s. The reservation, it will be recalled, was destroyed by flood in 1862, and the land was physically abandoned in 1864. According to the federal government, the area where Jones and Richardson set up operations was still considered part of the Klamath Reserve even though the site had been vacated. Nevertheless, Jones, Richardson, and other squatters attempted to settle the area when rumors circulated that the former reservation would be thrown-open to white settlement. Soon, Jones and Richardson were joined by other commercial fishermen at Requa. These new arrivals operated only temporarily. In 1879 the federal government forcibly evicted Jones and other squatters from the reservation on the grounds that whites were not allowed to fish on Indian land. The government also pointed out that fishing operations were disrupting the inland migration of fish and harming the Indian fishery.²⁶⁶

Jones remained resolute however, and set-up a new enterprise, the Klamath Commercial Company, for canning fish, and also began logging the surrounding mountainsides. The site for the new cannery was over a mile from the river, and therefore not on the Klamath Reserve. Yurok and other Indians took advantage of the presence of Jones' operation. Jones hired local Native Americans to catch and deliver salmon to the cannery for a set price per head which allowed local Indians to participate in the market economy at a time when their traditional subsistence methods were being

Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis: Sacramento State University, 1996., 115.

²⁶⁶Edwin C. Bearss, History Resource Study, Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (Denver: United States Department of the Interior, National Park Service, Denver Service Center, nd.), 145-149, 159-160. See also Alfred E. Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis:

severely disrupted. Since the cannery was off-reservation and Indians fished for Jones, the federal government allowed it to operate, but the cannery was not a success, and closed shortly after its establishment.²⁶⁷

The continual presence of industrial placer mining in the upper Trinity watershed destroyed salmon habitat, and when industrial fishing reduced the numbers of fishes returning to the river to spawn, mining made it very difficult for those fish that managed to avoid the nets to find spawning beds once they were back in the river system. Jones was not the last to attempt canning at the mouth of the Klamath River, and future canning operations adversely impacted the ability of indigenous peoples to gain subsistence from their traditional resource base.

In the 1880s, John Bomhoff, established a cannery on Hunter Creek near Jones' former operation, or possibly assumed control over Jones' enterprise.²⁶⁸ Like Jones, Bomhoff made written agreements with local Indians to supply him with salmon if he supplied them with equipment and paid them ten cents for each fish. This agreement benefitted Bomhoff who stipulated that the Indians working for him could not work for other whites, and that the Indians would also prevent other whites from fishing in the Klamath River estuary. Native Americans, for their part, earned cash and continued

Sacramento State University, 1996., 115-117.

²⁶⁷Edwin C. Bearss, History Resource Study, Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (Denver: United States Department of the Interior, National Park Service, Denver Service Center, nd.), 161.

²⁶⁸Arthur F. McEvoy, The Fisherman's Problem: Ecology and the Law in the California Fisheries, 1850-1980 (Cambridge, England: Cambridge University Press, 1986), 58-60.

fishing for subsistence.²⁶⁹

Of all the commercial fishing operations on the lower Klamath River, the one established by R.D. Hume was the most controversial and successful.²⁷⁰ In 1883, Hume, a successful cannery operator on the Rogue River in Oregon, attempted to lease fishing privileges and obtain the right to establish a cannery on the banks of the Klamath River from the federal government, but was denied the right to do so. Hume then attempted to pre-empt land on the Klamath Reservation, stating that it had been abandoned and was, therefore, open to settlement. Again, he was rebuffed. Undaunted, in May 1887, Hume directly challenged the government by establishing a floating cannery in the Klamath River. He erected a two-story cannery and trading post on a barge in the river and began canning salmon. By staying on the river, Hume insisted that he was not breaking any laws because the river itself was not Indian country. The federal government disagreed and eventually impounded his equipment by charging him with illegal trading of merchandise on reservation land. The matter went to court and was settled in the case of *United State v. Forty-eight Pounds of Rising Star Tea*. The federal government's case against Hume was uncertain because the exact status of the former reservation was not

²⁶⁹Edwin C. Bearss, History Resource Study, Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (Denver: United States Department of the Interior, National Park Service, Denver Service Center, nd.), 162-163. There is some confusion over the exact nature of Bomhoff's involvement in the region. It is possible that R.D. Hume, O. Alexander, B.F. Stone, Jay Deming, and W.F. Beck were the true owners of this new canning enterprise. See Alfred E. Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis: Sacramento State University, 1996., 118.

²⁷⁰The discussion regarding R.D. Hume is taken from Edwin C. Bearss, History Resource Study, Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (Denver: United States Department of the Interior, National Park Service, Denver Service Center, nd.), 161-191. See also, Arthur F. McEvoy, The Fisherman's Problem: Ecology and the Law in the California Fisheries, 1850-1980 (Cambridge, England: Cambridge University Press, 1986).

clear. Hume received a favorable judgment, however, because the prosecution failed to show for the trial. Hume immediately resumed fishing the estuary of the Klamath River using highly productive industrial fishing techniques.²⁷¹

In 1889, Hume organized the Klamath Packing and Trading Company (KP&TC) and built a cannery on the bank of the Klamath River at Requa. In 1890, a flood destroyed the KP&TC cannery, so Hume merged his company with Bomhoff's operation and continued to do business under the same name. The new KP&TC operated through the 1890s and into the early 1900s. Hume put up 17,447 cases of salmon during his operations on the Klamath in this period, but those numbers are low because another cannery, the Requa Fishery Company, operated nearby but left no packing statistics. Moreover, Indians continued subsistence and commercial fishing in the estuary and upriver, but left no record of their subsistence catch. Finally, the KP&TC also took salmon for salt curing which were not tallied.²⁷²

271The best and most recent treatment of the *Rising Star Tea* case can be found in Alfred E. Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis: Sacramento State University, 1996. See pp. 119-22 for a discussion of Hume's effort to secure a cannery location at the mouth of the Klamath River.

272Edwin C. Bearss, History Resource Study, Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (Denver: United States Department of the Interior, National Park Service, Denver Service Center, nd.), 170-172.



Scene at the mouth of the Klamath River ca. 1920. Note the bar of the river which impeded navigation. Also note the sport fishermen in skiffs lined across the mouth of the river creating what locals call “suicide alley,” or “murders’ row.” Also note what appears to be a floating cannery at center-right, and the numerous curing racks on the shore at right. Photo postcard. Patterson. Authors’ personal collection.

Hume’s fishing methods were effective and destructive. Large drift nets were used, as were set nets placed in the Klamath River almost totally blocking the run of all salmon and steelhead except those fish small enough to pass through the mesh. Indian and white fishermen worked together as drift net crews, and Indian fisherman also utilized traditional methods for catching salmon and steelhead such as dip nets, and seine nets. Combined, these methods took a terrific toll on the anadromous fish population. Industrial fishing and canning considerably reduced the numbers of anadromous fishes that made the journey to the spawning beds of the Trinity and Klamath rivers, reducing the numbers of spawning fish and thus the number of fishes that would emerge from the

river the next season.²⁷³

Evidence from the Hoopa Valley demonstrates that commercial fishing at the mouth of the Klamath River lowered the population of anadromous fish, and the strength of runs in the Trinity River. Because placing nets across the river to block passage of all fishes but those small enough to escape through the mesh, it is safe to assume that the cannery operations at Requa had a tremendous impact on salmon populations. As a result of declining fish runs due in part to cannery operations and up-river hydraulic mining which physically destroyed fish habitat, in 1889 the United States Fish Commission established a fish hatchery at Camp Gaston in Hoopa Valley. By looking at the history of the hatchery, we can understand the impacts upon the anadromous fishery because of the operation of canneries on the lower Klamath and mining upriver, and how the Indians were forced to respond and adapt.

On November 1, 1889, Marshall McDonald, Commissioner of the U.S. Commission of Fish and Fisheries, instructed Lieutenant Commander J. J. Brice of the United States Navy to establish an experimental fish hatchery in Hoopa Valley at the site of Fort Gaston to help re-stock the streams on the Pacific coast with salmon. Eggs were to be stripped from fish caught in the Trinity River and also collected at sub-stations on nearby streams.²⁷⁴ The Commissioner selected Hoopa Valley because it was controlled

²⁷³Alfred E. Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis: Sacramento State University, 1996., 145.

²⁷⁴Marshall McDonald, to J.J. Brice, November 1, 1889, RG22, Records of the U.S. Fish and Wildlife Service, Records of the U.S. Fish Commission and Bureau of Fisheries, Records of the Division of Fish Culture, Records Concerning Abandoned Stations, 1879-1931. Box 3. File-Fort Gaston-Establishment, National Archives, Washington, D.C.(Hereafter cited as USFWS, Abandoned Stations, Box, File Name). See also: J.J. Brice, to Marshall McDonald, November 15, 1892, USFWS, Abandoned Stations, Box 3,

by the federal government, thought to have a good supply of salmon and steelhead, and the valley contained several tributary streams utilized by anadromous fishes. Moreover, the valley had a readily available supply of cheap labor that had great skill in fishing for anadromous fishes. Moreover, while the Hupas had adopted subsistence farming and stock raising to an extent, the soils of Hoopa Valley were never very productive, and the rains fell from October to March which is just the opposite of the growing season. Markets in the mines for Hoopa agricultural products diminished as industrial mining ended the need for so many miners, and the valley was isolated with only horse trails leading to and from the valley. The market for Hupa agricultural products was essentially Fort Gaston and BIA project personnel, but by 1889 the military was planning on closing the post and would do so by 1892 and the Hupas themselves scrambled for work in and out of the valley. A fish hatchery would at least provide some potential for a cash income to at least a few families and so the hatchery was welcomed by the Hupa people. By December, 1889, the hatchery was in operation.²⁷⁵ It is significant that the eggs first used to stock the hatchery had to actually be packed into the valley by mules because so few salmon made it to Hoopa Valley that year. The most magnificent salmon and steelhead fishery on the California coast was failing. When fish did manage to ascend the Trinity to Hoopa Valley, local Hupa Indians were paid to catch salmon and steelhead in weirs and traps along the Trinity River and strip them of eggs.²⁷⁶

File-Fort Gaston-Establishment, National Archives, Washington, D.C.

275 J.J. Brice, to Marshall McDonald, December 24, 1889, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

276 Livingston Stone, to Marshall McDonald, October 10, 1892, USFWS, Abandoned Stations,

The salmon and steelhead running in the Trinity River were sufficient to supply the hatchery with the eggs needed for the propagation of those species from 1890 to 1893. The hatchery was also an experimental station and produced German brown trout, eastern (brook) trout, and hybrid varieties that were introduced into the Trinity River and surrounding streams. These latter fish were exotic species introduced to the river and may have negatively impacted the population of native anadromous fishes through habitat competition. In 1893, hatchery officials noted that salmon and steelhead eggs would have to be brought to Hoopa Valley from the Redwood Creek sub-station west of the reservation because; "The canneries at the mouth of the Klamath River, 65 miles from here[,] are keeping down the supply [of fish] that comes, or used to come up the Trinity and our dependence on that source of supply has become very uncertain on that account."²⁷⁷ Thus, the impact of commercial fishing began to be felt within a few years after the decision handed down in the *Rising Star Tea* case.

In July, 1894, Captain William E. Dougherty, the official in charge of the hatchery at Hoopa, reported to his superiors on the continual decline of salmon in the Trinity River:

I have the honor to report for your information that during the months of August, September, October, November, December, January, February, March, April and May of the last and present year, no salmon of any

Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

²⁷⁷William E. Dougherty, to Marshall McDonald, January 19, 1893, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

account entered the Klamath River from the ocean, and that during the last month a plentiful supply entered the river for the first time since last year. When I first came to this valley, in 1886, salmon were abundant in the Klamath and Trinity nearly every month of the year. Since then the supply has diminished steadily, and during the last four years the falling off in the Klamath has been very great.²⁷⁸

Dougherty was an astute observer and realized that the canneries were not wholly responsible for the declining salmon population. He also blamed the continued sedimentation of the Trinity River from both natural causes such as landslides, and human causes such as mining. Dougherty stated:

Since the establishment of cannery works at the mouth of the Klamath, the rapid diminution [of salmon] has been very apparent, yet I do not think that the catch at the cannery then will account fully for the extraordinary depletion of the supply. There is one other cause, which occurs at irregular intervals . . . the destructive denudation of the precipitous mountain slopes along the water ways which occur at infrequent intervals . . . and which comes at times with such violence that the destruction of all forms of aquatic life in smaller streams and tributaries is inevitable.

²⁷⁸William E. Dougherty, to Marshall McDonald, July 7, 1894, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

[Melting snow and torrents of rain flow] . . . with a velocity, on the highest levels, that is incredible, carrying with it immeasurable quantities of boulders. . . destroy[ing] everything in its path that has life, until the force is expended at the lower levels of the larger streams.²⁷⁹

Dougherty was observing natural landslides and high water flows, but also the results of forty six years of placer mining. The greatest slide directly related to mining activity occurred on the Trinity River several miles above Hoopa Valley in February, 1890. Known as the China Slide because Chinese miners died in the event, this man-caused catastrophe was remembered by Dougherty who witnessed the result:

In February, 1890, . . . sixty miles above this station on the Trinity the side of a mountain about 800 feet in height and nearly a mile and a half in length, slid into the river and stopped the place until the water was backed up for 14 miles. The dam caused by this slide was 350 feet high. In a few hours it broke and a bank of water about sixty feet in height rolled with a speed of more than twenty miles an hour down the Trinity and Klamath to the ocean. It is very certain that all the fry and ova inside the water-shed . . . were destroyed in that flood, and probably great numbers of parent

²⁷⁹William E. Dougherty, to Marshall McDonald, July 7, 1894, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

fish.²⁸⁰

The flood caused by this slide is possibly the same that destroyed the KP&TC cannery at Requa in 1890. Thus, according to Dougherty, the canneries at Requa and the changes in river morphology caused by mining combined to bring about a decline in anadromous fish populations.

The hatchery at Hoopa increasingly relied on eggs procured from area sub-stations at Redwood Creek, Korbelt and elsewhere. In his annual report for 1895, Dougherty complained that the sub-stations were necessary to procure salmon eggs. "Much of the greater number of the salmon and steel-head [sic] eggs were taken at the sub-station [Redwood Creek], there being no run of either kind in the Trinity River this year, all the fish having been taken at the cannery at the mouth of the Klamath River."²⁸¹ The very next year Dougherty again offered his opinion on the declining fish runs: "Since the establishment of the station [Hoopa hatchery] the supply of salmon in the Klamath and Trinity basins has diminished steadily and now it is impossible to procure brood fish from these waters. This is due to the indiscriminate and incessant fishing for the cannery at the mouth of the Klamath."²⁸² Dougherty then went on to suggest that the hatchery at Hoopa should only raise steelhead and non-anadromous trout. Ironically, because the

280 William E. Dougherty, to Marshall McDonald, July 7, 1894, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

281 William E. Dougherty, to Marshall McDonald, June 30, 1895, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

282 William E. Dougherty, to John J. Brice, June 30, 1896, USFWS, Abandoned Stations, Box 3,

canneries were preventing salmon from running, the Hoopa hatchery was in reality producing fish for the canneries and none for the Trinity River.

On June 3, 1898, W.C. Rovmel, an official for the U.S. Commission of Fish and Fisheries, recommended closing the hatchery at Hoopa and nearby sub-stations. Rovmel stated that the operation should be closed because the hatcheries sub-stations were too expensive and isolated, they were now only providing steelhead eggs for shipment elsewhere, and the streams where they were located had no commercial value. After another poor egg harvest at Hoopa, Dougherty agreed with Rovmel's recommendation, as did the Fish Commission. The hatchery at Hoopa closed later that year.²⁸³

Within a few years after the closure of hatchery operations in the region, observers noted that only one major run of salmon occurred in the Trinity River, and that was the fall run.²⁸⁴ The loss of a strong spring run adversely affected the Hupas and other native peoples of the region and further compelled them to alter their traditional economy and cultural practices. In fact, Hupa Indians and their down river neighbors the Karok and Yurok, began traveling to the mouth of the Klamath River in order to procure salmon for subsistence. Thus, native fishing practices were clearly disrupted, and significantly,

File-Fort Gaston-Establishment, National Archives, Washington, D.C.

283W.C. Rovmel, to George M. Bowers, June 3, 1898, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.; William E Dougherty, to George M. Bowers, June 20. 1898, USFWS, Abandoned Stations, Box 3, File-Fort Gaston-Establishment, National Archives, Washington, D.C.

284Lee Davis, "On This Earth: Hupa Land Domains, Images and Ecology on "Deddeh Ninnisan.", 159-160, 171-172.; See also, Pliny Earle Goddard, "Life and Culture of the Hupa," University of California Publications in American Archaeology and Ethnology, vol.1, no.1 (Berkeley: University of California Press, 1903).; and Alfred L.Kroeber and Samuel A. Barrett, "Fishing Among the Indians of Northwest California.",1-210.

so were their ceremonies.²⁸⁵ Nevertheless, the continual decline of salmon and steelhead populations did not bring a halt to the cannery operations at the mouth of the Klamath River until well into the twentieth century. The Hupas had to turn to non-traditional subsistence practices to continue to live in their valley home in a world of resource competition in which they were clearly at a disadvantage.

²⁸⁵Alfred E. Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis: Sacramento State University, 1996." 166.

Chapter 5

Logging, Mining and Irrigation in the Trinity River Basin: 1900-1940

Just after the turn of the twentieth century and until the late 1930s, the Trinity River Basin experienced tremendous change that set it on a path which would see it become much more connected to the outside world. New interest groups emerged and began exerting pressure in the Basin as the region was opened by improved gravel and paved roads. The rise of the automobile allowed sportsmen and women to venture to the mouth of the Klamath where they fished for salmon and steelhead, and they began recognizing the threat to their pastime and started pushing for regulation to curb the harmful effects of mining and logging, and eventually they tried halting traditional Indian fishing practices. While these developments occurred, the lives of the Hupa Indians and other native peoples on Hoopa Valley Reservation (now extending from the mouth of the Klamath to the Hupa "Square"), also began shifting to accommodate change - but the shift was not only a reaction to change, it also was directed by the Hupas and other native peoples who acted to take advantage of the opportunities they saw as the new century dawned. By the late 1930s, the Trinity River Basin was no longer isolated from the rest of California and the world. The lives of the people living there were touched more rapidly than ever by people from outside the Basin, and by events occurring beyond the region. By looking at the Hupa Indians on their reservation and the changes they responded to and their own efforts to better their situation, we can gain an understanding of the larger changes impacting the Basin and the context within which the Hupa acted. By describing logging, mining and irrigation logging in Hoopa Valley undertaken by the Hupa themselves, we can see how the federal government attempted a top-down

imposition of policy upon the Hupa people (a controlled ideal that never became real because the “federal” government is a merely a collection of interests itself), the efforts by the State of California to meet the demands of a varied and evolving interest group landscape, and the proactive steps of the Hupa themselves as they tried to control their own destiny and influence policies directed at them.

The 1887 Dawes Act was an essential factor that must be considered when trying to understand the context within the Hoopa Valley. By briefly describing the Hupa experience with the allotment of the Hoopa Valley Reservation within the “Square” we can better understand why events played out the way they did. In February 1887, Congress passed the Dawes Act providing for the allotment in severalty of Indian Reservation lands, and the public sale of the remaining land as "surplus". The law called for the allotment of land in trust for a period of twenty-five years after which time the individual Indian allottee would be given fee simple title to his or her property and be allowed to manage his or her own affairs. Often a competency test was taken in order to prove one could comprehend the white concepts of money, exchange, and even patriotism. If deemed competent, the allottee could gain fee title to his or her allotment before the 25 year trust period ended. Once a fee patent was issued that patentees could do whatever they wished with their property - even sell it on the open market just like a white person. The original act called for allotting 160 acres to a head of household and each single person over age 18, and any orphan was to receive 80 acres, and any minor children would get 40 acres. Congress hoped the Dawes Act would break traditional tribal ties to the land by fostering the ownership of private property, and by encouraging

Native Americans to become yeoman farmers.²⁸⁶ Dawes Act supporters believed that a program of allotment in severalty would eventually end the federal governments' fiduciary responsibility over Native Americans and elevate them to equal status with white Americans.²⁸⁷ Significantly, many Hupas actually supported and pushed allotment because it fit into their pre-contact tradition of individual ownership of prime resource-gathering areas and fishing rights.²⁸⁸ Moreover, many Hupas were already farming by the time of the Dawes Act and wanted to be sure their labor on a particular piece of land was not wasted. Thus, many Hupas officially requested allotments in writing even before the Congress passed the Dawes Act in 1887.²⁸⁹

Final allotment of Hoopa Valley under the Dawes Act, however, was delayed for several decades, and federal response to the needs of Hupa Indians was slow, confusing and inconsistent. The first survey for allotments began in 1889, the same year the fish hatchery was established on the reservation, but it was not until 1923 that allotment was considered complete. However, many Hupas remained landless after 1923 because of the limited arable land in the valley. Many allottees who received land in the early allotment

286Felix S. Cohen, Handbook of Federal Indian Law, 4th ed. (Washington, D.C.: GPO, 1941), 78-79, 206-233. For the text of the 1887 act, see 24. Stat. 388. For the text of the Indian reorganization Act, consult, 25 U.S.C. 478.

287For an informative discussion of the formulation, implementation and impact of the Dawes Act, see Janet A. McDonnell, The Dispossession of the American Indian: 1887-1934 (Bloomington: Indiana University Press, 1991).

288David Rich Lewis, Neither Wolf Nor Dog: American Indians, Environment, and Agrarian Change (New York: Oxford University Press, 1994), 97-98; Byron Nelson Jr., Our Home Forever, 121-122.

289William Dougherty, to Commissioner of Indian Affairs, July 16, 1886, RG 75, Bureau of Indian Affairs, Letters Received, 1881-1907, Letter 20398-1886, National Archives, Washington, D.C.

attempts of 1889 and 1918 had died and their land had passed to their heirs. Also, the population of the valley grew over time because Hupas were having families and their children were entitled to allotments under the act. While the Dawes Act envisioned large, 160 acre arable farms, that proved unrealistic in Hoopa Valley. The valley had only 500-700 acres of arable land, and perhaps as many as 1600 if irrigation water could be brought to the area. But all the Hupas wanted allotments that bordered along the Trinity River to allow them access to fishing - their traditional subsistence, and for daily sweats and baths (religiously significant and for good health). They wanted to ensure that the property they already owned, such as fishing sites, acorn grounds, root and seed gathering areas, and basket grass gathering areas would remain in their rightful owner's possession. All these issues, population increase and the passing of elderly allottees, a lack of arable land, and the desire to maintain traditional ownership patterns, created a dilemma for the agents in charge, the numerous surveyors and allotment schedule compilers, and the Hupa themselves. There was not enough land to meet their needs and the Dawes Act just could not be made to fit the Hoopa Valley physical reality and the Hupa people's demands for protection of property and access to the River. The allotment problem was overcome by giving each allottee a strip of land that bordered the bank of the Trinity, but some for only a few hundred feet, and then moving away from the river in perpendicular strips of land so that most allottees were given four acre allotments. The remainder was to be made up in "grazing" allotments - land in the mountains intended for raising livestock. Later allottees did not get as much on the river, or more commonly, no river front, and often found themselves located away from the river but with arable lands. Many Hupas got nothing at all. The final 1923 allotment schedule resulted in a

haphazard pattern of ownership that made the prospect of successfully dry-farming wheat or spring feeding truck gardens from seeps emerging from the mountains unlikely. By 1934, the federal government suspended any further allotments in Hoopa Valley and on all reservations under the 1934 Indian Reorganization Act.²⁹⁰ However, the incomplete and tardy allotment effort that began in 1889 and ended in 1923 hung over the heads of the Hupas and made it difficult for them and the agents in charge of the reservation to move forward with any viable economic plan for the Hupa people. During the period addressed in this chapter, the Hupas participated in, or initiated on their own, three types of non-traditional economic activities to survive in their new world: logging, mining irrigation.

Prior to the advent of a federally-directed forestry programs in the early twentieth century, loggers pushed trails and roads into forested areas, crossing streams where convenient with no thought to engineering to avoid damaging rivers and streams, and causing erosion.²⁹¹ The irony about logging and its potential to destroy the fisheries upon which native people relied is that in the early twentieth centuries, Hupas (to their credit) turned to logging the trees on their own reservation and of their own initiative as a way to earn cash which was not the preferred medium of exchange. This endeavor allowed them to continue living in the valley rather than leaving to work far away in the mines, coastal

²⁹⁰David Rich Lewis, Neither Wolf Nor Dog, 99-104; Byron Nelson Jr., Our Home Forever, 130-131, 133, 149-158, 163-164, 195-197.

²⁹¹There are numerous studies of the erosion and sedimentation problems caused by logging in the Trinity River Basin. Among the earliest are: Grass Valley Creek Siltation, California Department of Fish and Game. Region 1, Redding, California, 1963; M. Coots, The Effects of Erosion and Sedimentation on the Fishery of the Grass Valley Creek and the Trinity River, Trinity County, California. California Department of Fish and Game. Region 1., Redding, California, 1967.

logging camps and salmon canaries on the lower Klamath River and elsewhere. In 1892 Camp Gaston was abandoned by the U.S. Army destroying the most important local market for Hupa-grown produce, and by 1898, their fish hatchery was abandoned because of a lack of salmon. The Hupa themselves controlled the first effort to log in Hoopa Valley, and the federal government later came in to direct the cutting of trees under the principal of sustained yield, but the federally-directed logging program in the valley (1930s-1980s) is mostly outside of the chronological boundaries of this study and will receive little attention here.

Ironically, for Native Americans, logging cut both ways. It provided opportunities for participation in the market economy as wage laborers, and to some extent, sawmill operators, but it also injured the anadromous fishery making it increasingly difficult for Native peoples to continue their traditional relationship with the Trinity River. The BIA encouraged Indians to drop their fishing nets and pick up the axe in its effort to reorient native peoples away from traditional subsistence practices, and to economic endeavors more in line with Euroamerican life ways.

The market for lumber produced in the Humboldt Bay region was first local, but within twenty years of its inception, lumber companies were shipping wood nationally and internationally. The location of mills on the Humboldt Bay and coastal rivers allowed producers to ship their products to world markets.²⁹² By the 1880s the *Humboldt Standard* reported that “San Francisco was formerly the main stay of the lumber men of Humboldt; now they scarcely take it into account.” By that date, the eastern United

²⁹²Coy, The Humboldt Bay Region, 267-270.

States and Australia had become the main destination of Humboldt County redwood.

“The mass of redwood must reach the markets of the world through the gates of Eureka.”²⁹³ Markets continued to expand for redwood, and by the turn of the twentieth century the *San Francisco Chronicle* reported that the mills at Arcata (formerly Union Town) alone were producing an average of 400,000 board feet daily and shipping their products as far away as Hawaii and the Philippines.²⁹⁴

Thus, even before the twentieth century the Humboldt Bay region was producing redwood and other types of lumber for global markets. The explosive growth in lumber production and a growing market helped push the expansion of the lumber industry inland from the Humboldt Bay. As the lumber industry around Humboldt Bay expanded, lumber companies cut stands of redwood, Port Orford Cedar, Douglas Fir, Tanbark Oak (an important food source for Indian peoples), and numerous species of pine. Moving inland only exacerbated the problem of transporting saw logs to mills for processing. Railroad logging allowed logging companies to move farther inland, but river transportation was cheaper and so where available, rivers were preferred to help increase profit margins in a highly competitive business. The Klamath River, of which the Trinity River is a major tributary, was viewed by logging companies as an almost ideal water highway for moving saw logs. The lower Klamath River was suited for moving logs because it is navigable for almost forty miles inland from its mouth, and it empties

²⁹³Humboldt Standard, 12-31-1883, 1:1.

²⁹⁴San Francisco Chronicle, 8-29-1903, 7:5. With new technologies and methods applied to logging and milling practices, the lumber industry along the coast and near Humboldt Bay continued to grow during the early twentieth century. After a slow-down during the Great Depression and during World War II, the industry rebounded and grew tremendously to become the backbone of the Humboldt Bay

directly into the Pacific Ocean providing relatively easy access to the Pacific Rim and international markets. Because the Trinity River is a tributary to the Klamath River, the logging on the lower Klamath, if it harmed the fishery there, had an impact on the fishery of the Trinity River Basin. The lower Klamath, in a sense, was the bottle neck for the entire Trinity Basin.

We have already looked at the logging operations of R.D. Hume in the 1880s who logged as a sideline to his salmon canning business at the mouth of the Klamath. His schooners could be kept busy all year moving either canned or salted salmon, during the spring and fall runs, or towing rafts of sawed logs and lumber during other times of the years.²⁹⁵ Other logging and milling operations on the lower Klamath River operated in the late nineteenth century, but the river was not the scene of large-scale industrial logging until the first decades of the twentieth century. Part of the reason that industrial logging arrived late on the lower Klamath River was the shifting shoals and sand bar at the mouth of the river. Natural obstructions at the mouth of the Klamath made it difficult to enter and exit the river, causing frequent problems for loggers attempting to get their log rafts to sea.²⁹⁶ Of even greater significance in explaining the retarded development of

economy well into the 1970s.

²⁹⁵Records do not indicate why Hume failed in his attempt to operate a sawmill on the Klamath. Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 273. Hume's canning operation was located near the Klamath estuary, and it is assumed that the sawmill was close-by. The sand bar at the mouth of the Klamath probably necessitated the use of small schooners to ship sawed lumber across the bar and north to Crescent City for transshipment.

²⁹⁶Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 275-277.

logging on the lower Klamath, however, was the uncertain status of land ownership on the banks of the river. In 1855, the federal government created a reservation for the Yurok Indians on the lower Klamath running from the mouth of the river twenty miles inland, and encompassing one mile on each side of the river. The BIA ran the Klamath Reservation until 1862 when a flood destroyed the agency buildings, gardens, and storehouses. The government never rebuilt the agency, but instead concentrated its efforts on the Hoopa Valley Reservation on the Trinity River and essentially abandoned the Yurok along the lower Klamath to fend for themselves. Whites, like Hume, increasingly encroached upon the former Klamath Reservation. The federal government, however, never formally abandoned the Klamath Reservation. Under pressure by lumber companies and white settlers who wanted the federal government to determine the status of the 1855 Reservation, the federal government argued that the area was Indian Country.²⁹⁷ In order to settle all questions about title once and for all, on October 16, 1891, President Benjamin Harrison signed an executive order extending the Hoopa Valley Reservation from the northern boundary of the Hoopa Valley Reservation at the confluence of the Trinity and Klamath Rivers at Weitchpec to the mouth of the Klamath River, and for one mile on each side of the Klamath.²⁹⁸ After that date, the original

²⁹⁷The federal government was hampered in its assertion by the unfavorable ruling in the 1888 Rising Star Tea case. The best discussions of the events surrounding the land controversy on the lower Klamath River can be found in, Alfred E. Holland, Jr., "William E. Dougherty and Salmon Fishing on the Klamath River, 1886 - 1898." MA Thesis: Sacramento State University, 1996., 152-161.

²⁹⁸Executive Orders Relating to Indian Reservations: Volume 1, May 14, 1855 to July 1, 1912 (Wilmington, DE: Scholarly Resources, 1975). The Executive Order set aside the land that encompasses the present Hoopa Valley Reservation. The order created what is now called the Extension (comprising the original Klamath Reservation) and a twenty mile "Connecting Strip" between the 12 mile square of the original Hoopa Valley Reservation and the extension.

reservation encompassing the Hoopa Valley was known as the “Square” while the original Klamath Reservation on the lower Klamath was thereafter referred to as the “Extension,” and the twenty miles between the two came to be known as the “Connecting Strip”.



Logging scene on the upper-Klamath River. Although not at the mouth of the river, the same techniques were used there to float logs to mills for process. This method of moving saw logs could spoilt spawning habitat and cause erosion. Patterson photo postcard. ca. 1920s. Authors' personal collection.

The rationale behind adding land to the Hoopa Valley Reservation was access to the resources on the land. Since the 1887 passage of the General Allotment act, the federal government had been trying to allot land to individual Indians on many reservations throughout the United States. On the lower Klamath, allotment was seen as a way to finalize the ownership status of the timberlands along the river's banks. If ownership could be determined, and there was little doubt it was Indian Country after Harrison's Executive Order, the land could then be allotted to individual Yurok and the

remainder thrown open to settlement and the resources thereon released to the market. The California Congressional delegation had been pushing for the opening of the lower Klamath, and Harrison's action was favorably received by them. Eventually the BIA assigned allotments to the Yurok living along the river and allowed the surplus land to be sold. As for trees on allotments themselves, from the 1890s until World War I, the Indian owners were only allowed to cut trees as a way to clear land for agricultural purposes. However, many leased their allotments to logging companies wanting to cut trees, but more often, logging companies just trespassed on Indian allotments in clear violation of regulations set forth by the BIA and cut trees without compensating the Indian owners. The Agent at Hoopa Valley could do little to stop illegal logging considering that his headquarters was forty river miles from the scene and had no support from law enforcement.²⁹⁹ After World War I, the BIA issued new rules and guidelines for leasing lands allotted to Indians and un-allotted Indian land still held in trust by the United States, and also new rules for selling "surplus" reservation lands to outside interests. Once the guidelines were laid-out, logging on the lower Klamath commenced in earnest because there was no less confusion as to the method whereby an interested outside party might gain access to Indian timber on allotted and un-allotted lands.³⁰⁰

After World War I, logging on the lower Klamath accelerated. The Bull and Dunn

²⁹⁹Trespasses on Yurok timber land was the most pressing problem faced by the Indians of the lower Klamath during this period. See W.T. Roberts, et. al., Indian Land and Forest Resources: An Issue of Trust: A Forest History of Hoopa Valley Indian Reservation of Northwestern California (United States Department of the Interior, Bureau of Indian Affairs, Sacramento, California, 1983), 26.

³⁰⁰Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 175-216. For a discussion of the allotment of the "Extension" and

Cedar Company began cutting along Klamath Bluffs and floating cedar logs down river to the Klamath estuary where they were formed into rafts and towed down the coast to Eureka for milling.³⁰¹ Other logging companies also began cutting along the Klamath after the war, and logging continued to be strong until the late 1930s when the industry on the Klamath River virtually shutdown because of the Great Depression.³⁰²

It is within the context of the development of logging on the coast and along the Klamath River that we must understand the significance of logging in the Trinity River Basin and Hoopa Valley. Logging and saw milling in the Basin was not conducted on an industrial scale until after World War II because the Trinity River Basin was isolated, the rivers non-navigable, and good timber was easily accessible nearer the coast. Thus, we will look at less industrial logging, particularly on the Hoopa Valley Reservation “Square” to understand the development of logging during this era in the Basin.³⁰³

The Trinity River region is cut-off from the coast and the Central Valley by

“Connecting Strip” see pp. 217-234.

301 Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 274-275.

302 Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 278-297. In 1947, the harvest in Del Norte County was 23,000,000 board feet; by 1953, the harvest jumped to almost 290,000,000. The Klamath River lumber industry continued to grow throughout the 1960s and 1970s. The industry began to slump in 1980. The annual board-foot harvests from Del Norte County fluctuated little between 1953 and 1979, and then dropped to 179,000,000 in 1980. See Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 279, Appendix B. See also, Lynn Huntsinger, et. al., A Yurok Forest History, United States Department of the Interior, Bureau of Indian Affairs, Sacramento, California, 1994.

303 Geoscientific Systems and Consulting, Overview of the Cultural Historic Resources, 106-109.

rugged mountains, and the river itself was almost useless for log-drives except for periods of extreme high water. The Basin lacked good roads well into the twentieth century making transportation of logs prohibitively expensive. All of these factors combined to retard the growth of industrial logging in the Trinity River Basin. As a result, the lumber industry in the interior was different from the coastal lumber industry in that it produced lumber for local consumption.³⁰⁴ A good example of this phenomenon is seen by looking back at very early logging near Hoopa Valley. On Willow Creek, south of Hoopa Valley, a sawmill was in operation during the 1860s and 1870s. Willow Creek was located on a major trail leading from the coast to the Trinity River mines, and was up-river from Hoopa Valley. When the army first set-up a post in Hoopa Valley in 1858, they built a sawmill to provide wood for the fort. After the creation of the Hoopa Valley Reservation in 1864, the federal government needed sawed lumber to erect buildings for its agency in the Valley, and the Army, which still needed lumber for barracks and headquarters. The government-owned sawmill in Hoopa Valley (purchased derelict from the valley's white settlers) was poorly maintained and operated sporadically. In fact, because the mill in Hoopa Valley was seldom in operation, the government had to look off-reservation for sawed lumber.³⁰⁵

³⁰⁴The Trinity River Basin is surrounded by the rugged Klamath Mountains, the Trinity Mountains and the Coast Range making access difficult. Where lumber was easily accessible, it was quickly exploited. For example, a sizable lumber industry developed in northern California centered on the Shasta River Valley, the McCloud River Valley, the Fall River Valley, and on the Sacramento River near Mt. Shasta. See: Geoscientific Systems and Consulting, Overview of the Cultural Historic Resources, 109.

³⁰⁵The mill was continually in disrepair. In 1870, the agent at Hoopa Valley reported that the sawmill was inoperative. In 1880, the sawmill was reported in working condition, but in 1887, the agent at Hoopa Valley again reported that the sawmill was dilapidated and useless. See: "Report to the Secretary of the Interior," Executive Documents: The House of Representatives, Third Session, Forty-First Congress, 1871-1872 (Washington, D.C.: Government Printing Office, 1872), 547. See also, "Report to the Secretary

In relation to the construction of a headquarters building for Fort Gaston the United States Army paid Hupa Indians to move lumber down the Trinity River to the Agency from a mill at Willow Creek. During July, 1869, the commander at Fort Gaston, Major Henry Mizner, requested funding for the services of Hupa Indians to float sawed lumber eleven miles down the Trinity River from the sawmill at Willow Creek to Fort Gaston. Mizner stated that Indians could move lumber down the river using redwood canoes, and that the Hupa were the only people familiar enough with the river to do the job without getting killed by the rapid current and treacherous rocks. Mizner described the Trinity River as “a rapid, rocky, treacherous stream. . .” and that to move lumber would “require the services of Indian boatmen familiar with the river.”³⁰⁶ Mizner paid the Hupas as loggers and boatmen which is the first documented instance of Hupa being employed to exploit timber. The effort to secure lumber for the construction of Fort Gaston not wholly a success, and the next year Mizner reported that the difficulty in obtaining lumber for the fort meant that construction had to wait until the next rainy season (possibly because the rains would raise the water level in the Trinity making it easier to float lumber).³⁰⁷ By spring 1871, Mizner was again buying sawed lumber from

of the Interior,” Executive Documents: The House of Representatives, Second Session, Forty-Ninth Congress, 1886-87 (Washington, D.C.: Government Printing Office, 1887), 260. For information on the Hoopa Valley Sawmill in 1880 Annual Report of the Commissioner of Indian Affairs to the Secretary of the Interior for the Year 1880 (Washington, D.C.: Government Printing Office, 1880), 7-8. By 1896, the government-owned mill in Hoopa Valley was operating, producing 245,000 feet of lumber annually. See “Report to the Secretary of the Interior,” Executive Documents: The House of Representatives, Second Session, Fifty-Fourth Congress, 1895-1896 (Washington, D.C: Government Printing Office, 1896), 125.

306 Major Henry Mizner to Bvt. Colonel I.P. Sherburne, Assistant Adjutant General., July 19, 1869. Record Group 393. Records of the United States Army Continental Commands, 1821-1920. Fort Gaston, California, Entry 137. Letters Sent. Volume 3, Entry 137.

307 Major Henry Mizner to Samuel Major, Assistant Adjutant General., October 1, 1870. Record Group 393. Records of the United States Army Continental Commands, 1821-1920. Fort Gaston,

the Willow Creek Mill, but he assigned soldiers to extra duty to retrieve the wood instead of Hupas, and they moved the sawed lumber overland to the post.³⁰⁸

Thus, the few references addressing logging operations in the Trinity River Basin in the nineteenth-century which we have seen earlier in this study, are confirmed by the early experiences of the Hupas - cutting trees and milling lumber were undertaken primarily to supply local markets. Well into the twentieth century the lumber industry was simply not a major economic factor in the region. Unlike along the coast, lumbermen in the Trinity Basin erected sawmills wherever they were needed, cut trees intensely until either the trees became scarce, or demand for their product fell with the decline of mining or needs for building - they then moved on.³⁰⁹

By the late nineteenth century, many Americans became concerned that the forests of the nation were rapidly falling to the saw and that a resource once viewed as inexhaustible was being rapidly depleted.³¹⁰ The concern over the possible demise of American forests prompted the federal government to move to protect forests from over-

California, Entry 2. Letters Sent. Volume 4, Entry 212.

308A.D. Nelson to Assistant Adjutant General., May 22, 1871. Record Group 393. Records of the United States Army Continental Commands, 1821-1920. Fort Gaston, California, Entry 2. Letters Sent. Volume 4, Entry 79. No other instance of using the Trinity River to float logs or lumber has been found in the records consulted.

309Geoscientific Systems and Consulting, Overview of Cultural Historic Resources, 118. After the Trinity Forest Reserve was created by Presidential Proclamation in 1905, it was noted that mining and stock raising were the chief industries in the region, and that only a few sawmills were operating and those were on private land.

310The Progressive Era of the late-nineteenth century was a period when many influential politicians, industrialists, social reformers, and many educated middle class Americans in the United States began to question the wisdom of laissez faire capitalism. In the area of resource exploitation, progressives feared that the unguided and unchecked cutting of America's forests would destroy the resource forever, thus the federal government should step forward to protect the resource for the future. For example, see: "Destruction of Forests of the United States." S. Misc. Doc. 51, 1st Sess. 55th Cong.

exploitation, and to reserve them as a national resource. In 1891, while Congress was passing the General Land Law Revision Act to repeal various land laws, including all preemption laws and the Timber Culture Act of 1873, Secretary of the Interior John Noble managed to have a rider inserted into the bill authorizing the President to withdraw forest lands from the public domain and set them aside as forest reserves.³¹¹ Also known as the Forest Reserve Act, it was a unique departure from the preceding public land laws because it was aimed at protecting public land from overuse, rather than promoting the cheap disposal of public lands. After Congress passed the Forest Reserve Act, President Harrison withdrew millions of acres from the public domain and set them aside as forest reserves, but the provision of the act giving the President the power to create the reserves did not appropriate funds for managing the reserves, nor create an agency to do so. The forest reserves initially created were placed under the authority of the Department of the Interior. In 1897, Congress passed a law providing for the management of the reserves, the Forest Reserve Organic Administration Act, which included a provision allowing for harvesting timber from the forests.³¹²

During the activist presidency of Theodore Roosevelt, vast tracts of forest lands were set aside.³¹³ During Roosevelt's second administration, he set aside the Trinity Forest Reserve on April 26, 1905, the same year that Congress passed the Transfer Act

³¹¹26 Stat. 1095.

³¹²30 Stat. 11.

³¹³By 1893, President Benjamin Harrison reserved approximately 17.5 million acres of forest land. Under McKinley the total amount withdrawn grew to over 35 million acres. Roosevelt set aside approximately 95 million additional acres of forest land from 1901-1907. E. Louise Peffer, The Closing of the Public Domain: Disposal and Reservation Policies, 1900-1950 (New York: Arno Press, 1972), 17.

moving the administrative responsibility of the reserves from the Department of the Interior to the Department of Agriculture.³¹⁴ In 1907, the term “National Forest” was applied to all forest reserves to emphasize that forests were owned by the American people, and rather than being “preserved” were instead to be scientifically managed by the federal government for the good of the nation. To manage the forest reserves, Roosevelt created the United States Forest Service as an agency within the Department of Agriculture to, among other things, promote and regulate logging within national forests. The Forest Service also was charged with regulating water use, grazing, agriculture, transportation, recreation and settlement within the boundaries of the forest reserves. By 1912, the Forest Service began to encourage logging companies to cut forests in previously undeveloped areas by offering them timber parcels on a twenty-year lease basis. The goal of this policy was to encourage lumber companies to build roads and railways for the long-term systematic exploitation of timber resources.³¹⁵

These developments did not result in the widespread exploitation of the forests in the Trinity River Basin simply because there were no major existing roads accessing the Basin and building them was prohibitively expensive while there were still valuable

³¹⁴Christine Savage, Six Rivers National Forest: A Contextual Cultural Resources Chronology of Events on or Near Forest Lands, 26. The Trinity Forest Reserve did not include the Hoopa Valley Reservation. However, on March 2, 1909, President Theodore Roosevelt proclaimed that the Trinity National Forest included lands within the Hoopa Valley Reservation not allotted to Native Americans. This decision was not reversed until February 17, 1912 when President Taft restored the Hoopa Reservation to the status it held prior to the 1909 proclamation. See: Byron Nelson Jr., Our Home Forever, 151.

³¹⁵Savage, Six Rivers National Forest, 30.

stands of timber outside of the Basin.³¹⁶ By the mid 1920s, however, the federal government encouraged road building by distributing funds for road construction to the states through numerous highway acts. Using federal monies, the State of California completed the first improved gravel road along the Trinity River. The road ran from the town of Redding in the Central Valley, west over French Gulch and down into the Trinity River Basin. The road then followed the Trinity River to Willow Creek, south of the Hoopa Valley Reservation. At Willow Creek, the road left the Trinity River and cut overland to the west until it connected with existing roadway near the coast and Humboldt Bay.³¹⁷ Thus, by the 1920 the Trinity River watershed was linked to the outside world and was accessible by trucks from the coast and the Central Valley. Even though logging companies could now access the timber reserves in the Trinity River Basin, transporting wood products from that still remote region was cost prohibitive because there were still many forests closer to existing markets. There was no incentive to cut for distant markets.³¹⁸

The Hupa Indians participated in the local lumber industry because of the large

³¹⁶Geoscientific Systems and Consulting, Overview of the Cultural Historic Resources, 120-123. In 1947, the Six Rivers National Forests was created out of portions of the Siskiyou, Trinity and Klamath National Forests, and in 1954 the administration of the Trinity and Shasta National Forests were combined for economy of administration, yet they remain two separate entities.

³¹⁷The road was not actually paved until the 1930s during the Great Depression when the state of California improved and re-routed the road through the county seat of Weaverville, and designated it California State Highway 299. It was during the re-routing and improvement of Highway 299 that the State of California ran Highway 299 through Weaverville and west through the Le Grange hydraulic mine using hydraulic mining methods and dumping thousands of yards of debris into the Trinity River. Also during the Depression, Indian laborers working on projects directed by the Indian Division of the Civilian Conservation Corps (CCC-ID) built a road along the Trinity River in Hoopa Valley, and built roads throughout the forests of the reservation for fire suppression and to access timber for logging.

³¹⁸Savage, Six Rivers National Forest, 41.

stands of virgin timber available on their reservation.³¹⁹ Ever since the creation of the reservation in 1864, the federal government searched for a way to break the Hupas' traditional economy in order to make them into economically "viable" Americans. The 1887 Dawes Act was put into effect on the Hoopa "Square" in the hopes of creating farmers from Indians, and possibly lumberjacks if possible. The final allotment of the Hoopa Square was delayed until the 1920s for reasons enumerated above. The federal government clearly recognized the potential source of income held in the trees on the reservation in the early twentieth century, but also recognized that a lack of roads leading to outside markets, limited local demand, and limited funding from the BIA meant that even if they wanted to force a logging industry onto the Hupas, there was really no way to make money from the trees, or put the Hupas to work as lumberjacks and sawyers. Moreover, the Hupas, and neighboring Indian groups, were reluctant to cut one tree species in particular, the Tanbark Oak, a tree valuable for its bark used for tanning leather, because it provided acorns for food and ceremonial purposes, and feed for livestock. For the time being, the trees on the Square remained where they were with limited cutting and sawing done at the government-owned mill for the use of the Hupas and the BIA.³²⁰ Agents on the reservation recognized that a commercially viable lumber

319Lewis, Neither Wolf Nor Dog, 115. On February 16, 1889, Congress authorized the President to allow Indians to sell dead timber from Indian reservation. See: Savage, Six Rivers National Forest, 23.

320Nelson, Jr., Our Home Forever, 151-152. By the turn of the twentieth century the mill was back in operation and was producing 245,000 board feet annually. The lumber was used by the Hupas to construct reservation housing and a day and boarding school, and agency buildings. "Report to the Secretary of the Interior," Executive Documents: The House of Representatives, Second Session, Fifty-Fourth Congress, 1895-1896 (Washington, D.C: Government Printing Office, 1896), 125. The government-owned mill, however, was not a commercial operation, but rather, was operated to provide for the needs of the reservation. The mill was powered by water from Supply Creek, and was in operation off and on until it was destroyed by fire in 1918, and it was never rebuilt. W.T. Roberts, et. al., Indian Land and Forest

operation would allow the Hupa people to participate in the marketplace, earn money, and lift them out of poverty, yet there was no specific national policy outlined by the Bureau of Indian Affairs regarding the sale of timber from Indian reservations until late in the nineteenth century, and when it came, it did little to help the Hupa people who remained isolated from markets by rugged mountains, and a lack of roads.



Workers for the State of California use the idle equipment of the La Grange Hydraulic Mine to blast the right-of-way for State Highway 299 from Weaverville west over Oregon Mountain towards the Trinity River canyon ca. 1934. It took several years for California to complete the road through the La Grange mine, and in the process, the State added thousands of tons of debris to the Trinity River. Today, this monitor sits by the side of the road in the former La Grange mine as an historic marker. Unknown photographer. Postcard. Authors' personal collection.

Federal policy for allowing the commercial sale of Indian timber developed in a

Resources: An Issue of Trust: A Forest History of Hoopa Valley Indian Reservation of Northwestern California (United States Department of the Interior, Bureau of Indian Affairs, Sacramento, California,

piecemeal fashion and in many ways was similar to the development of policy on public lands. Timber on reservations was assumed to be part of the realty with ultimate title vested in the United States, although Indian tribes were permitted to use the timber because they held the right of occupancy. During the late nineteenth century, contracts for cutting tribal timber were often made by agents on reservations with white-owned logging companies, but the legality of allowing tribally-owned timber lands to be cut was questionable. In 1889, however, Congress passed an act allowing for the cutting of dead and fallen timber on Indian lands.³²¹

Various court rulings muddled the efforts by Indian tribes to cut live timber on their lands, and abuses of fallen timber contracts led to the complete suspension of all timber harvesting on Indian reservations in 1899 and 1900.³²² The abuses of Indian-owned forests by unscrupulous logging companies pointed out that a major problem for tribes wishing to sell the timber on their reservations was who would oversee tribal timber operations. Was the Bureau of Indian Affairs to oversee reservation timber and the Forest Service all timber outside of reservations? In 1902, contracts for cutting Indian timber resumed, and from 1902 to 1909 the Bureau of Forestry (later the Forest Service) sought to assume the supervision of Indian timber sales believing it possessed the expertise lacking in the BIA, and that it was sensible that all forests, regardless if they

1983), 144-145.

32125 Stat. 673.

322Jay P. Kinney, Indian Forest and Range: A History of the Administration and Conservation of the Redman's Heritage (Washington, D.C.: Forestry Enterprises, 1950), 45-62, 116-117. For discussion of the numerous cases and legislation addressing Indian Timber, consult Felix Cohen, Handbook of Federal Indian Law with Reference Tables and Index (Washington D.C: Government Printing Office, 1942), 78, 191, 220, 223, 314, 329, 337.

were Indian-owned or not, should be managed by one agency.³²³ In 1906 an agreement was struck between the BIA and the Forest Service whereby contracts for cutting on Indian lands would be administered by the Forest Service and the actual logging operations supervised by that agency as well. In 1909 President Roosevelt issued an Executive Order placing all forests on Indian reservations under the administration of the Forest Service. At the same time Congress passed an act providing funds for the creation of a forestry division in the Bureau of Indian Affairs, and a year later passed another act authorizing the cutting of timber on allotted and un-allotted Indian land, both dead and live timber, and outlining the procedure for cutting Indian timber that would conserve that resource.³²⁴ In 1911, the BIA issued regulations for cutting timber on Indian lands, including standards for selecting which trees to cut, the sale of timber, and administering agency sawmills.³²⁵ The following year, in 1912, President William H. Taft issued an Executive Order returning Indian forest lands to the administration of the BIA by executive order in 1912.³²⁶

While the Secretary of the Interior worked out regulations and administrative authority for timber harvesting on Indian lands, the trees within Hoopa Valley remained standing. The main obstacle to the development of commercial logging in Hoopa Valley was the same as that facing loggers throughout the Trinity River Basin; limited access to

323Kinney, Indian Forest and Range, 51-56, 219.

324See 35 Stat. 781, and 36 Stat. 857.

325W.T. Roberts, et. al., Indian Land and Forest Resources, 26.

326W.T. Roberts, et. al., Indian Land and Forest Resources, 25.

outside markets, and a small local market. The agents on the reservation recognized the potential economic benefits that lay within the trees of the valley, but only if the Hupas had access to outside markets.³²⁷ Thus, while logging on Indian lands on the lower Klamath proceeded during the first half of the 20th century where access to markets was cheap, commercial harvesting did not take place in the square of the Hoopa Valley along the Trinity River.³²⁸

Between 1910 and the 1930s, most forestry activity within Hoopa Valley related to fire suppression. Fires were common and agents continually complained that the Hupas intentionally set the fires to provide themselves with jobs and entertainment. The reality was that many Hupas were chronically underemployed, and in many cases, destitute and so adapted their situation to a new reality - they were paid to put out fires - why not set a few, put them out, and get paid? It was practical, it worked, and it infuriated the agents and the forestry manager in the valley.³²⁹ Setting fires had a cultural component as ancient as the Hupa culture itself - fire promoted the growth of grasses used for making baskets, clearing dangerous underbrush the could result in high-

327W.T. Roberts, et. al., Indian Land and Forest Resources, 143.

328Because of the history of the formation of the Hoopa Valley Reservation, and the fact that two reservations for two tribes were combined to form a single reservation, records addressing timber sales are confused. Agents in Hoopa Valley were responsible for managing forests on Yurok allotments on the lower Klamath River, as well as, timber reserves on Hupa lands. This resulted in a lack of sufficient oversight on Yurok allotments; and numerous illegal trespasses. The reservation encompasses the lands of two different tribes, and the administrative records of the location of forestry activity are often confused. A reference showing timber sales on allotments on Hoopa Valley Reservation may actually be referring to allotments on the lower Klamath River in Yurok territory on the former Klamath Reservation. Other references of the same date, however, might indicate that logging was not an important activity on the reservation. In the latter case, the reference is to the Square of the original Hoopa Valley Reservation. For example, see W.T. Roberts, et. al., Indian Land and Forest Resources, 143-150.

329W.T. Roberts, et. al., Indian Land and Forest Resources, 151.

temperature, and highly destructive crown fires, and also cleared trails to promote the movement of people and the game they hunted. Simply put, the Hupas were doing what they always had done, and the whites came to them and tried to impose their view about what fire was, and what was valuable, upon the Hupa. To whites, fire destroyed large, valuable trees. To the Hupas, fire built good grass, encouraged game to browse and eased travel, aided the hunter, encouraged the spread of acorn (oak trees) and protected against damaging crown fires by clearing young trees and dried wood (trash and fuel). The Hupas were well advanced in their understanding of forest management before the whites first laid eyes upon Hoopa Valley, and this conflict over fire is another example of the struggle over how to use resources. Moreover, the delay in allotment of the Hoopa Valley Square meant that the Hupas were reluctant to labor on a piece of ground they might never gain control of, and thus, there was simply not enough arable land to go around. The agents recognized that lack of economic opportunities and the delays in allotment compelled Hupas to start fires for employment. The federal response was to institute an active fire suppression program that called for the construction of lookout towers, the building of access roads into the forests to provide quick response to fight fires, and to apprehend and convict those Hupas who were responsible for setting fires. Funding for the fire suppression program was limited, however, and did not stop the Hupa from burning in Hoopa Valley.³³⁰ Nevertheless, between 1910 and 1930, several roads, telephone lines, and lookout posts were built on the reservation to aid in fire suppression to protect the Hupa's timber reserves. These activities helped pave the way

330W.T. Roberts, et. al., Indian Land and Forest Resources, 140, 145.

for future logging in the valley.

While the federal government haphazardly managed the forestry resources of the Hupa Indians, a Hupa Indian named David Risling, Sr., started the first commercial logging operation in Hoopa Valley. Risling began running his water-driven sawmill on Hostler Creek in 1927. The market for Risling's lumber was in Hoopa Valley, and limited areas off-reservation. Risling cut tribally-owned timber within the valley on a small scale. The number of trees cut by Risling is not known, but the revenue collected by tribe from him during his first ten years of operation was apparently small: in 1938 the Hoopa Business Council requested that stumpage fees charged to Risling be waived and that Risling provide tribal members with lumber in lieu of cash payments. Risling's operation was the only commercial operation in Hoopa Valley prior to World War II. Risling employed Hupas as lumberjacks and sawyers, and also cut timber brought to his mill by other tribal members. An Indian logger, therefore, was the first, albeit small-scale, commercial logger in Hoopa Valley.³³¹

The Great Depression dampened the national demand for lumber and slowed the development of a logging economy in Hoopa Valley. During the Depression, Indian logging in Hoopa Valley continued. In fact, David Risling, Sr., expanded his operation and applied for and received additional timber-cutting permits for the Hoopa Valley, and for cutting trees down-river on the Hoopa Extension in Yurok territory. Using newly improved roads, Risling's employees could bring timber from distant places to his mill in

³³¹There is some confusion on the location of the Risling Mill in the sources consulted. It was possibly located on Supply Creek rather than Hostler Creek. See W.T. Roberts, et. al., Indian Land and Forest Resources, 140, 169-172, 174.

Hoopa Valley where sawyers turned it into lumber. Yet, the Depression witnessed a significant change in federal Indian policy after Franklin Roosevelt named John Collier as Commissioner of Indian Affairs. Under the 1934 Indian Reorganization Act the allotment of Indian lands stopped and tribes were encouraged to tribal governments and business councils, they could decide whether they wanted a tribal constitution, and they were encouraged to scientifically manage and exploit the timber resources on tribal lands using the theory of sustained yield: the practice of managing timber resources sustaining a balance between the number of trees harvested and the rate of forest growth with the goal of never running out of trees to cut in a specific region.

The lack of market access for Hupa timber was ended by the federal government's policies during the 1930s, which initiated the opening of Hoopa Valley to world timber markets. Under the Indian Reorganization Act, the Hupa organized a business council, and began to actively participate in the decisions regarding the forests of Hoopa Valley. The Hupa Business Council also began authorizing the sale of downed timber to off-reservation logging companies during the late-1930s, and expressed interest in buying a portable mill for the use of tribal members, although that never materialized. The Hupa benefitted from New Deal relief programs. The programs of the Civilian Conservation Corps were extended to Indian tribes. At Hoopa, this meant that for the first time in their lives many Hupa would have jobs and earn wages. The forestry division ran the CCC-ID programs on Hoopa Valley. Under the Indian Division of the CCC, hundreds of Hupas found employment.³³² The projects undertaken included

332W.T. Roberts, et. al., Indian Land and Forest Resources, 163.

building roads, extending truck trails, spanning the Klamath and Trinity rivers with bridges, improving access to forests for fire suppression, recreation and logging, and in 1938, for the first time, BIA employees conducted cursory timber cruises in Hoopa Valley to enumerate the timber on the reservation. Using CCC-ID funding, a preliminary timber cruise and limited scaling operation were undertaken to compile statistics for future cutting permits. Finally, under the CCC-ID, tribal members received training in several fields, including forestry and forest fire suppression. The CCC-ID at Hupa only partially relieved the Hupa's desperate economic condition, but it is significant because it left behind the infrastructure that allowed the logging to penetrate not only Hoopa Valley, but the entire Trinity watershed after the end of World War II.³³³

It was also during the Depression that an effort to survey the Reservation's soils to predict the impacts of logging was undertaken. Under a cooperative agreement between the BIA and the Soil Conservation Service, the SCS conducted a survey of soil conditions in Hoopa Valley and issued a report in 1938 concluding that, "...hauling logs over steep slopes in connection to logging operations is resulting in the denudation of the soil and its exposure to erosive forces."³³⁴ The SCS report recognized the potential harmful impacts upon the land in Hoopa Valley posed by extensive logging. Erosion was the most obvious danger, and of course, every stream in Hoopa Valley leads to the Trinity River. Therefore, while logging in Hoopa Valley had, up to the 1930s, been relatively limited in scope, the potential harmful impacts were already beginning to show.

333 W.T. Roberts, et. al., Indian Land and Forest Resources, 166.

334 Quoted in W.T. Roberts, et. al., Indian Land and Forest Resources, 169.

The SCS went on to state that the reservation needed a comprehensive survey and land-use plan in order to best manage and conserve the resources of Hoopa Valley. The next year, in 1939, the Agency forester issued a plan for harvesting trees in Hoopa Valley using the principles of sustained yield, and followed-up his report with another but the planning came to a halt when attention was turned to the looming war clouds on the horizon. The approach of the second world war led eventually to almost a complete halt of funding for the forestry program.³³⁵

The environmental impact of logging in the Klamath-Trinity watershed first made their appearance on the lower-Klamath River. Logging operations along the lower Klamath River and on the Trinity contributed to the declining anadromous fish populations already hard hit by up-river mining. The development of roads suitable for heavy equipment along the coast early in the twentieth century, and through the Trinity River Basin in the 1920s and 1930s, allowed for the rise of a recreational sport fishing industry. Sportsmen fishing at the mouth of the Klamath River, and farther upstream on the Trinity River, began to complain in the early 1920s that logging harmed the anadromous fishery and made it difficult for sportsmen to fish the river during the fall run. Several sportsmen's organizations formed throughout the region and began calling for legislation to ban log rafting on the lower Klamath estuary from July 15 to October 15, the peak of the fall salmon run. This action was a compromise. Sportsmen did not want an end to logging, only to suspend that activity during the period of peak fishing. The logging companies responded quickly by pushing the California legislature not to

335W.T. Roberts, et. al., Indian Land and Forest Resources, 174.

pass any act that would hamper their operations. Rather, the lumber interests asked for and received a one year grace period to develop a voluntary policing program of their own logging practices.³³⁶

Nevertheless, sediment from clear-cut logging combined with historic mining debris roiled the waters of the Trinity River during precipitation events and spring runoff, inundating spawning beds and altering water chemistry. The anadromous fishery continued to suffer, and by 1933, California responded not by ending logging or mining, but instead by banning commercial fishing on the lower-Klamath River. The ban really had no effect because by 1933 ocean trolling technology was so advanced that the industry merely moved onto the ocean and scooped salmon from the ocean by the ton. Nevertheless, the anadromous fishery continued to decline. Salmon lucky enough to survive the gauntlet of industrial ocean trollers had to pass the gauntlet of sports fishermen at the mouth of the Klamath River and return to the Trinity River basins where they were welcomed by rivers overburdened with logging and mining debris. Ironically, the cutting of the timber by Hupa Indians in Hoopa Valley contributed to the sedimentation of the Trinity River. The Hupa realistically viewed the trees on the reservation as a source of economic prosperity. But by dropping the fishing net and picking up an axe (or chainsaw), Hupa lumberjacks and mill workers inadvertently contributed to the decline of the anadromous fishery and thus, the decline in the ability of the river to play its important role in the life way of the Hupa people. Nevertheless, the

³³⁶Bearss, Edwin C., History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California (National Park Service, Department of the Interior: Denver Service Center, n.d.), 281-2.

Hupa maintained their relationship with the Trinity River and the salmon that somehow managed to survive in the river regardless of its health. But the Hupa also turned to mining in the Hoopa Valley during this same period, and thus, helped contribute to the decline in the fishery while searching for ways other than fishing and logging to make ends meet in their valley home. Mining, which had caused such disruption to the lives and culture of the Hupas and their neighbors, also presented an opportunity for another avenue of participation in the new world confronted by the Hupa people.

After the federal government created and closed the Hoopa Valley Reservation to whites (except those authorized to trade or work there) in 1864, the Hupa were expected to become farmers and stock raisers. This policy was consistent with Federal Indian policy throughout California and much of the United States.³³⁷ But gold mining, which was only a minor economic activity in the valley before the creation of the reservation, did not end with the departure of the miners. The Hupas themselves tried their hands at placer mining which they had learned by themselves, or by working as mining laborers for whites previously in the valley and elsewhere. As with logging, this allowed them to supplement their incomes earned from farming, logging and other labor. Whites continued trespassing in Hoopa Valley in order to mine the auriferous gravels. When caught they were ejected from the reservation, but the reservation agent was ineffective in

³³⁷Hoopa Valley Reservation was created by treaty in August, 1864. In 1876 the reservation was confirmed by executive order to protect the land-base of the Hupa Indians, and prevent them from being sent to Round Valley. Improvements were appraised and eventually purchased by the Federal Government. Placer claims are not shown as part of the "improvements" purchased by the government. See: George Esborne Anderson, "The Hoopa Valley Reservation in Northwestern California: A Study of Its Origins," 206-211, 215-216, fn. 98; Byron Nelson, Jr., Our Home Forever, 89-90, 96-98. Valley agricultural products were marketed primarily to miners on the Klamath and Trinity rivers and the soldiers at Fort Gaston.

trying to stop this activity because the reservation was so large and he had little help patrolling the area from the U.S. Army.³³⁸

The allotment of Hoopa Valley influenced the development of placer mining along the Trinity River within the reservation. The allotment process as implemented in the valley was so confused that the right of access to gold-bearing gravels became uncertain and clouded. Nobody knew just who owned or had the right to mine the gold-bearing gravels located on the edges of allotted reservation fields, on river bars, and in the bed of the Trinity River, nor who should receive money from the exploitation of gravel of uncertain ownership. What was certain is that the Hupas wanted to go after the gold, but the federal government held them back - not because government officials did not want the Indians to become miners, but because the federal bureaucracy had yet to rule on how these lands were to be exploited, and who owned, what, etc. This confusing situation remained unsolved for years as agents at Hoopa Valley and officials at the BIA struggled with how to allot Hupa Valley in light of the shortage of arable land, Indian demands for land in certain places, and the stipulations of the Dawes Act.

By the early 20th century, after over a decade of delays in allotting the majority of Hupas, interest in mining the Trinity River in Hoopa Valley began increasing for two reasons. First, the technology needed to successfully mine extensive, low grade auriferous river gravels arrived in the form of the gold dredge and the Doodlebug.

338 Byron Nelson, Jr., Our Home Forever, 157-158. Trespassing by white miners seems to have increased after the federal government began to allot the reservation, but this fact may be because inconsistent records were kept or are missing from the record prior to 1887. I investigated letters sent and received, but a more thorough search of the difficult-to-read microfilms is warranted. Special permission must be gained from the lead Archivist of the records of concern at the National Archives and Records Administration in Washington D.C. if one wishes to access the original documents that are available on

Industrial dredges and doodlebugs were returning handsome profits from low-grade deposits on other California Rivers and on the upper Trinity River, and this stimulated interest in the gravels at Hoopa Valley. Second, observers believed that the allotment of Hoopa Valley would mean that remaining lands would be opened to outside mining interests, either through leasing or outright purchase. As early as 1898, a local newspaper reported that allotments in Hoopa Valley had been made and were available for lease:

Along the Trinity River [in Hoopa Valley] some rich placer claims can be found, which if properly developed would yield handsome returns. When the allotments were made the government compelled the Indians to not sell their land for 25 years, but they may rent it if they choose.³³⁹

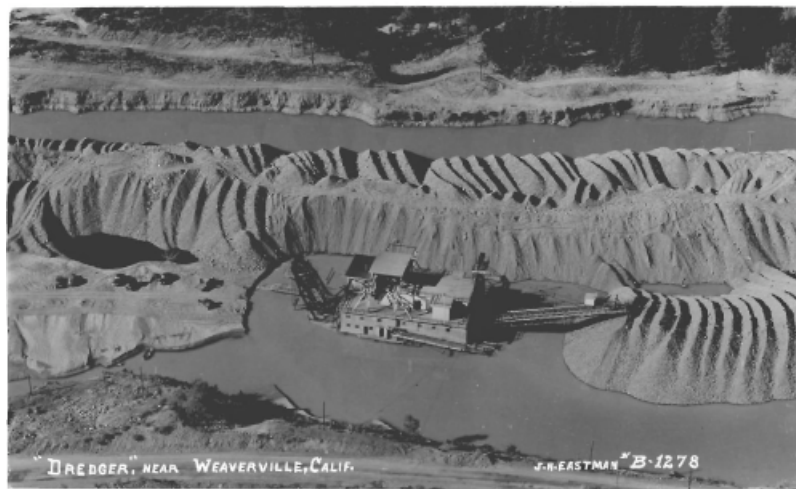
The newspaper report was wrong. Although preliminary allotment surveys and schedules had been completed, allotments had not been approved and there was no provision for leasing un-allotted reservation land. Ten years later, in 1908, a mining company attempted to prospect Hoopa Valley for minerals. Frank Kyselka, the Superintendent in charge at Hoopa, asked the Office of Indian Affairs if mineral ground could be leased to outside interests, and if he or other BIA employees at Hoopa could lease mineral land or own stock in companies doing so. Kyselka was informed that un-allotted land could not be leased under the existing law, but allotted land could be leased.

microfilm. This recent policy protects the documents from theft, mishandling and decay.

339Susie Baker Fountain Papers, Notebooks. Humboldt State University, Humboldt Room,

The BIA also informed Kyselka that employees were not allowed to lease allotments.³⁴⁰

Therefore, no leases could be granted to anyone at Hoopa Valley because the final allotment schedule still had not been accepted.



Fairview Placers Dredge above ca. 1953, (now sitting at the bottom of Trinity Lake), and an aerial view of the dredge working in the gravel of the Trinity ca. 1940s. Eastman Postcards. Authors' personal collection.

Arcata, California., vol. 34, pp. 44-45.

³⁴⁰Frank Kyselka to the Commissioner of Indian Affairs, February 19, 1908, RG 75, Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 43, File [331-Prospecting], National Archives, Washington, D.C.; C.F. Larrabee to Frank Kyselka, March 4, 1908, RG 75, Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 43, File [331-Prospecting], National Archives, Washington, D.C.

The slow, confusing process of allotting Hoopa Valley frustrated the Hupa people and confused reservation superintendents and BIA officials alike.³⁴¹ In 1914, for example, Jessica Brecht, a qualified allottee at Hoopa Valley, selected a 160-acre allotment bisected by Mill Creek. Brecht chose the land for agricultural purposes, but she discovered gold on Mill Creek and began small-scale placer mining as well. Her right to mine her allotment was questioned, and so she sought the approval of the Commissioner of Indian Affairs to conduct small-scale mining on her selected allotment to earn enough money to place her land into production. Her chosen allotment, like all allotments in the ten-mile square, was not finalized, but after conferring with the Superintendent at Hoopa and with the Commissioner of Indian Affairs, she was allowed to proceed after several months of waiting, although an official mining claim notice was not submitted to anyone.³⁴²

The delays in allotting Hoopa Valley slowed efforts by outsiders to access mineral lands, but the Bureau of Indian Affairs found itself pressured by outside interests to open not only Hoopa Valley, but all Indian reservations to mineral exploration. Attempts to finalize allotments were still underway at Hoopa when, in June 1919, the United States Congress passed legislation allowing individuals or groups to lease un-allotted mineral

341 Byron Nelson Jr., Our Home Forever, 149-158, 195-197.

342 160 acres is a large allotment for Hoopa Valley, but the allotment was probably broken into pieces of agricultural and grazing land. Research to date has not shown if this allotment was granted, but material in hand suggests that it was. Jessica Brecht to Commissioner of Indian Affairs, July 27, 1914; Edward J. Holden to Commissioner of Indian Affairs, September 26, 1914; E.B. Meritt to Jessica Brecht, October 17, 1914, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.

lands on those Indian Reservations created by Executive Order.³⁴³ Under the provisions of the act individuals could lease up to twenty acres of un-allotted mineral land, and a group of eight or more could lease a total of 160 acres.³⁴⁴ By throwing-open reservation lands, Congress liberalized the existing laws regulating leasing un-allotted lands, which up until that time had frustrated those interested in exploiting Native American resources.³⁴⁵

The passage of this act had immediate consequences for Hoopa Valley. On November 1, 1919, Hoopa Valley was thrown-open to mineral exploration, and in December 1919, Jesse B. Mortsof, the Superintendent at Hoopa Valley, noted a substantial number of people entering the reservation and posting claim notices in anticipation of leasing.³⁴⁶ But many of the claims were on lands that had been surveyed for allotment. Three hundred and eighty allotments were tentatively selected and there still remained many surveyed allotments to be chosen, yet the allotment schedule was still not approved. The situation posed a vexing problem for Mortsof and the Commissioner of Indian Affairs. Could land surveyed for allotment, but which remained un-allotted, be

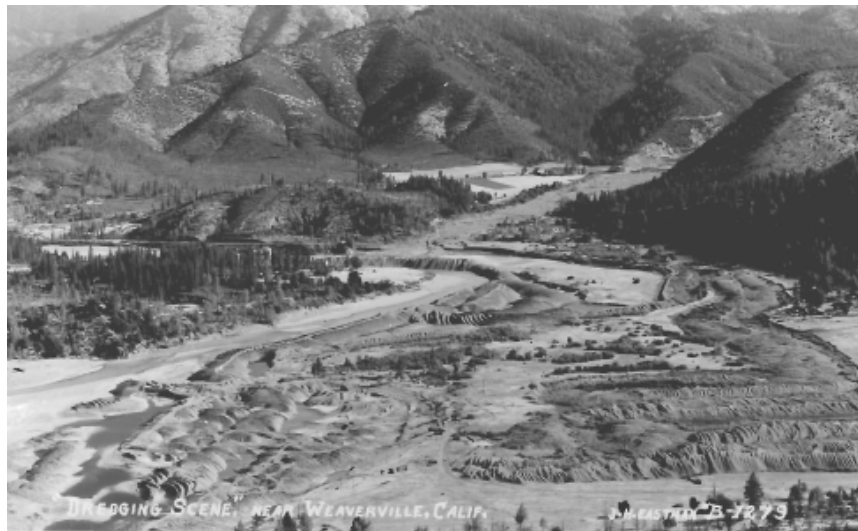
343Hoopa Valley, although set aside by treaty in 1864, was officially designated a reservation by Executive Order in 1876, and was therefore subject to the new regulations.

344Byron Nelson Jr., Our Home Forever, 157-158.

345All un-allotted land in Hoopa Valley and selected land in the Extension were opened by this legislation. See: "Description of Lands Subject to Lease for Mining Metalliferous Metals", RG 75, Bureau of Indian Affairs, California, Hoopa Valley Agency, Administrative Subject Files, 1896-1926, Box No. 61, Series 51, File [Mining-Correspondence, 1908-1919], National Archives, Pacific Sierra Region, San Bruno, California.

346Mortsof to C. X. Henry, May 5, 1920, RG 75, Records of the Bureau of Indian Affairs, California, Hoopa Valley Agency, Administrative Files, 1896-1947, Administrative Subject Files, 1896-1926, Box No. 61, Series: 51, File [Mining Correspondence, 1920], National Archives, Pacific-Sierra Region, San Bruno, California.

leased? Would interested parties be allowed to lease the bed of the Trinity River for dredging?³⁴⁷



Before and after the Fairview Placers Dredge on the upper-Trinity River. It was this type of river-bed destruction that the Hoopa Tribe wanted to avoid. Eastman postcards ca. 1935-1940. Authors' personal collection.

347 Jesse B. Mortzolf to Commissioner of Indian Affairs, December 22, 1919, RG 75, Records of the Bureau of Indian Affairs, California, Hoopa Valley Agency, Administrative Files, 1896-1947, Administrative Subject Files, 1896-1926, Box No. 61, Series 51, File [Mining Correspondence][1920],

E.B. Meritt, the Assistant Commissioner of Indian Affairs, informed Mortsolf that land surveyed for allotment could not be leased until after a fee or trust patent was issued to the allottee. As for leasing the bed of the Trinity River, Meritt left the question unanswered when he stated that if the river was navigable, it was not open to leasing, but if non-navigable, the Superintendent should consult with the Commissioner of Indian Affairs on a case-by-case basis. But Meritt chose not to make a determination of navigability.³⁴⁸ Nevertheless, at this point, it seems that the river itself and its physical characteristics, were influencing federal Indian policy and mineral leases.

The federal government could not ignore the allotment issue nor the question of the navigability of the Trinity River because after Hoopa Valley was opened to mineral exploration, a rush to stake claims in the Valley took place. Beginning in December 1919, placer miners bombarded Superintendent Mortsolf with requests for claims along the Trinity River, and many miners trespassed on lands selected by Hupa Indians for allotment.³⁴⁹ White miners complained that they were forbidden to lease land already surveyed for allotment but still not assigned to individual Indians.³⁵⁰ The Hupas in turn

National Archives, Pacific-Sierra Region, San Bruno, California.

348E.B. Meritt to Jesse B. Mortsolf, January 23, 1920, RG 75, Records of the Bureau of Indian Affairs, Central Classified File, 1907-1939, Hoopa Valley, Box No. 44, National Archives, Washington, D.C.

349Several claim notices were filed covering hundreds of acres of Auriferous gravel in Hoopa Valley. See: RG 75, Bureau of Indian Affairs, California, Hoopa Valley Agency, Administrative Files, 1896-1947, Administrative Subject Files, 1896-1926, Box No. 61, Series 51, File [Mining-Notice of Location of Placer Claims, 1919-1924], National Archives, Pacific-Sierra Region, San Bruno, California.

350Jesse B. Mortsolf to Commissioner of Indian Affairs, transmitting protest of H.W.A. Docker, August 21, 1920, E.B. Meritt to Jesse B. Mortsolf, September 28, 1920, Mortsolf to Commissioner of Indian Affairs, October 8, 1920, Meritt to Docker, October 21, 1920, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box 44, National Archives, Washington, D.C.

complained to the federal government about this new invasion of their land and the precarious position they found themselves in because they had not been officially granted allotments.³⁵¹ Although Mortsof accepted claim notices, mining was not allowed on any lands surveyed for allotment because the Commissioner of Indian Affairs and Mortsof himself assumed that surveyed land would eventually be selected for allotments.

In 1922 and 1923, the federal government accepted and approved the allotment schedule that had been compiled in 1918 and 1919.³⁵² Approving the allotment schedule, however, did not eliminate the barriers faced by white miners coveting auriferous gravels in Hoopa Valley. The allotments along the Trinity River averaged four acres in size and the gravels suited for placering were located on land allotted to many different individuals, or on land being used by Tribal members but not officially allotted to them. A large amount of gravel was required to make a dredging operation profitable, and so miners were faced with the prospect of having to negotiate numerous leases with several owners, or settle for several small areas of gravel separated by areas where they could not mine. Miners could lease un-allotted gravel deposits from the Tribe, but to make a mine profitable they still needed many additional acres of contiguous gravel. The question of

³⁵¹John Raker to Cato Sells, April 30, 1920, transmitting a petition with eighty Indian signatures, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 49, National Archives, Washington, D.C.

³⁵²In 1895 the first allotment schedule for Hoopa Valley was completed, and 465 allotments were selected. However, because of discrepancies in survey lines and questions about allotment boundaries, the schedule was never approved and was canceled in 1918. A new schedule was drawn-up in 1918 to accommodate those born after 1895, and was submitted to the federal government in 1919. The federal government approved the 1919 allotment schedule in 1922-23, but it did not assign land to those born after 1918 and so left many Hupas landless. There continued to be requests for allotments for children born after 1919, and for individuals eligible for allotments. After 1923, only a few new allotments are assigned, and in 1934, further allotment of Hoopa Valley was forbidden. All lands that were not allotted prior to the Wheeler-Howard Act of 1934, were to be held as tribal property. See: Byron Nelson, Jr., Our Home

who owned the bed of the Trinity River was still open, furthermore, and the approval of the allotment schedule created difficulties for those who had selected allotments along the Trinity River. Many allottees wished to mine in the river adjacent to their allotments or lease the bed to interested parties, but were not officially allowed to do so until it was determined who actually owned the bed of the river. Theoretically, no mining was allowed in the bed of the Trinity River until ownership was established, but throughout the 1920s, the river was mined on a small scale - mostly by the Hupas themselves.

The question of ownership turned on the question of navigability, and the Commissioner of Indian Affairs and the Superintendent at Hoopa failed to clearly address this question until 1931.³⁵³ In that year, the Superintendent at Hoopa Valley, O.M. Boggess, received numerous requests to mine the bed of the Trinity River and asked the Commissioner of Indian Affairs to settle the ownership issue once and for all. The Commissioner responded that during the 1920s the State of California had enumerated all navigable rivers within its borders, and the Trinity was not included among them. Therefore, the Commissioner accepted the state's conclusion that the Trinity was not a navigable stream and informed Boggess that since the Trinity was not navigable, the allottees adjacent to the river owned to the centerline of the stream and could mine their allotments without paying any royalty to the Tribe. Allottees were also permitted to lease their allotments to anyone they chose for mining purposes, but the Tribe owned the bed

Forever, 195-197.

³⁵³Commissioner of Indian Affairs to O.M. Boggess, August 4, 1931, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1909, Box No. 44, National Archives, Washington, D.C.

of the Trinity where there was no allotted land.³⁵⁴ After determining ownership of the bed of the river, the Office of Indian Affairs approved pending leases between allottees and miners for working the bed of the Trinity River adjacent to allotments, and also permitted miners to conclude leasing agreements with the Tribe to mine un-allotted portions of the bed of the river.³⁵⁵

During the 1930s, the number of individuals, particularly Native Americans, undertaking small-scale placer mining in Hoopa Valley grew.³⁵⁶ Increased mining activity in the Trinity River Basin and was directly related to the Great Depression. Whereas logging suffered during the Depression, mining benefitted.³⁵⁷ During the Depression, Superintendent Boggess enforced the leasing regulations, and also allowed Native Americans living on the reservation to lease land suitable for mining through

³⁵⁴Commissioner of Indian Affairs to Boggess, October 20, 1931, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.

³⁵⁵Rhoads to Boggess, January 19, 1932, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.; Rhoads to the Secretary of the Interior, January 15, 1932, RG 48, Department of the Interior, Office of the Secretary, Central Classified Files, 1907-1936, 5-1, Hoopa Valley-Hope, Box No. 1221, File 5-1 (Part 1), Indian Office, Hoopa Valley, Permits-General, April 15, 1913 to August 13, 1934, National Archives, Washington, D.C. Miners leasing from the Tribe were required to pay royalties established by the federal government in 1919.

³⁵⁶O.M. Boggess to Commissioner of Indian Affairs, June 23, 1931; Boggess to Commissioner of Indian Affairs, August 3, 1931; Boggess to Commissioner of Indian Affairs, November 26, 1932, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.

³⁵⁷*Trinity Journal*, June 2, 1932; July 23, 1932; February 2, 1933; September 16, 1933. (Weaverville Historical Society Museum, Weaverville California) Document File: Mining, Document #18a and 18b.

special one-year revocable leases devised by the Commissioner of Indian Affairs.³⁵⁸

Under this system, Hupa and other Native Americans on the reservation could lease restricted allotments owned by other Indians, or lease Tribal land, but did not have to post bond, nor submit detailed development plans, because the agent assured the Commissioner of Indian Affairs that they were only mining on a small scale to supplement their meager incomes from other sources. However, they were to pay the owners of allotments or the Hupa Tribe a royalty set by the superintendent.³⁵⁹

Not all of the Hupas supported the leasing program. In December 1931, seventy-five Hupas petitioned the federal government the right to mine, hunt and fish exclusively to Tribal members only. Superintendent Boggess supported the Hupas in their complaint stating that there were legitimate miners in the valley, but "the sniper type of miner who comes in and claims to be prospecting but who in fact is trying to get a few dollars worth of gold and then drift along [without paying royalties, posting bond or filing a claim] is a source of much annoyance to us."³⁶⁰ The Commissioner of Indian Affairs allowed

358C.J. Rhoads to O.M. Boggess, August 4, 1931; "Placer Gold Mining Permit to Cover Hoopa Valley Tribal Land (For Indians Only)", RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.; Rhoads to Boggess, enclosing copy of lease agreement form, October 20, 1931, R.G. 48, Records of the Department of the Interior, Office of the Secretary, Central Classified Files, 1907-1936, 5-1, Hoopa Valley-Hope, Box No. 1221, File 5-1 (Part 1), April 13, 1912 to July 11, 1936, File: "Indian Office, Hoopa Valley, Leases", National Archives, Washington, D.C.

359Lease Agreement, H.C. Chester, December 11, 1931, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.; The royalties for each lease were determined by the Superintendent at Hoopa Valley. The first leases concluded showed a disparity in the royalty charged for mining. Eventually, a ten percent royalty became the standard amount paid by Indian lessees. See: C.J. Rhoads to O. M. Boggess, October 20, 1932, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington, D.C.

360O.M. Boggess to Commissioner of Indian Affairs, transmitting a petition against hunting,

Bogges to honor the wishes of the Hupa people regarding hunting and fishing, but he could not stop prospecting and mining that was in compliance with the federal laws then in place.³⁶¹

Under the 1934 Indian Reorganization Act, the Hupas created the Hoopa Valley Business Council. The council allowed the Hupa people to assume a significant role in the exploitation of resources in the Hoopa Valley.³⁶² The Business Council requested that superintendent Bogges stop leasing mineral ground to outside mining interests because it threatened to destroy agricultural land much more valuable to the people of the valley than low-paying placer claims. The Council also requested that the federal government grant them power to regulate mining on Tribal land along the Trinity River and Mill Creek. The BIA granted their request. Under the new arrangement, individuals could still lease Tribal lands for mining, and Hupas could mine or lease their own allotments and the bed of the Trinity River adjacent to their property, but the Business Council assumed a stance of guardianship over all resources within the Valley and focused on ending placer mining on the valley floor where it threatened to destroy allotments.³⁶³ Requests to lease Tribal resources were discussed and voted upon at

fishing and mining by whites, December 18, 1931, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 4, National Archives, Washington, D.C.

361C.J. Rhoads to O.M. Bogges, January 19, 1932; Rhoads to Bogges, February 19, 1932, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 4, National Archives, Washington, D.C.

362Byron Nelson, Jr., Our Home Forever, 163-179.

363"Minutes of Hoopa Valley Business Council", September 21, 1933; O.M. Bogges to Commissioner of Indian Affairs, February 19, 1934; Bogges to Commissioner of Indian Affairs, April 3, 1934; John Collier to Secretary of the Interior, June 20, 1934, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 44, National Archives, Washington,

monthly Business Council meetings, and the council disallowed leases that were not beneficial to the Hupa Tribe, while encouraging the development of resources that it viewed as advantageous.³⁶⁴ Small scale placer mining continued throughout the 1930s, but the Hoopa Valley Business Council, with the cooperation of the Office of Indian Affairs, closely scrutinized lease requests, and studied the potential benefits and injury resulting from proposed projects before approving or disapproving a lease application.³⁶⁵

Unlike the debris issue in the Central Valley, the causes of opposition to mining in the Trinity River Basin was brought about for reasons other than flooding and damage to agricultural land. The issue that finally brought the state of California into the Trinity River region to regulate mining was the concern over the depletion of anadromous fish in the Trinity and Klamath Rivers. This was part of a larger movement that began in the 1920s to conserve fish habitat and enhance a local economy that was increasingly dependent upon sportsmen.³⁶⁶ In 1933, the state of California consolidated its laws for

D.C.

³⁶⁴William Zimmermann, Jr. to Secretary of the Interior, recommendation to disallow placer mining lease requested by Mr. S.P. Coffey, January 28, 1935, RG 48, Records of the Department of the Interior, Office of the Secretary, Central Classified Files, 1907-1936, 5-1, Hoopa Valley - Hope, Box No. 1221, File 5-1 (Part 1), April 13, 1912 to July 11, 1936, Indian Office, Hoopa Valley, Leases, National Archives, Washington, D.C.; "Minutes of the Hoopa Valley Business Council" August 8, 1935, approval of request to obtain a lease to mine coal in Hoopa Valley, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 4, National Archives, Washington, D.C.

³⁶⁵O.M. Boggess to Commissioner of Indian Affairs, December 6, 1939; Boggess to Commissioner of Indian Affairs, October 8, 1940; Report of B.W. Dyer, District Mining Supervisor, U.S. Geological Survey, on Certain Lands on Hoopa Valley Indian Reservation in Connection with Gold Placer Lease Application", November 28, 1939, RG 75, Records of the Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1907-1939, Box No. 43, National Archives, Washington, D.C.

³⁶⁶In 1926 the Estabrook Gold Dredging Company near Trinity Center informed that Eureka Chamber of Commerce that it would voluntarily do whatever it could not to muddy the Trinity River with debris from July through September. The company shut-down its hydraulic mine, but would only move the dredge out of the main channel of the Trinity but continue to operate. See: *Trinity Journal*, July 3, 1926. (Weaverville Historical Society Museum, Weaverville California) Document File: Mining, Document #18a

fish and game into a comprehensive fish and game code. Under its provisions, state fish and game districts were delineated for administrative and regulatory purposes. The Trinity and Klamath river fish and game district encompassed the Trinity River from its confluence with the South Fork to the Klamath River.³⁶⁷ To protect fish, section 482 of the 1933 California Fish and Game Code forbid polluting the Trinity and Klamath River, and read in part:

It is unlawful, between July fifteenth and October fifteenth, to pollute, muddy, or roil the waters of the Trinity and Klamath River district, or deposit, or permit the depositing of, any substance in said waters, so that the clarity thereof is affected. The clarity of said waters shall be deemed affected when said waters. . .contain more than fifty parts per million, by weight, of suspended matter. Any structure or contrivance which contributes to the condition, the causing of which is herein prohibited, is a public nuisance.³⁶⁸

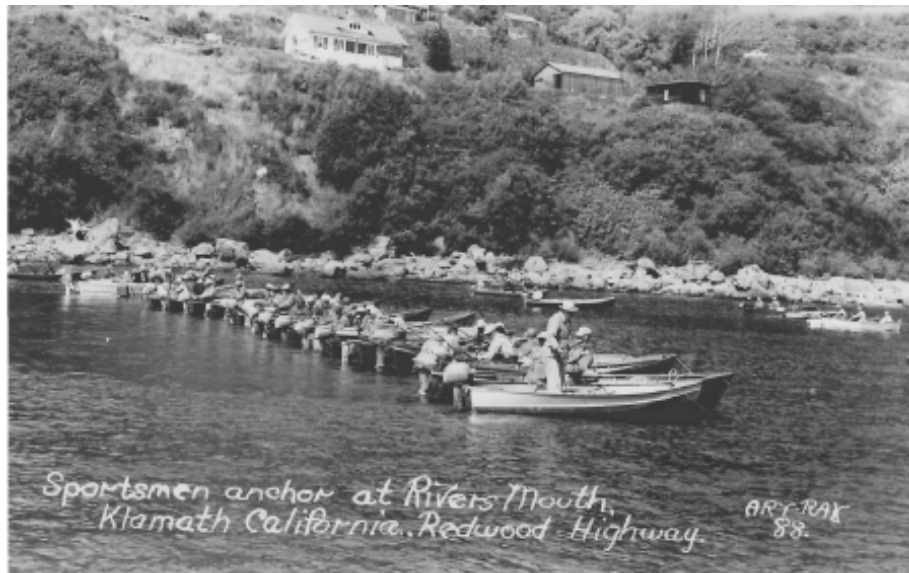
Section 482 of the 1933 California Fish and Game Code was not specifically aimed at mining, but rather, was an attempt to stop pollution from any source whatsoever.

and #18b.

³⁶⁷California first divided the state into Fish and Game Districts in 1911. Several changes in the number of districts and their boundaries have been made since then. See: Edwin C. Bearss, History Resource Study, 322-324.

³⁶⁸Edwin C. Bearss, History Resource Study, 331.

Mining, therefore fell under the limitations imposed by the code, yet the code had no stipulations for punishment.³⁶⁹ The dates of regulation, July to October 15, were in effect during the height the fall spawning run, but more importantly, the ban was in effect during the peak of the sport fishing season demonstrating the new importance of that industry within northwestern California.³⁷⁰



Sport fisherman shoulder to shoulder at the mouth of the Klamath River. The rise of the recreational fishing industry in northwestern California introduced another, powerful interest group in the area. Sports fishing associations succeeded in pushing the State to regulate mining in the upper Basin. Art Ray. Photo postcard, ca. 1940s-1950s. Authors' personal collection.

³⁶⁹The state and federal government did not have to abide by the 1933 Fish and Game Code. Section 484 stated: "The provisions of this article relating to the Trinity and Klamath River district do not apply to the construction, repair or maintenance of public works by the Federal or State government, or any political subdivision thereof." Quoted in Edwin C. Bearss, *History Resource Study*, 331. However, while operating the LaGrange Mine the state did refrain from dumping debris during the period stated in the code. See: *Trinity Journal*, July 28, 1934, Trinity County Historical Society Museum, Weaverville California. Document File: Mining, Documents #18a and 18b.

³⁷⁰In an attempt to stall the depletion of the anadromous fish runs along the Klamath and Trinity River, California also banned commercial fishing of the Klamath River in 1933. For a concise summary of the events leading to the fishing ban and its effects, see: Edwin C. Bearss, *History Resource Study*, 335-351.

The problem of silt from mining operations continued to affect the Trinity and Klamath rivers because forcing miners into compliance with fish and game regulations was difficult. As debris continued to enter the waters of the rivers in northwestern California, sport fishing interests and conservationists pushed the state to specifically regulate the dumping of mining debris into the Trinity and Klamath rivers. In the mid-1930s, the California legislature was increasingly pressured to take action, and in 1937 passed a law to stop mining pollution. Known as the "Quinn Bill," the law was a revision of earlier fish and game codes, and section 482 of the new legislation specifically forbid mines from tailing into the Trinity and Klamath River fish and game district, and extended the prohibition period when mines could not discharge detritus into the waters of the district. Section 482b read in part:

It is unlawful between July 1 and November 30, both dates inclusive, to pollute, muddy, contaminate, or roil the water of the Trinity and Klamath fish and game district. It is unlawful between said dates to deposit in or cause, suffer or procure to be deposited in, permit to pass into or place where it can pass into said waters, any debris, substance or tailings from hydraulic, placer, milling or other mining operation affecting the clarity of said waters [said limit to be fifty parts per million of suspended matter].³⁷¹

The law further addressed the hydraulic mining debris issue by stipulating in

Section 482c that hydraulic mines located along *any* waters flowing into the Trinity and Klamath River fish and game district were forbidden from dumping debris within the stated period. Therefore, although the Trinity and Klamath River fish and game district encompassed the Trinity River from its confluence with the Klamath to the South Fork of the Trinity, the Quinn Bill effectively forbid dumping debris well outside of district boundaries. Violation of the bill was punishable by a misdemeanor, and any mine or associated operation doing so was guilty of creating a public nuisance. In an attempt to give the new code teeth, the law also provided that the district attorney of the county where any violations occurred was to take action to stop the nuisance. Hydraulic mines, however, were specifically allowed to use and discharge water into said district between July 1 and July 15 for the purpose of "cleaning up."³⁷² The continued fight by the State and later, sport fishing interests falls outside the chronological scope of this chapter, but it was in the post world war II era that effective measures helped to regulate seriously mining and logging in the Trinity River Basin began.³⁷³ One area where the federal

371Edwin C. Bearss, History Resource Study, 387.

372Edwin C. Bearss, History Resource Study, 388.

373By the 1940s, the Quinn Bill had proved ineffective at stopping all mines from dumping debris when they were forbidden to do so. Studies showed that mining silt and logging wastes suffocated salmon and steelhead eggs and killed fry. Paul A. Shaw and John A. Maga, "The Effect of Mining Silt on Yield of Fry from Salmon Spawning Beds," in California Fish and Game, 9(1)1941:29-41. Silt was especially damaging during the late-spring and summer months when water velocity was slow allowing sediment to accumulate on spawning beds. The Quinn Bill attempted to regulate mining during this critical period and it was somewhat effective at stopping most industrial-scale hydraulic mining because it allowed a seven month "hydraulic season," and industrial hydraulic mines had little problem operating at during that time of the year. Under the law, dredges could operate in gravel well away from rivers and streams because they needed only a pond to float upon while dredging and often dug a settling Basin for their discharge water. See: *Trinity Journal*, July 4, 1946, Trinity County Historical Society Museum, Weaverville California, Document File: Mining, Document #18a and 18b, Small sluice operators and river miners were hampered by high water and so stopping all forms of mining from July to November was a hardship for them. The Quinn Bill, like the Caminetti Act of so many years before, was an attempt to satisfy all economic interests.

government made a concerted effort to improve the lives of the Hupa people was in the area of agriculture. The Hupas were directed to become farmers, but by the turn of the 20th century, dry farming and spring-fed truck gardening could not support the Hupas. The federal government decided that irrigation could save the Hupa farming economy and benefit the entire tribe.

Prior to contact the Hupas relied on a complex set of subsistence strategies aimed at maximizing available plant and animal resources rather than intensive agriculture.³⁷⁴

White farmers who appropriated much of the arable land in Hoopa had been growing non-native crops such as wheat, oats, barley, corn, potatoes, fruits, vegetables and feed crops that required irrigation. After, the creation of the Hoopa Valley Reservation in 1864, the Office of Indian Affairs expelled non-Indians, purchased their property and other improvements as a convenient ready-made farm setting that fit nicely into its

But because it offered only token punishment, the bill had little effect and some miners continually refused to abide by the fish and game code. Western Mining News, March 1941, vol 15, no.3, p.3., By 1941, sportsmen, resort owners, and other interest groups began clamoring for additional restrictions on mining. They asked for amendments to strengthen the Quinn Bill, and circulated petitions to force an initiative to amend the State constitution forbidding mines from polluting any California River. Edwin C. Bearss, History Resource Study, 390.

³⁷⁴The Hupas and other Native people of the region actively cultivated tobacco for ceremonial purposes. Kathy Heffner, "Following the Smoke: Contemporary Plant Procurement by the Indians of Northwest California". Eureka, California: Six Rivers National Forest, April, 1984., 24-25, 77. For a recent interpretation of North coast Native impact on the land see: Thomas S. Keter, Environmental History and Cultural Ecology of the North Fork of the Eel River Basin, California (Eureka, California: Six Rivers National Forest, United States Department of Agriculture, September, 1995)., In an attempt to classify pre-contact Native agricultural practices, anthropologists have labeled subsistence activities as "Quasi-Agriculture" and "Proto-Agriculture". See, Alan C. Zeigler, "Quasi-Agriculture in North Central California and its Effect on Aboriginal Social Structure," in Kroeber Anthropological Society Papers, 38(Spring 1968), 52-76., and Lowell John Bean and Harry W. Lawton, "Some Explanations for the Rise of Cultural Complexity in Native California with Comments on Proto-Agriculture and Agriculture" in Henry T. Lewis, Patterns of Indian Burning in California: Ecology and Ethnohistory, Ballena Press Anthropological Papers, no. 1 (Ramona, Calif.: Ballena Press, 1973), 17-36. The most accurate description and analysis of Hupa land-use and the relationship between the Hupa people and their environment is, Lee Davis, "On This Earth: Hupa Land Domains, Images and Ecology on 'Deddeh Ninnisan'" (Ph.D. diss., University of California, Berkeley, 1988).

standing policy of "civilizing" indigenous peoples.³⁷⁵ However, farming in Hoopa Valley was never able to wholly support the Hupas during the latter half of the nineteenth century for reasons beyond their control - the soils were rocky and were already becoming depleted when the reservation was established, irrigation was needed because rain fell from October to March, but during the growing season, the sky was more often clear and not, and finally, the office of Indian Affairs never committed enough resources or expertise and the Hupas were continually under the shadow of possible removal until 1876 when their reservation was confirmed by Executive Order. The Hupas were so isolated in the valley that only pack trains brought in and out supplies, communications, tools, etc. As mining industrialized up river, the number of individual miners fell and they came to rely upon Camp Gaston for a point of sale. The post closed in 1892 and the Hupa found themselves at the mercy of the BIA and hoped that they would finish allotting the reservation and assist in bringing irrigation to the arable lands of the valley.³⁷⁶ Although dry farming was the predominant method used by the Hupa farmers to farm in Hoopa Valley, if irrigation were needed, the numerous streams feeding into the Trinity River within Hoopa Valley were the most logical and easily accessible sources for

³⁷⁵The 1887 Dawes Act spurred federal attempts to convert Indians into farmers and release Indian land for white settlement. Hoopa Valley was surveyed, allotment schedules were drawn up, and the Hupas were encouraged to select allotments for farming. Allotment was delayed for many reasons, and the program failed to divide the valley among its Native residents in a way that exactly mirrored white agricultural society. The Hupas exerted influence upon the allotment process by continuing to define their world and living patterns based upon traditional village locations by selecting allotments in fields where their families had resided since time immemorial, or near traditionally recognized owned resources sites.

³⁷⁶Hoopa Valley is naturally divided by the meandering Trinity River into eight defined "fields" suitable for crop agriculture. The names of these fields today roughly reflect pre-contact and historic village occupation, federal government presence, and the interaction of Hupas and non-Hupas. The eight fields, from north to south are; Norton, Soctish, Meskat, Chenone, Hostler, Agency, Matilton and Campbell. David Rich Lewis, Neither Wolf Nor Dog, 90.

irrigation water and other water needs. Many of these streams are perennial, providing water all year long. Some of the streams today bear names that reflect their historic use such as Mill Creek, and Supply Creek. The latter was tapped to supply water to Fort Gaston, and later Hoopa Valley Agency and its associated structures with water.³⁷⁷ A completely self-sufficient Hupa farming community never materialized. The Hupa people cooperated and embraced farming, but consistently on their own terms. Office of Indian Affairs and military personnel expressed frustration, and seemingly could not understand why the Hupas continued to maintain many traditional, pre-contact subsistence strategies.³⁷⁸ The Dawes Act came into play when the attempt was made to create an agricultural economy, but because of its chaotic and confusing application, and the long struggle to finalize the allotment roll, the circumstances hindered Office of Indian Affairs and Hupa efforts to create a viable agricultural economy.³⁷⁹ Allotment confusion and delay, and the demands of the Hupa people ultimately led to the small size of allotments made to individual Hupas undermined efforts to farm.³⁸⁰

Attempts by the BIA to redefine the Hupas' relationship to their valley were more difficult than anticipated. Federal funding and programs were so inconsistent and inadequate that agents and military officers who sometimes acted as agents often found

377David Rich Lewis, Neither Wolf Nor Dog, 90.

378David Rich Lewis, Neither Wolf Nor Dog, 95-96.

379Generally, the Hupas did not oppose allotment, but there was too little land for adequate allotment among the entire tribe based upon agriculture alone. Byron Nelson, Jr., Our Home Forever, 136, 195-197; David Rich Lewis, Neither Wolf Nor Dog, 98-105; John H. Bushnell, "From American Indian to Indian American: The Changing Identity of the Hupa," American Anthropologist, 70 (December 1986), 1110.

themselves reacting to agricultural trends in Hoopa Valley rather than developing consistent and realistic programs. Indian Office and military personnel often exacerbated problems associated with agricultural development by arbitrarily exercising their almost unchecked authority over the reservation. The fertility of the soil also influenced policy. Valley land was productive though marginal when first cultivated, but over cropping eventually depleted the rocky, porous soil, and crop yields fluctuated year to year.³⁸¹ Reservation superintendents and farmers often cited irrigation as the key to the marginal soil of the Valley. Finally, when the Hupas did occasionally produce enough surplus to sell, markets for the valley's agricultural products were often inaccessible.

In 1887 construction began on a wagon road to connect Hoopa Valley with the coast and larger regional markets, but it was not finished until 1892. When Valley products did reach outside markets, however, transportation costs usually made them too expensive and noncompetitive.³⁸² A second road was started in 1908, but took eight years to complete. As late as 1921, agent Jesse Mortsof complained that the road leading to the coast was a "marginal road" eight months out of the year, and if passable at all during the winter, it took two days to reach Arcata.³⁸³

Nevertheless, Hupas worked hard at farming. Some of them built private

380David Rich Lewis, Neither Wolf Nor Dog, 102.

381David Rich Lewis, Neither Wolf Nor Dog, 91.

382The Hoopa Valley Wagon Road was not complete until 1892. The road was poorly constructed and ran through rugged country. David Rich Lewis, Neither Wolf Nor Dog, 97,100.

383Letter, Jesse B. Mortsof, Supt., to Commissioner of Indian Affairs, May 16, 1921, RG 75, Office of Indian Affairs, CCF 1909-1929, HV, letter #43427. David Rich Lewis, Neither Wolf Nor Dog,

diversions in the valley to water garden plots and fields well after the creation of the Hoopa Valley Reservation. The Hupas built these works without direct federal supervision or funding.³⁸⁴ Reservation personnel were never far removed from most Hupa land-use activities, however, and viewed the Hupas private irrigation efforts as a move toward achieving the federal goal of self-sufficient farming. The Hupa diversions were built to flood lands they hoped would be allotted to them, but they recognized that the federal government had not formally assigned the land. Consequently, Hupa irrigators did not expand their private efforts beyond their immediate needs. In 1900, for example, several Hupa ranchers diverted water from Mill and Hostler creeks with ditches to flood their fields and grow alfalfa. By 1910, only 40 acres were irrigated by private ditch.

Agency farmer Charles L. Davis realized that irrigation would increase field productivity, and encouraged the Hupas to build more ditches to grow alfalfa in hopes of restoring soil fertility and encouraging a valley livestock industry. Although the Hupas were willing to initiate limited diversions to help themselves, they were hesitant to move forward under the auspices of Davis and the Office of Indian Affairs. The Hupas built ditches through their own initiative, but they recognized that their efforts were not wholly "private" because of federal presence within Hoopa Valley. They had little control over the decisions of the Office of Indian Affairs. The Hupas embraced allotment, but delay after delay made any investments in land in the form of labor, money or materials

102.

³⁸⁴The valley is well-watered and agents noted that there were "rivulets" seeping from mountainsides in Hoopa Valley that the Hupas diverted to irrigate their private gardens. David Rich Lewis, Neither Wolf Nor Dog, 102-103.

extremely risky. Hupa individuals, therefore, took a cautious approach to expanding their irrigation systems because they recognized that delays in allotments placed them in a precarious situation. If they borrowed money and improved lands to which they held no title, they could lose everything. It was safer, the Hupas may have reasoned, to wait until the allotment process was complete.³⁸⁵

The existence of private Hupa irrigation projects suggests several important points to consider concerning the development of reservation agriculture and water diversions. Agency personnel reacted to Hupa initiatives rather than conceiving of and directing irrigation projects themselves. Moreover, the ideal of a self-sufficient Hoopa Valley farming community based upon individual land ownership and self-sufficient farms was not being realized. Rather, after 45 years of effort, the Hupas were not self-sufficient farmers. Davis, the agency farmer, and the Hupas recognized that raising livestock was a viable alternative to grain farming. However, agency officials believed that ranching would augment, not replace crop agriculture, and so continued to cling tenaciously to the idea of self-sustaining individual farms which could only succeed if there was a dependable irrigation system. The Office of Indian Affairs embraced irrigation in order to realize its goals of the Dawes Act. But irrigation works were expensive, and federal funds were needed to finance any realistic project within Hoopa Valley. Perhaps most important of all, the allotment issue had to be resolved if there was ever to be an adequate irrigation system in the Hoopa Valley. Farming in Hoopa Valley continued to be a key component of the Valley economy during the 1920s. Dry farming continued as the main

³⁸⁵David Rich Lewis, Neither Wolf Nor Dog, 102-103.

method of farming, but production and the number of acres farmed tended to fluctuate year to year and farmers continued to struggle.³⁸⁶

Until the early twentieth century, the developments of reservation irrigation systems nationally were the responsibility of reservation agents and superintendents. This system resulted in haphazard and inadequate attempts at irrigation on most reservations.³⁸⁷ Reservation agents and superintendents did not have the expertise and engineering skill, nor did they possess the funding to build and maintain irrigation systems that could adequately serve the needs of Indian people.³⁸⁸ Throughout the United States most reservation irrigation projects were funded on a project by project basis, usually built with Native American labor, and more often than not benefitted whites who purchased Indian lands rather than Native peoples.³⁸⁹ Yet, by the end of the nineteenth century, national interest in reclamation and irrigation in the arid west (where most reservations were located) manifested itself in the Department of the Interior and the Indian Office. In 1899, two superintendents of irrigation were appointed within the

386David Rich Lewis, Neither Wolf Nor Dog, 106.

387Daniel McCool, Command of the Waters: Iron Triangles, Federal Water Development, and Indian Water. Berkeley: University of California Press, 1987, 161-75, an passim, examines some of the complications of Indian water development.

388Porter J. Preston and Charles A. Engle, "Report of Advisors on Indian Irrigation on Indian Reservations," June 8, 1928, printed in "Survey of Conditions of the Indians in the United States, Hearings Before a Subcommittee of the Committee on Indian Affairs, United States Senate, 71st Congress, 2d Session (1930), part 6, pp. 2210-2661; Laurence F. Schmeckebier, The Office of Indian Affairs: Its History, Activities and Organization (Baltimore: The Johns Hopkins Press, 1927), 237-242; Francis Paul Prucha, The Great Father: The United States Government and the American Indians. Vols. One and Two, unabridged (Lincoln: University of Nebraska Press, 1984) (1995), 891.

389Francis Paul Prucha, The Great Father, 894; Donald L. Parman Indians and the American West in the Twentieth Century. (Bloomington: Indiana University Press, 1994), 22.

Indian Office to oversee reservation reclamation projects.³⁹⁰ Thus, the "official" creation of the Indian Irrigation Service (later the Irrigation Division of the Bureau of Indian Affairs) began with these first appointments.³⁹¹ By 1911 the Office of Indian Affairs employed seven superintendents of irrigation to oversee project construction under the direction of a Chief Engineer. The number of superintendents reflects the rise of a regulated and efficient approach to irrigation projects across Indian country. The Chief Engineer was also an attorney charged with protecting Indian water rights for all Irrigation Service projects and advising on water rights.³⁹² In 1912 the Irrigation Service was divided into five irrigation districts for administrative purposes, with each responsible for projects within a defined geographic area.³⁹³

³⁹⁰In 1896, an appropriation was made to hire temporary irrigation engineers. The trend of yearly appropriations for temporary employees continued until 1900. The appropriation did not state specific qualifications until 1900. Porter J. Preston and Charles A. Engle, "Report of Advisors on Indian Irrigation on Indian Reservations," 156-157.

³⁹¹The Indian Irrigation Service was shifted back and forth between the land and field divisions within the Office of Indian Affairs until it was designated as a separate Irrigation Division in 1934. Janet A. McDonnell, The Dispossession of the American Indian: 1887-1934 (Bloomington: Indiana University Press, 1991), 75.

³⁹²Porter J. Preston and Charles A. Engle, "Report of Advisors on Indian Irrigation on Indian Reservations," 131-132; Francis Paul Prucha, The Great Father, 892; Donald L. Parman Indians and the American West, 22.

³⁹³Commissioner of Indian Affairs, Annual Report, 1907, 54-55; Porter J. Preston and Charles A. Engle, "Report of Advisors on Indian Irrigation on Indian Reservations," 145., District One, Yakima, Washington, and District Four, Los Angeles, California, were the districts involved with the development of Irrigation in Hoopa Valley. However, District One did not have official jurisdiction in California. Laurence F. Schmeckebier, The Office of Indian Affairs, 241, 281. The Bureau of Reclamation was primarily responsible for large projects on the Blackfeet, Fort Peck, Flathead, and Yuma Reservations. The remaining projects remained primarily under the control of the Indian Irrigation Service. The passage of the Reclamation or "Newlands" Act of 1902 and the creation of the Bureau of Reclamation had a profound impact on reservation irrigation projects throughout the United States. The Reclamation Act made no reference to irrigation on Indian lands, but enthusiastic reclamation supporters believed that irrigation was the answer to the failings of the Dawes Act. Reclamation of arid lands could assist native peoples on their road to self-sufficiency, they believed, and increase the value of reservation lands and individual allotments. The Bureau of Reclamation, like the Office of Indian Affairs, was within the Department of the

Water rights in the arid west were of particular concern to reclamation supporters, but within the Office of Indian Affairs, the concern for Indian water rights seemed peripheral to irrigation programs. The 1887 Dawes Act briefly considered Indian water rights. The Secretary of the Interior was charged with ensuring equal distribution of water among Indians where irrigation was necessary to the pursuit of agriculture. But particular rights to water within the context of Indian-white relations were not considered in the act. In 1908, the Supreme Court decided in *Winters v. United States* that there was a reserved right to sufficient water to irrigate reservation lands.³⁹⁴ But the *Winters* decision was not seen by the Office of Indian Affairs as an assurance that Indian water rights would be protected. Therefore, the Office of Indian Affairs' continued to file for water rights within states where reservations were located, much as any other user might apply for water, often to the detriment of Indian tribes.³⁹⁵ Moreover, the Office of Indian Affairs course of action reflects the fact that the Bureau never had a consistent approach to protecting Indian water rights, and often Indian water rights undermined by Office of

Interior. It made sense to reclamation supporters that large irrigation projects could be more efficiently designed, built and operated if under the direction of a single bureau.

On April 9, 1907, the Secretary of the Interior approved a plan whereby the Bureau of Reclamation would build and control major reclamation projects then within the jurisdiction of the Office of Indian Affairs. The Office of Indian Affairs continued to influence reclamation policy by deciding where irrigation projects were needed, assigning allotments to Indians within irrigable regions, fulfilling treaty obligations, and managing project finances. The Office of Indian Affairs also retained responsibility for the design and construction of small irrigation projects on reservations. Under the agreement, the Indian Irrigation Service, the arm of the Office of Indian Affairs charged with irrigation project responsibilities, was headquartered in Los Angeles. The Irrigation Service was to fulfill Office of Indian Affairs obligations under the 1907 agreement, and work closely with Bureau of Reclamation engineers. This arrangement continued until 1924 when the Office of Indian Affairs once again assumed control of reservation irrigation projects.

³⁹⁴Francis Paul Prucha. The Great Father, 893; Donald L. Parman, Indians and the American West, 22-26.

³⁹⁵Porter J. Preston and Charles A. Engle, "Report of Advisors on Indian Irrigation on Indian

Indian Affairs inaction.³⁹⁶

Federal irrigation development in Hoopa Valley should be seen within the larger context of the reclamation movement in the United States. During the nineteenth century, irrigation in Hoopa Valley was limited to small diversions of perennial streams. The passage of the Newlands Reclamation Act of 1902, and subsequently the 1907 cooperative project arrangement between the Bureau of Reclamation and Indian Affairs, brought the enthusiasm for reclamation to the Indian Office and Hoopa Valley. Now Indian Irrigation Service experts, with the assistance of Reclamation engineers, could design and build large-scale irrigation systems. In Hoopa Valley, reservation personnel embraced the idea of large-scale irrigation as the best way to save agriculture in the valley, the key to realizing the goals of the Dawes Act.³⁹⁷

Reservation administrators understood by the turn of the century that food-crops alone could not sustain the Hupa people. Animal husbandry emerged in the valley as an important component of Hupa subsistence without the encouragement from the Office of Indian Affairs.³⁹⁸ The later pursuit meant cultivating forage crops, particularly alfalfa, which required large amounts of water. Reservation administrators and farmers also

Reservations, 172-181.

³⁹⁶Donald J. Pisani, Water, Land and Law in the West: The Limits of Public Policy, 1850-1920 (Lawrence, Kansas: University of Kansas Press, 1996), 158-179.

³⁹⁷For a discussion of the Bureau of Reclamation and Bureau of Indian Affairs arrangement, and the relationship between the Reclamation Movement, Indian agriculture and the Dawes Act. See, Donald J. Pisani, Water, Land and Law in the West: The Limits of Public Policy, 1850-1920 (Lawrence, Kansas: University of Kansas Press, 1996), 158-179.

³⁹⁸The Office of Indian Affairs often considered stock-raising as counterproductive to its goal of creating yeoman farmers and destroying tribal relationships and pre-contact land use practices. Donald J. Pisani, Water, Land and Law in the West: The Limits of Public Policy, 1850-1920 (Lawrence, Kansas:

encouraged cultivating alfalfa to restore soils exhausted by years of dry-farming grains, and claimed that surpluses could be sold outside of the reservation. Essentially, the Office of Indian Affairs' goal of creating self-sufficient Indian agriculturalists remained unchanged, but the Indian Office now embraced irrigation, forage crops and animal husbandry as potential allies to realize their agricultural ideal.

The cooperative irrigation arrangement between Reclamation and the Office of Indian Affairs did not immediately translate into an irrigation system in the Valley. Efforts to implement a government irrigation program were haphazard, insufficient and moved forward at a bureaucratic pace. It was not until 1910 that the Department of the Interior first sent inspecting agent Joe H. Norris to Hoopa Valley to investigate conditions on the reservation and recommend needed changes. Norris made a survey of the valley, and in a brief two-page report observed that Hoopa Valley had several naturally divided fields that could be cultivated by small-scale diversion, but a large-scale irrigation project was not feasible. Norris recommended that the Hupas be encouraged to build small canals and divert water from valley streams, and noted that, "[s]ome effort has been made to do this, especially at Mill Creek," and officially recommended, "[t]he Superintendent should encourage more work of this kind."³⁹⁹ Soon thereafter, the Office of Indian Affairs ordered Superintendent Jesse Mortsof to follow Norris' advice. "In view of this report and recommendations made by Mr. Norris," wrote C.F. Hauke, "the Office

University of Kansas Press, 1996), 159-163.

³⁹⁹Report, "General Investigation of Conditions at the Hoopa Valley Indian Agency, Reservation, School and the Lands Under the Supervision of the Superintendent Located at Hoopa, California. September 27, 1910. Section 4. Water Propositions." RG 75 Office of Indian Affairs, CCF, 1907-1939. HV. Box 48. 16688-37-339 to 113634-13-341, #341. NA, Washington, D.C.

requests that you give some personal attention to encourage the Indians to construct these small irrigation systems for their own use."⁴⁰⁰ It was this time that agency farmer Davis began to encourage the Hupas to expand their irrigation efforts and plant alfalfa. But the Hupas resisted expanding their systems, mostly because allotments were not yet finalized so why labor on land that may be taken away?

The next year, the Indian Irrigation Service, now headquartered in Los Angeles, sent the regional Superintendent of Irrigation John J. Granville to Hoopa Valley to conduct a more detailed irrigation inspection. The investigation included surveying stream run-off and determining the best sites for power generation and water storage. The report noted that many valley streams could provide some irrigation, but most were too small for power development. Supply Creek and possibly Mill Creek were suitable for power generation sites, and a dam could be built on Supply Creek for a reservoir. The inspector noted that many springs along the foothills could be used for small-scale irrigation.⁴⁰¹ Yet this report, like that of Norris, was of limited use. After reviewing the report, W.M. Reed, Chief Engineer of the Indian Irrigation Service, stated in March 1913, that an entirely new investigation to realistically assess the irrigation possibilities in Hoopa Valley would have to be conducted.⁴⁰²

400Letter, C.F. Hauke, Second Assistant Commissioner of Indian Affairs, to Jesse B. Mortsolf, Superintendent, Hoopa Valley Agency. October 22, 1910. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 10, NA, Washington, D.C.

401Report, "Resources, Hoopa Valley Reservation, California. August, 1912. John J. Granville. Superintendent of Irrigation." RG 75 Office of Indian Affairs, CCF, 1909-1939, Box 48. File #341, NA, Washington, D.C.

402Letter, W.M. Reed, Chief Engineer, Indian Irrigation Service, to ?, March 29, 1913. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 10, Irrigation, File #341. NA, Washington,

In early 1914, L.M. Holt, Superintendent of Irrigation, visited the valley to enumerate the number of irrigable acres, stream flow and investigate the possibilities for power generation. Holt estimated that if an irrigation project were to include a hydroelectric facility to power irrigation pumps in the Trinity River, a total of 1768 acres could be irrigated at \$34.18 per acre. If this cost were prohibitive, Holt reported, the hydroelectric plant and pumping system could be dropped and a gravity system alone could irrigate 1480 acres at \$23.78 per acre. Holt's final estimate for completion of the project, including all equipment and materials, was \$34,200 for a gravity system, and \$61,430 if hydroelectricity and irrigation pumps were required. The report included maps, specific costs and material estimates for each individual field in the Valley, and described system design. The Holt report became the basis for future discussion of irrigation in Hoopa Valley.⁴⁰³

In reply to Holt's report, Indian Irrigation Service Chief Engineer W.M. Reed stated that he favored including hydroelectric power and pumping. However, Holt's cost estimate for the irrigation system if the pumping and power portion were included exceeded the \$35,000 Congressional limit for this type of project. Reed suggested that Holt make further inquiry to provide greater justification to convince Congress that the project was needed. If the power generation portion of the project could be made to serve more than irrigation needs, stated Reed, Congress might be more inclined to grant the

D.C.

⁴⁰³Letter, Holt to W.M. Reed, Washington, D.C., February 10, 1914; Letter, Holt to W.M. Reed, Washington D.C., February 18, 1914; RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 10. NA, Washington, D.C.; Report, Holt to J.M. Reed, Washington, D.C. February 14, 1914. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 49. File #341. NA, Washington, D.C.

appropriation. The Chief Engineer concluded by informing Holt that the appropriate legislation would not be sent to Congress until 1915, and so Holt still had time to investigate alternatives.⁴⁰⁴

In response to the Holt report, Assistant Commissioner of Indian Affairs E.B. Meritt asked Hoopa Valley Superintendent Edward Holden to suggest ways that electric power might be used elsewhere on the reservation. More importantly, Meritt asked if the proposed irrigation project would infringe upon any existing water rights. Holden assured the Assistant Commissioner that numerous uses could be made of electric power in the valley. Holden also stated:

There are no conflicting claims to the water which will be used and there is no irrigation being done, or power developed anywhere on the Trinity River which uses water from the river and there probably never will be. There is very little land along the river that can be irrigated and in most every case there is plenty of creek water for the purpose. The creeks which will be used for irrigating this Valley are located in the Reservation for almost their entire length, so that there is little possibility of the water being appropriated by any-one [sic] else... . I can see nothing that can, or will interfere [sic] with the development of the proposed irrigation.⁴⁰⁵

⁴⁰⁴Letter, W.M. Reed, to L.M. Holt, North Yakima, Washington, February 28, 1914. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 10. NA, Washington, D.C.

⁴⁰⁵Letter, E.B. Meritt, to Edward Holden, Washington, D.C., March 2, 1914; Letter, Edward Holden, to E.B. Meritt, Hoopa Valley, March 11, 1914. RG 75 Office of Indian Affairs, CCF 1909-1939,

Superintendent Holden reported that the Indians of Hupa Valley supported the idea of irrigation and seemed to think the cost was reasonable. The only problem was how the Hupas were to raise the money to pay for the project. And of course, allotments still had not been formally issued and it was expected that a new schedule would be enumerated and most Hupas would be assigned irrigated land.⁴⁰⁶

Plans to irrigate Hoopa Valley according to the design and estimates of L.M. Holt were not acted upon immediately. One reason was cost. In 1915, the new Agency Superintendent Jesse Mortsolf consulted the Hupas and assured the Commissioner of Indian Affairs that they supported the plan and would reimburse the government if a reasonable repayment schedule were offered. Mortsolf also explained that irrigation could rejuvenate exhausted soils, and provide the opportunity to cultivate a variety of crops while increasing the value of Indian allotments.⁴⁰⁷ Nevertheless, Holt's 1914 plan for irrigating Hoopa Valley continued to languish at the Bureau of Indian Affairs for years despite having the approval of the Commissioner of Indian Affairs and Secretary of the Interior. The central problem, according to the Indian Office, was that Holt's estimate of \$61,430 exceeded the \$35,000 Congressional cap placed on irrigation projects prohibiting the initiation of new projects above that amount. For this reason, stated E.B. Meritt in a letter to Superintendent Jesse Mortsolf, "...it has been impracticable to include

HV, Box 49. NA, Washington, D.C.

⁴⁰⁶Letter, Edward Holden, to E.B. Meritt, Hoopa Valley, March 11, 1914. RG 75 Office of Indian Affairs, CCF 1909-1939, Box 49. NA, Washington, D.C.

⁴⁰⁷Letter, Jesse B. Mortsolf, to Commissioner of Indian Affairs, Hoopa Valley, August 23, 1915.

the special appropriation necessary [for the Hoopa Valley Project] in either the Indian Bill for the fiscal year 1916 or 1917." Yet, Holt's estimate of \$34,200 (\$800 under the Congressional limit) to construct a gravity system that would water most of the Valley was not even considered by the BIA.⁴⁰⁸

By 1915, the allotment of Hoopa Valley was tied to the issue of irrigation. The Office of Indian Affairs surveyed Hoopa Valley for allotment in 1895, but these allotments were not approved by the Office of Indian Affairs. A new survey and schedule based upon the 1895 survey was completed in 1915, and the Valley fields divided into four-acre arable tracts based upon a formula that divided the number of eligible Hupas (400), by the number of estimated arable acres (1,600). Yet, these allotments were still not assigned for several years.⁴⁰⁹ One reason that allotting was delayed, at least after 1915 according to Superintendent Mortsolf, was that some Valley land was irrigable, and other land was not. The number of Hupas to be allotted continued to increase, but perhaps not all the Indians wanted to pay the costs of irrigation and thus would need allotments outside of the irrigable areas. Mortsolf believed that allotment should not go forward unless it was known for certain if the Irrigation Service was going to build the entire irrigation project or only part of it. The future value of irrigated allotments and non-irrigated allotments concerned Mortsolf. Obviously irrigated land

RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 49, NA, Washington, D.C.

⁴⁰⁸Letter, E.B. Meritt, to Jesse B. Mortsolf, Washington, D.C., June 26, 1916. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 49, NA, Washington, D.C.

⁴⁰⁹The History of the allotment in Hoopa Valley is complicated. It was not until 1918 that the 1895 allotment schedule was cancelled and new allotments made. However, assigning allotments to all eligible Hupas was never accomplished before allotting was cancelled in 1934. The irrigation issue was only one of many reasons that allotment was delayed. Byron Nelson, Jr., Our Home Forever, 153-158,

would be worth more on the open market, therefore non-irrigated allotments would have to be larger to assure equal value to the Hupas.⁴¹⁰ Thus, allotment stalled as did irrigation development.

In 1917, frustration over the allotment process convinced 60 Hupas to sign and forward a petition to the Commissioner of Indian Affairs asking that allotments be finalized. The Hupas expressed concern that future allotments should include, in addition to arable field lands, land suitable for grazing. This concern reflects the fact that animal husbandry had emerged as an important part of the Valley economy. But more importantly, the Hupas recognized that the proposed four-acre allotments were too small to provide them adequate support. But the Hupas' petition, and Mortsolf's expressed concerns about irrigation and allotments, came to naught. Instead, in April 1917, Commissioner E.B. Meritt wrote Mortsolf stating, "We [the Office of Indian Affairs] do not think it a good plan to make allotments on the reservation on the basis of future irrigation until money is appropriated for the [irrigation] project. Just as soon as the funds required for the project are made available, the matter will receive appropriate consideration."⁴¹¹

Essentially, the Hupas wanted allotment. Mortsolf wanted the Office of Indian

195-197; David Rich Lewis, Neither Wolf Nor Dog, 103-104.

⁴¹⁰Letter, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, July 12, 1916; Letter, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, January 28, 1918; RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 49, NA, Washington, D.C.

⁴¹¹Letter, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, July 12, 1916; Letter and Petition, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, March 12, 1917; Letter, Meritt to Mortsolf, Washington, D.C., April 4, 1917, RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 49, NA, Washington, D.C.

Affairs to commit to irrigating Hoopa Valley and deciding on the final plan design so allotments could be assigned to individuals interested in paying for irrigation before the project was built. The Office of Indian Affairs, however, wanted no movement toward allotment until funding was approved for the irrigation project. Ironically, in light of the previous exchange, the request to Congress to appropriate funds for the Hoopa Valley irrigation project was dropped by the Office of Indian Affairs from the Indian Appropriation Act for 1918. Thereafter, pressure upon the Office of Indian Affairs to allot Hoopa Valley, at least from Superintendent Mortsolf, increased. The Superintendent strongly urged the Commissioner of Indian Affairs to move forward with allotment. Mortsolf reminded the Commissioner that many Hupas had accepted the survey lines and were settled upon the lands accordingly. The uncertainty of allotment made the Hupas hesitant to improve their lands. The Superintendent blamed the dilapidated condition of agency fields and fences on Office of Indian Affairs allotment delays. Thereafter, Mortsolf dropped his support for approval of the irrigation project before allotment, and pushed instead for allotment regardless of irrigation project funding.⁴¹² In 1918, the Hupas were allowed to submit their allotment selections to an allotting agents, but had to wait until 1923 before some allotments were approved.⁴¹³

In February 1920, eighty-three Hupas sent a complaint to Congressman John

⁴¹²Letter, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, January 28, 1918. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 49, NA, Washington, D.C.

⁴¹³In 1918, Superintendent Mortsolf notified the Hupas that they could begin selecting allotments in Valley fields. By 1919, a list of 400 allottees was sent to the Office of Indian Affairs, but it was another three years before the list was accepted and partly approved, and then only 365 of the 400 names were assigned allotments. Fully 50% of the allottees were judged competent, and issued fee patents. Byron Nelson, Jr., Our Home Forever, 153-158, 195-197.

Barton Payne protesting the allotment process and land situation in Hoopa Valley. The complaint, which Payne forwarded to Commissioner of Indian Affairs Cato Sells, stated that allotments were too small and many people had no allotments at all. The Hupas asked for completion of allotments for those without land, and that additional land suitable for grazing be assigned to allottees. The Hupas stated that they understood that soon "the time is coming when the government will be made to throw this Reservation open and let each individual strive for themselves...". The Hupas continued, "Our Reservation at present is open for mining location and water rights and some of us are surrounded by such claims by people of the outside." Complaining of the mismanagement of Reservation resources and water rights by the Superintendent Mortsof, the Hupas stated, "It seems since this is an Indian Reservation we should be given first rights [to placer gravels and water] and notified by our Superintendent that such rights and claims on this Reservation can be taken and worked upon." The Hupas closed their complaint by reminding Payne, and through him, Commissioner Cato Sells, "that nearly every one of us have stock and we ask you to give each one [of us] land for grazing...before this reservation is thrown open to white settlers."⁴¹⁴

The people of Hoopa Valley understood that while they continued to live under the shadow of the Office of Indian Affairs, outside pressures were mounting to develop Valley resources and open the Reservation for settlement. The promise of irrigation had not been fulfilled, yet in 1919 Hoopa Valley reservation was opened to mineral leasing. Hoopa fears were justified. Placer claims were filed and by 1921, a year after the Hupas

⁴¹⁴Complaint, Hupa Indians to Representative John Barton Payne, February 21, 1920, Hoopa Valley. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 49, NA, Washington, D.C.

complained to Payne, the State Water Commission of California notified Superintendent Mortsof that it had received an application for a water rights appropriation from Tish Tang-a-Tang Creek within the reservation.⁴¹⁵ Superintendent Mortsof responded that it was doubtful if the Commission had any jurisdiction within the reservation. "However," stated Mortsof, "if the Commission can approve applications for Water Rights in a way that will not be prejudicial to the rights of the Indian residents of the reservation, I do not believe that objection would be made. At this time no water from this creek is being used."⁴¹⁶

The preceding incident exposes the precarious water rights situation that existed in Hoopa Valley and elsewhere on Indian reservations. Although in 1908, the United States Supreme Court decided the landmark *Winters* decision reserving sufficient water for Indian reservations to develop irrigable lands, the Indian Office continued to apply for water rights under state laws believing that the rights claimed under *Winters* were unenforceable.⁴¹⁷ Mortsof acted along lines set out by the Bureau of Indian Affairs, but this policy allowed the potential erosion of Hupa water rights because the Hupas were not using the water. The Hupas, of course, could not use the water until the Indian Office

⁴¹⁵Letter, Josephine Patten, Secretary, State Water Commission of California, to Superintendent, Hoopa Valley Reservation. San Francisco, January 21, 1921. RG 75 Bureau of Indian Affairs-California, Hoopa Valley Agency, Administrative Files, 1896-1926, [Administrative Subject Files, 1896-1926], Box 61, Series 51, File [Mining Correspondence, 1921] Federal Area Record Center, Pacific Sierra Branch, San Bruno, California.

⁴¹⁶Letter, Mortsof to State Water Commission of California, January 27, 1921, Hoopa Valley. RG 75 Office of Indian Affairs-California, HVA, Administrative Files, 1896-1926, [Administrative Subject Files, 1896-1926], Box 61, Series 51, File [Mining Correspondence, 1921]; "Notice of Application to Appropriate Water" State Department of Public Works, Division of Water Rights, Sacramento, California. Applications 2945, July 27, 1922. RG 75. Office of Indian Affairs-California, HVA, Land Correspondence, 1894-1926. Box 158, Series 64. File 77-89. FARC-PSB, San Bruno, California.

⁴¹⁷Donald J. Pisani, Water, Land and Law in the West, 161; Janet A. McDonnell, The

built an irrigation system.⁴¹⁸

The issue of Indian water rights again emerged in 1922 when a proposal emerged to divert a large amount of water from the Trinity River to the Sacramento River.⁴¹⁹ The application to appropriate and divert such an enormous amount of water from the Trinity River sparked protest from Superintendent Mortsolf, the Eureka Chamber of Commerce, and others. Mortsolf complained to the Commissioner of Indian Affairs that a planned irrigation project in Hoopa Valley would be harmed by the diversion. At the same time, Mortsolf called upon the Eureka Chamber of Commerce to protest the project based upon the threat to the fishing industry. The Superintendent wrote to Supervising Irrigation Engineer L.M. Holt asking him to move forward with an irrigation project to bring water to the four-acre field allotments in Hoopa Valley. The allotments, noted the Superintendent, were depleted from decades of grain farming, and were incapable of sustaining any crops unless irrigated. Since many of the allotments were held in fee, Mortsolf rightly claimed, there was a danger that they might be sold to outside interests.⁴²⁰ It was necessary, Mortsolf reasoned, to irrigate these allotment before they

Dispossession of the American Indian, 72.

⁴¹⁸For a concise discussion on the intricacies of the Winters' Decision, see: Norris Hundley, Jr., "The Dark and Bloody Ground of Indian Water Rights: Confusion Elevated to Principle," Western Historical Quarterly 9(October, 1978): 445-82; and Hundley, "The Winters' Decision and Indian Water Rights: A Mystery Reexamined," Western Historical Quarterly, 13(January 1982): 17-42.

⁴¹⁹Letter, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, December 4, 1922. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 81, NA, Washington, D.C.

⁴²⁰Mortsolf's prediction came true. In 1930, 496 acres of Hoopa Valley were owned by non-Hupas, and 26 acres were leased to outsiders. David Rich Lewis, Neither Wolf Nor Dog, 107.

might be sold so as to gain for the allottee the true market value of the allotment.⁴²¹

The Federal Power Commission (FPC), which was responsible for approving the diversion in question, assured Commissioner of Indian Affairs E. B. Meritt that the FPC would consider Indian water rights when deciding whether or not to issue a permit to divert the Trinity River. "The Federal Power Commission would, of course, desire to preserve the Indian Rights, as they may be found by your office," wrote O.C. Merrill, Executive Secretary of the FPC. "I shall be glad if you will send me such information as you desire concerning the rights and needs of the Indians, and the extent to which [the diversion] will interfere." Commissioner Meritt left it up to Mortsolf to gather enough data to demonstrate if the proposed diversion would harm potential Hupa water rights.⁴²² Mortsolf's only response was that if too much water was diverted from the Trinity, it might threaten a planned irrigation project in Hoopa Valley, and adversely affect the salmon upon which the Hupa depended for much of their subsistence.⁴²³

In an effort to obtain information to bolster his protest against the diversion,

421 Letter, Mortsolf to Commissioner of Indian Affairs, April 20, 1923, Hoopa Valley. RG 75 Office of Indian Affairs, CCF 1907-1939, HV, Box 49, File 341; NA Washington, D.C.; Letter, Mortsolf to W.L. Miller, Secretary, Eureka Chamber of Commerce, February 10, 1923, Hoopa Valley. RG 75 Office of Indian Affairs-California, HVA, Land Correspondence, 1894-1926. Box 158, Series 64. File 77-89. FARC-PSR, San Bruno, California.

422 Letter, Herbert V. Clotts, Supervising Engineer, to Commissioner of Indian Affairs, March 14, 1922, Los Angeles; Letter, Meritt to Mortsolf, Washington D.C., January 17, 1923; Letter, Merrill to Meritt, January 23, 1923, Washington, D.C. RG 75 Office of Indian Affairs, CCF 1909-1939, Box No. 81. NA, Washington, D.C.; Letter Meritt to Mortsolf, Washington D.C., January 31, 1923. RG 75 Office of Indian Affairs-California, HVA, Land Correspondence, 1894-1926. Box 158. Series 64. File 77-89. FARC-PSB, San Bruno, California.

423 Letter, Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, December 29, 1922. RG 75, Office of Indian Affairs-California, HVA, Land Correspondence 1894-1926. Box 158, Series 64. File 77-89. FARC-PSR, San Bruno, California.

Mortsolf asked the Indian Irrigation Service to provide data to support him. Herbert V. Clotts, Supervising Engineer of the Irrigation Service, who worked extensively on the notoriously disastrous and completely flawed San Carlos Project for the Pima Indians of Arizona, consulted his files and replied that he could only guess at the exact water use. Clotts, without possessing any accurate information, liberally estimated that there were perhaps two hundred acres irrigated in Hoopa Valley, but he did not know if the water was diverted from the Trinity River or Valley streams. Clotts reasoned, however, that the proposed upstream diversion of the Trinity did not threaten the water available to Hoopa Valley because so little of the arable land in the Valley was under irrigation. Furthermore, Clotts asserted, the Trinity River contained sufficient run off to support diversion upstream and irrigation on the Reservation.⁴²⁴

While outside interests sought to appropriate Hupa resources and the waters of the Trinity River, the Indian Irrigation Service finally moved to develop an Irrigation system for Hoopa Valley.⁴²⁵ In 1922, L.M. Holt, the Supervising Engineer responsible for the original 1914 plan for irrigating Hoopa Valley, asked Irrigation Service Chief Engineer W.M. Reed to fund a reduced irrigation project for the valley with reimbursable funds

⁴²⁴Letter, Herbert V. Clotts, to Commissioner of Indian Affairs, Los Angeles, March 14, 1922, RG 75 Office of Indian Affairs-California, HVA, Land Correspondence, 1894-1926. Box 158, Series 64. File 77-89. FARC-PSR, San Bruno, California; Letter, Mortsolf to Herbert V. Clotts, Supervising Engineer, Hoopa Valley, February 27, 1923. RG 75 Office of Indian Affairs CCF 1909-1929, HV, Box No. 81, NA, Washington, D.C.

In 1944 Agency Superintendent O.M. Boggess adhered to the same position regarding Indian water rights and the diversion of the Trinity River at Lewiston. Letter, Boggess to Commissioner of Indian Affairs, Eureka, California, Mat 23, 1944. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 50, File 341, Part D. NA, Washington, D.C.

⁴²⁵The Office of Indian Affairs often moved forward with irrigation projects to put Indian water right to beneficial use to protect these rights in a manner acceptable to State law. See: Janet A. McDonnell, The Dispossession of the American Indian, 72.

held by the Indian Service.⁴²⁶ Holt suggested that one or more of the individual "fields" in Hoopa Valley, called irrigation units, could be easily irrigated for less money than attempting to irrigate all arable lands in the Valley. The proposal called for the diversion of Mill Creek to irrigate Campbell, Norton and Mesket fields. The plan embraced 850 acres, and dropped the original hydroelectric power facility and the pumps that would have tapped the Trinity River in the 1914 plan.⁴²⁷

Holt's suggestion was answered with orders for yet another survey of the irrigation possibilities and detailed cost estimates of the proposal. Reed called for a reduced "test" program until the Hupas could show they would efficiently use irrigation. "The Indians have not yet had an opportunity to show how efficiently they will use irrigation facilities on the Hoopa Reservation," stated Reed, "and, therefore, I believe we should make a test with a single project in the beginning."⁴²⁸ Reed ordered Holt to investigate irrigation of Norton and Mesket Fields only. Once completed, Holt estimated that the total cost for the diversion of Mill Creek into Meskat and Norton Fields would be

⁴²⁶On January 2, 1925 the Federal Power Commission issued a preliminary permit to W.H. Simpson to appropriate water from the Trinity River for power and irrigation. The project called for reservoirs, diversion systems and power generation facilities on the upper Trinity River. Designated "Project No. 247", the plans closely resembled the future Trinity Diversion of the Central Valley Project. "Memorandum for the Press". RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box No. 81, NA, Washington, D.C.; Letter, Meritt to Rastall, Washington, D.C., February 4, 1925. RG 75 Office of Indian Affairs-California, HVA, Land Correspondence, 1894-1926. Box No. 158, Series 64. File 77-89. FARC-PSR, San Bruno, California.

⁴²⁷Letter, L.M. Holt to W.M. Reed, Yakima Washington, May 30, 1922; Letter, Holt to Reed, Yakima, Washington, June 26, 1922. RG 75 Office of Indian Affairs CCF, 1909-1929, HV, Box 10, NA Washington, D.C.

⁴²⁸Letter, Reed to Holt, Los Angeles, July 10, 1922. RG 75 Office of Indian Affairs CCF, 1909-1929, HV, Box 10, NA Washington, D.C.

\$14,800.⁴²⁹

After reviewing the 1922 survey, the Irrigation Service decided that construction of a canal from Mill Creek to water Meskat and Norton fields was the first order of business. This irrigation system was less than that envisioned by Holt, but even before construction began, additional survey work was conducted in 1924 resulting in still another project of more complicated design than the original 1914 Holt Plan.⁴³⁰ Much of the additional work contemplated related to electric power and water supply for the future needs of the agency school, hospital and sawmill. Irrigation, while still of central concern, was only part of a multiple use philosophy for the water of Hoopa Valley streams embraced in the 1924 plan.⁴³¹

Chief Engineer Reed approved the 1924 Plan on September 19, 1924. The plan called for irrigating 805 acres at a cost of \$46.00 per acre. \$18,000 was appropriated to start the work in 1925, and soon thereafter construction crews comprised of Hupa laborers under white supervision began building the Mill Creek headgate, flume and canal. Final work on field laterals and outlet boxes remained to be finished by allottees because of funding delays. The Hupas provided the labor for the project in anticipation

⁴²⁹Letter, Holt to Reed, Yakima Washington, September 12, 1922. RG 75 Office of Indian Affairs CCF, 1909-1929, HV, Box 10, NA Washington, D.C.

⁴³⁰Reeds suggestion that only Meskat and Hostler fields be irrigated was more realistic than attempting to include Campbell Field in the plan. Campbell Field is far south and on the opposite side of the Trinity River from Mill Creek. David Rich Lewis, Neither Wolf Nor Dog, 90.

⁴³¹Report, Herbert Clotts to Commissioner of Indian Affairs, Los Angeles, July 31, 1925. RG 75 Office of Indian Affairs, CCF 1909-1929. HV. Box 49. NA, Washington, D.C.

of receiving water for their fields.⁴³²

Funding for the project was uncertain, and hampered construction efforts. During 1925 construction on the Mill Creek Irrigation Unit moved forward, but funding uncertainty for fiscal year 1926, and shortages of materials, caused the project supervisor to predict that construction would be halted before any benefit could be realized. An additional \$20,000 was eventually appropriated, however, and work continued on the system in 1926.⁴³³ On June 22, 1926, P.B. Edson Skiff, the construction supervisor for the irrigation project, informed Superintendent Keeley that the project was complete. The Irrigation Service turned over system maintenance and operation to the Superintendent and those allottees who were project beneficiaries, and responsible for reimbursement for construction costs. The Hupas, stated Skiff, would learn to efficiently use the system in time.⁴³⁴

The completed project was far less than envisioned in the 1914 Holt Report, and did not include the power generation facilities encompassed in the 1924 plan. During actual construction in 1925-26, changes were made in project design to compensate for funding constraints and the topography of Hoopa Valley. The number of acres that were originally to be irrigated fell from 805 to approximately 625 irrigable acres on 175

⁴³²Letter, W.M. Reed to Commissioner of Indian Affairs, Los Angeles, August 11, 1926. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 82. NA Washington, D.C.

⁴³³Letter, Clotts to Rastall, Los Angeles, February 28, 1925; Letter, Clotts to Commissioner of Indian Affairs, Los Angeles, May 7, 1925; Letter, Clotts to Commissioner of Indian Affairs, Los Angeles, July 15, 1925. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 49. NA, Washington, D.C.

⁴³⁴Letter, Skiff to Keeley, Hoopa, California, June 22, 1926. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 82. NA Washington, D.C.

allotments. The system diverted water from Mill Creek and delivered it to Norton, Mesket and Hostler fields on the east side of the Trinity River by pipeline, flume and ditch. Supervising Engineer Herbert Clotts optimistically reported, "[t]he Indians have, in the past, utilized such facilities as they could develop themselves to quite good advantage, and with the proper start it is believed that they will make a great success of this new project."⁴³⁵

One year later, however, P.B. Skiff returned to Hoopa Valley to oversee extensive repairs on the system. Flooding during the spring thaw had clogged or destroyed much of the system, and a month was required for repairs. Skiff, in a report on the system condition to Herbert Clotts, bitterly complained that the system was not being properly used or maintained because the Hupas did not have adequate instruction.⁴³⁶ Furthermore, only a few Hupas were using the system to irrigate fields, and they did not want to spend more money to repair it. Chief Engineer W. M. Reed forwarded the report to the Commissioner of Indian Affairs, and added that all efforts to irrigate the Valley would come to nothing if something were not done to bring the system to full use. Reed stated that \$45,000 had been spent on the system, but it was too small to justify hiring a full-time irrigation service employee to maintain the system and it should be, "handled by the

⁴³⁵Letter, Skiff to Keeley, Hoopa, California, June 22, 1926. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 82. NA Washington, D.C., Letter, Herbert Clotts to Commissioner of Indian Affairs, Los Angeles, June 29, 1926. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 82. NA Washington, D.C.

⁴³⁶Letter, Skiff to Herbert Clotts, Los Angeles, May 24, 1927. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 49. NA Washington, D.C.

agency. . . .⁴³⁷

Problems with maintaining the system continued, however, prompting the Commissioner of Indian Affairs to chastise the Superintendent of Hoopa Valley Agency for not looking after the system.⁴³⁸ However, the Hupas use of and need for the irrigation system depended in part upon the amount of rain received during the spring. The Mill Creek system was never used to its full potential, and often only watered fields when dry conditions arrived late in the growing season. The Hupas, for good reason, were not satisfied with the Irrigation Service project. While most fields in the Valley were irrigable to some degree, the system did not reach majority of arable land, and irrigation farming was a technique in which the Hupas had little experience.⁴³⁹ It was easier and cheaper for the Hupas to continue dry farming, a pattern repeated on most reservation irrigation projects.⁴⁴⁰ In 1930, 1,854 acres were under cultivation in the

437Letter, Clotts to Commission of Indian Affairs, Los Angeles, June 13, 1927. Note handwritten statement by W.M. Reed on bottom of letter. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 49. NA Washington, D.C.

438Letter, Commissioner of Indian Affairs to John D. Keeley, Washington, D.C., ?, 1929, RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 10, NA, Washington, D.C.; John Carpenter, a Hupa and holder of an irrigated allotment, was construction foreman on the irrigation system and continued to maintain the system on an unofficial basis for a short time. Letter, Carpenter to Skiff, Hoopa Valley, June 9, 1927. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 49. NA Washington, D.C.

439Commissioner of Indian Affairs to John Keeley, 1929, Washington, D.C.? RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 10, NA Washington, D.C.; Minutes, Hoopa Business Council, October 5, 1933, and March 5, 1936, Hoopa Valley; Letter, G. Marshall, to William Zimmermann, October 7, 1933, Hoopa Valley; Memorandum, Herbert Clotts, 1933?. Los Angeles. RG 75 Office of Indian Affairs CCF 1909-1929, HV, Box 4, NA, Washington, D.C; Letter, O.M. Boggess, to Commissioner of Indian Affairs, Hoopa Valley, May 23, 1944. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 50, 341, Part D., NA, Washington, D.C.

440Janet A. McDonnell, The Dispossession of the American Indian, 81-83.

Valley, but only 41 acres were under irrigation. The total number of acres farmed, and the number of acres under irrigation declined even further in 1931, and efforts by agency farmers to encourage the Hupas to use more irrigation and diversify crops failed. By 1934, only 304 acres were cultivated in all of Hoopa Valley.⁴⁴¹

The limited use of the Irrigation Service system in Hoopa Valley can partly be linked with the general decline in Valley farming during the 1930s. Markets were always marginal for Hupa farmers and the Depression hurt them even more. Environmentally, farming in Hoopa Valley was always challenging, especially without irrigation. The irrigation system built by the Indian Irrigation Service was limited in coverage, and its final construction costs - \$60 per acre - was almost twice the original estimate. Therefore, when irrigation was available to an allottee, the reimbursement costs were often prohibitively expensive.⁴⁴² Some allottees combined their fields to grow crops more efficiently, but combining allotments was not always realistic. Non-Indian land holding probably influenced farming in the Valley. Finally, the national economic crisis of the 1930s drew Hupas away from farming.

By 1935, every Hupa on the Reservation was working in some way for the federal government. Some emergency work was directed to the improvement of Valley irrigation systems, but farmed acreage did not increase substantially. The Hupa Business Council requested that relief money be spent on the improvement of irrigation in the

441 David Rich Lewis, Neither Wolf Nor Dog, 109.

442 Janet A. McDonnell, The Dispossession of the American Indian, 80-81. The inability of many Native peoples to pay the heavy debit placed upon them by irrigation system construction was common on most projects.

Valley, but the Irrigation Service did not respond favorably. Herbert Clotts, Assistant Director of the Irrigation Service, stated that money should not be spent to repair or improve the existing system because it had been neglected and underutilized since its construction. The Hupas should be able to maintain the system themselves, stated Clotts, and any new construction in the Valley should not be undertaken with Public Works funds because the remaining streams in the valley were not a reliable source of water, and thus could not support a substantial irrigation system. Clotts concluded, "It would be possible but not practicable to pump from the Trinity River," and he did not believe "...that there is any irrigation project on this reservation which could be developed to advantage with an allotment of Public Work funds."⁴⁴³ Some emergency work on the Reservation was directed to irrigation in the during the 1930s, but with little effect. In 1938, 226 acres of the 520 under cultivation were irrigated - most farmers were producing forage crops.⁴⁴⁴ The system eventually was abandoned by the Hupas themselves.⁴⁴⁵

⁴⁴³Memorandum, Herbet V. Clotts, Los Angeles ?, 1936. RG 75 Office of Indian Affairs, CCF 1909-1929, HV, Box 4, NA, Washington, D.C.

⁴⁴⁴Letter, Commissioner of Indian Affairs to John Keeley, 1929, Washington, D.C.? RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 10, NA Washington, D.C.; Minutes, Hoopa Business Council, October 5, 1933, and March 5, 1936, Hoopa Valley; Letter, G. Marshall, to William Zimmermann, October 7, 1933, Hoopa Valley; Memorandum, Herbert Clotts, 1933?. Los Angeles. RG 75 Office of Indian Affairs CCF 1909-1929, HV, Box 4, NA, Washington, D.C; Letter, O.M. Boggess, to Commissioner of Indian Affairs, Hoopa Valley, May 23, 1944. RG 75 Office of Indian Affairs, CCF 1909-1939, HV, Box 50, 341, Part D., NA, Washington, D.C; David Rich Lewis, Neither Wolf Nor Dog, 107-111.

⁴⁴⁵During the 1940s, the Hupa Business Council encouraged farming to continue, and abolished the position of Agency Farmer in 1943. The Council created the Hoopa Farm Enterprise to encourage farming by making farm loans available, and purchased farm equipment that it intended to rent-out to farmers in the Valley. This program failed within two years, and the Hoopa Farm Enterprise folded in 1954. By 1960, the Business Council discontinued tribal expenditures to encourage farming in Hoopa Valley, and turned most of its attention elsewhere. In Hoopa Valley as elsewhere, the irrigation program

The water diversion system built by the federal government was underfunded, inadequately planned, poorly maintained, and did not achieve the desired results. Although agriculture became a central component of the reservation economy, (it was well-established in the Valley at the time the reservation was created) it never assumed the place within reservation society that the Office of Indian Affairs hoped it would. Instead, the cultivation of crops for human consumption essentially died out (except to small garden plots) and was replaced with feed crops. The system of irrigation ditches, which were never adequate to accomplish the goals of the federal government, eventually fell into disuse, or were utilized in ways far more limited than envisioned by their early proponents. Hoopa Valley shows the Trinity River was not used for irrigation but others were looking to the Trinity River as a source of water for projects far outside of the Basin.

Logging, mining and irrigation – three possible avenues for surviving and controlling one’s own destiny, led the Hupas farther away from their pre-contact relationship with the Trinity River and the Hoopa Valley. The sporadic attempts by the federal government to “modernize” the Hupa by imposing economic programs upon them failed; however, perhaps they were doomed from the beginning. The federal government never funded its own programs adequately, rarely considered conditions on the ground in Hoopa Valley (physical, economic, geographic, topographic and cultural), ignored the fact that the Hupa could direct their own lives if adequately assisted and left to direct themselves. All three activities discussed herein show that when the Hupa were

implemented by the Office of Indian Affairs was a failure., David Rich Lewis, Neither Wolf Nor Dog., 108-112. For a general discussion on the failure of Indian irrigation, see: Janet A. McDonnell, The Dispossession of the American Indian, 85-86.

successful, it was on their own initiative, and when they failed, it was usually because the federal government reacted to their success and tried to impose its own ideas on what the Hupas were doing. Finally, the long delay in allotting the Hupa people led them to act conservatively in expending their own labor and resources upon projects on land that might be taken away from them at the whim of a bureaucrat sitting in the offices of the BIA in Washington D.C.

Mining and logging degraded the Trinity River. As the health of the river deteriorated, federal initiatives failed to protect Indian resources to provide an adequate alternative to traditional life ways. By the 1930s, the Hupa were still struggling with the consequences of the disruption of their home, life way and culture, yet they were willingly stepping into the new world that was coming to them, and they took advantage of opportunities as they defined and saw them on their own terms. They continued practicing as much of their traditional life way as possible, but were never reluctant to adopt modes of earning a living that would allow them to maintain themselves in their valley home. Developments outside the Trinity River Basin and up-river in the former placer mining region would alter the lives of the Hupas in ways which they could not predict or control.

Chapter 6

Over the Hills and Far Away: the CVP and the Trinity River Basin, 1920-1964

By the opening decade of the 20th century, development out the Basin began pulling at the resources within the Trinity River region. Of particular interest was the water flowing down the Trinity River into the Klamath and then to the sea. California, which had been the worlds' leading gold producing region had, by the 20th century, become an agricultural empire with wheat, citrus, nuts, fruits and vegetables growing in the rich soils of the Central Valley. California as a whole does not receive rain in the quantities needed for successful dry-farming agriculture during the growing season and so farmers began developing irrigation agriculture to ensure successful crops. By the early 20th century, irrigated agriculture had become the backbone of California's agricultural empire, and as more farmlands were opened, more irrigation water was needed. Large irrigation projects, funded by the State and the federal government, permitted the continual expansion and evolution of California's agricultural economic sector until the family farm gave way to true agribusiness and the rise of powerful water districts who could, through political pressure, sway the debate over public funding of huge water diversion projects in their favor. By the mid-1950s, although most of California's rivers were already dammed and diverted, the Bureau of Reclamation, the Army Corps of Engineers, and the State of California began competing for the last viable water development projects remaining in the State regardless if those projects were needed, wanted, warranted, and economically viable. Moreover, these huge bureaucratic water behemoths moved forward with projects regardless of the advice of their own staffers as to the potential for environmental harm. In the Trinity River Basin best

exemplifies this bureaucratic water project feeding frenzy that peaked with the push for, and authorization of, construction of the Trinity River Division (TRD) of the Central Valley Project (CVP) in 1955.

Historically, within the Trinity River Basin, water diversion had been primarily an activity carried out by mining and logging companies who diverted water from the Trinity River for washing gravels and to fill log ponds. These activities caused pollution and fouled the waters of the Trinity, but most of the water was returned to the Trinity River and eventually reached the Pacific Ocean. There were no attempts to wholly divert the waters of the Trinity River and move it to another location. Rather, the tributary streams of the Basin were usually tapped for hydraulic mines and logging operations. Water diversion for agricultural purposes was almost non-existent in the Trinity River Basin because of a lack of arable land. Where water was diverted, such as in the Hoopa Valley, springs or streams tributary to the Trinity provided the limited amounts of water needed for agriculture. Hoopa Valley contains the largest area of contiguous arable land along the Trinity River, but dry-farming was the preferred method of farming and, as we have seen, government efforts to build and run an irrigation system failed.⁴⁴⁶

The two factors that eventually lead to the diversion of the Trinity River were the development of hydro-electric power in the United States, and the agricultural development of the Central Valley. During the early twentieth century, the proliferation of the use of electricity for domestic and industrial purposes created a rising demand for

⁴⁴⁶The federal government, through the Irrigation Division of the Bureau of Indian Affairs, built an irrigation system for the Hoopa Valley Reservation in the 1920s. The system, which was essentially a failure, did not draw water from the Trinity River. Rather, it tapped nearby streams.

electricity. In the Trinity River region, the first producers of hydroelectric power were the industrial hydraulic mining companies. For example, the Cie Fse Hydraulic Mining company installed an electric generating system on its property near Junction City. Using its extensive water-conveyance system to power a water-driven electric generator, the Cie Fse operated twenty-four hours a day. As electrical appliances became more common for domestic applications in the United States, demand for electricity rose and enterprising individuals began to move into the new niche of hydro-electric power production and distribution. Since many mines, such as the Cie Fse, had installed hydro-power systems, these properties were the first to be converted to providing electricity for sale.⁴⁴⁷

In 1904, a group of California businessmen purchased the property and all related support facilities of the Cie Fse hydraulic mine and opened the first commercial hydroelectric power generation facility in the Trinity River Basin. Located near Junction City, the operation was named the North Mountain Power Company.⁴⁴⁸ The site included 1200 acres of land, extensive water rights, ditches, flumes, and siphons conveying water from Canyon Creek, and most significantly, an existing electric generation system originally used to light the mine for nighttime operation. The company built a powerhouse down river from Junction City on the main stem of the Trinity River and began selling electricity to Eureka and other communities on the coast, as well as, other customers in the region. The Hupas were not connected to this early

⁴⁴⁷Jones, Alice Goewn, ed., Trinity County Historic Sites (Weaverville: Trinity County Historical Society, 1981), 184.

⁴⁴⁸Jones, Alice Goewn, ed., Trinity County Historic Sites (Weaverville: Trinity County Historical Society, 1981), 184.

power grid. Rather, they utilized a pelton electric generating wheel set up on Supply Creek and so had an unreliable electrical supply while power lines were built nearby.⁴⁴⁹ The North Mountain Power Company supplied most of the electricity in northwestern California until the Pacific Gas and Electric Company purchased the North Mountain Power Company in 1919.⁴⁵⁰

Soon after the North Mountain began transmitting electricity to Eureka, the federal government reacted to the rising demand for hydro-power by withdrawing potential water-power sites within the newly created Trinity Forest Reserve (later the Trinity National Forest) and other forests throughout California and the West.⁴⁵¹ It should be noted that the rise in the development of hydro-power coincided with the Progressive Movement and a rising awareness of the potential threat to the public interest posed by unregulated development of the nations' natural resources. To prevent speculation and the inevitable inefficiency, inadequate funding and poor planning of most private hydroelectric projects, the federal government, through the General Land Office and under the guidance of the United States Geological Survey and the United States

449For early development of hydroelectric power on the Trinity River and in Northern California, see Frederick Hall Fowler, Hydroelectric Power Systems of California and their Extensions Into Oregon and Nevada Water Supply Paper #493. Washington, D.C.: U.S. Geological Survey, 1923.

450*Trinity Journal*, March 16, 1907; April 13, 1907; June 1, 1907, April 3, 1908. See James C. Williams, Energy and the Making of Modern California (Akron, Ohio: University of Akron Press, 1997), 182. For an informative discussion of the early activities and development of hydroelectric power in California, see James C. Williams, Energy and the Making of Modern California, 168-267. Transmitting power from remote sites to cities accelerated after the adoption of alternating current allowed electricity to be sent over long-distances.

451The Federal Government regulates of public lands, and so controls the right to charge fees for using public resources to produce hydroelectric power. It also issues permits for structures and transmission lines. This precedent was established only after bitter legislative battles. See Jerome G. Kerwin, Federal Water-Power Legislation (New York: Columbia University Press, 1926).

Forest Service, identified and withdrew from all entry sites that were potentially suitable for reservoirs and hydroelectric power generation along Trinity River and its tributaries. It is worth noting that sites designated for power generation on publicly-owned lands within the boundaries of the Forest Reserve were withdrawn from development well before they were surveyed.

The federal government initiated withdrawals not to prevent development of power sites, but to prevent a water-power site land rush and the inevitable speculation that would surely follow.⁴⁵² In fact, in the early years of the twentieth century, a frenzy of activity that might be termed the "Second Gold Rush" occurred. Individuals and corporations scrambled to claim potential water-power sites throughout California, many on public lands, and file for water rights on the rivers and streams flowing through them. The best sites, of course, were those where water could be impounded by dams to create a high head for producing hydroelectricity, or streams that could be diverted through flumes and pipes to a reservoir site where a power facility could be erected.⁴⁵³

The *Arcata Union* reported on January 6, 1912, that under an Executive Order dated November 25, 1911, a total of 8,643.65 acres of land along the Trinity River was withdrawn from public entry and reserved for water power sites.⁴⁵⁴ Oddly enough, the land withdrawn from public entry included the Hoopa Valley Indian Reservation. The

⁴⁵²Before passage of the 1920 Water Power Act, hydropower interests claimed that the government retarded hydro-power growth. Yet during this period, there was more hydropower produced than could be used. This was especially true in California. See Jerome G. Kerwin, Federal Water-Power Legislation, 39-41.

⁴⁵³James C. Williams, Energy and the Making of Modern California, 168-267.

cursory survey which led to the withdrawal noted that a dam could be erected in the Trinity River canyon north of Hoopa Valley and then the Reservation could be flooded to create one of the largest reservoirs on the northwest coast.⁴⁵⁵ After the withdrawals were made, only then did the government attempt to accurately survey the region for potential water-power sites.⁴⁵⁶ After withdrawing the sites from entry, they were withheld from development until a system of fees for usage were devised and agreed upon. Not until 1920, after bitter debate over the legality of imposing use fees upon power companies operating on public lands ended in the favor of the government, did the federal government create the Federal Power Commission through the 1920 Water Power Act. This act codified a standardized method for licensing projects for power development on public lands in National Forests.⁴⁵⁷

⁴⁵⁴Arcata Union, January 6, 1912.

⁴⁵⁵The Agent at Hoopa Valley encouraged the U.S.G.S. to study possible power sites in Hoopa Valley before the BIA allotted the valley to individual Hupas. Letter, Jesse B. Mortsoff to Commissioner of Indian Affairs, December 24, 1910. RG 57. Records of the U.S. Geological Survey. Water and Power Branch. Conservation Division. Records Concerning Land and Stream Classification, 1900-1961. Entry 384. Box 54. D-100. 10-N-2 to 11-A-12. NA, College Park, Maryland. Hoopa Valley was among those areas withdrawn from entry as a potential water-power site even though the reservation was not "public" land, nor had the valley been allotted and thrown open to settlement through the sale of "surplus" lands. The power site was designated Site #116, and the withdrawal hampered economic development in the valley until the 1930s.

⁴⁵⁶*Trinity Journal*, October 18, 1913. The U.S.G.S. initiated preliminary surveys of the first thirty miles of the Trinity River from its confluence with the Klamath, and the South Fork of the Trinity in 1921. The State of California made an extensive survey of 110 miles of the Trinity River for dam sites in 1922 and found eight sites suitable for dam construction. Two sites, the Fairview Dam Site and the Lewiston Dam Site, were later selected for the construction of the TRD of the CVP. See Benjamin Jones and Randolph O. Helland, Preliminary Index to River Surveys Made by the U.S. Geological Survey and Other Agencies. Water Supply Paper 558. Washington, D.C.: U.S. Geological Survey, 1926.

⁴⁵⁷The issue of water-power withdrawals has not been adequately addressed within any scholarly study. Perhaps the best discussion is found in Samuel P. Hays, Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920 (Cambridge: Harvard University Press, 1959). For a specific discussion of the battle over leasing fees, see pages 252-256. See also Jerome G. Kerwin, Federal

Although the North Mountain Power Company, and later the Pacific Gas and Electric Company, provided power in the region, the development of additional hydro-power sites on the Trinity River was slow. However, after the 1920 Water Power Act, all that changed.⁴⁵⁸ The importance of the Water Power Act of 1920 to the development of rivers in California is demonstrated by the activity along the Trinity River soon after its passage. While the Trinity River Basin was sparsely populated, it was rich in potential sites for hydroelectric power. Once the Water Power Act codified a systematic method for permitting and leasing water-power sites on public lands, interest in damming the Trinity River for its hydroelectric power increased significantly.

In 1921, a year after Congress passed the Water Power Act, the United States Geological Survey (USGS) began surveying and mapping potential hydroelectric dam and reservoir sites on rivers throughout the United States. On the Trinity River, the USGS surveyed a total of 31 river miles and identified one site within the survey area at Horse Linto Creek suitable for hydroelectric generation. The next year, the State of California began its own investigation of the Trinity River. The California Power Board surveyed a total of 110 river miles from the mouth of the Trinity at Wietchpec to 20 miles above the town of Lewiston. State surveyors identified a total of eight sites on the main stem of the

Water-Power Legislation, for the legislative history of the battle over water-power fees.

⁴⁵⁸*Trinity Journal*, December 5, 1914. In 1914, after building hydro-power projects in the northeastern part of the state, the California-Oregon Power Company (COPCO) applied to Trinity County for a franchise to produce hydro power on the Trinity River. Sources investigated do not indicate if the franchise was granted. For delays in applications caused by uncertainty over permits and fees, see Samuel P. Hays, Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920, 252-256; and James C. Williams, Energy and the Making of Modern California, 245, 329, 418n 12.

river suitable for hydroelectric dams and reservoirs.⁴⁵⁹

While federal and State surveyors investigated the Trinity River, the first and most significant proposal for privately developing hydroelectric power on the main stem of the Trinity River was reported in the *Trinity Journal* on October 8, 1921. W.H. Sampson⁴⁶⁰, a former Tehama County Supervisor, applied to the State Water Commission for water rights on the Trinity River and several tributaries for a project to produce hydroelectricity. Soon after the news of the proposal broke, the *Trinity Journal* began a series of reports describing the details of the proposal, including costs, facilities, and locations.⁴⁶¹ Over the next two years, Sampson continued to refine his plans and apply to the appropriate federal, State and county boards for permits needed to build his facility. The *Trinity Journal* reported that project, which would cost an estimated three million dollars, would consist of four power houses and numerous dams, and would also use existing flumes, reservoirs and ditches formerly owned by the now abandoned LaGrange hydraulic mine. The editors of the *Trinity Journal* enthusiastically supported the project:

⁴⁵⁹Benjamin E. Jones, and Randolph O. Helland, Preliminary Index to River Surveys Made by the U.S. Geological Survey and Other Agencies Water Supply Paper #558, Washington, D.C., U.S. Geological Survey, 1926. The eight sites identified were: Fairview Dam site: 6 Miles above Lewiston in Sec. 10., T. 34 N., R. 8 W; Lewiston Dam Site: in Sec 8., T. 33 N., R. 8 W; Steiners Flat Dam Site: in Sec 34., T 33 N., R. 10 W; Helena Dam Site: in Sec. 32, T. 34 N., R. 11 W; Swede Dam Site: in Sec. 23, T. 5 N., R. 7 E; Ironside Mountain Dam Site: in Sec. 35, T. 6 N., R. 6 E; Salyer Dam Site: in Sec. 19, T. 6 N., R. 6 E; Beaver Dam Site: (Hoopa Valley Reservation) five miles above the mouth of the Trinity River in Sec. 35, T. 9 N., R. 7 E. The California Department of Public Works, Division of Engineering and Irrigation, Sacramento, and the State Water Commission of California, Sacramento, compiled information on California rivers, water resources, and power sites.

⁴⁶⁰The spelling of W. H. Sampson's name is inconsistent throughout the sources consulted. Sampson is the spelling adhered to in this essay.

⁴⁶¹*Trinity Journal*, October 8, 1921; April 8, 1922; April 22, 1922; May 27, 1922.

This project means much to Northern California, and especially to Trinity and Shasta counties. It will, when completed, give an abundance of electric energy for lighting and heating and for power in all kinds of industries. It should prove a big impetus to the development of mining propositions that cannot now be handled, as it will provide cheap power for the operation of machinery. It should result in the rapid development of our timber resources, for with cheaper electric power mills could be operated in the forest instead of moving logs long distances, thereby eliminating the charges for transporting waste material.⁴⁶²

This glowing assessment of the promising future to be found at the end of electric wires is indicative of the problems that plagued sparsely populated and remote Trinity County. The region was rich in natural resources, but poor in electricity and adequate roads for transportation. The dams and electricity promised by W.H. Sampson would move the county into the 20th century.

While many within Trinity County supported Sampson, the Humboldt County Chamber of Commerce and Jesse B. Mortsof, Agent at the Hoopa Valley Indian Reservation, protested the possible damming and diversion of the Trinity River. In 1922, Mortsof wrote to the Assistant Commissioner of Indian Affairs claiming that the project proposed by Sampson would seriously injure the inhabitants of Hoopa Valley. Mortsof

asked for a hearing before the Federal Power Commission to submit his argument against Sampson's' project. Mortsolf found allies within the Humboldt County Chamber of Commerce and Tax Payer's Association, but the Assistant Commissioner of Indian Affairs, E.B. Merritt, instructed Mortsolf to provide specific facts as to why the Sampson project should be opposed before an official protest would be forwarded to the FPC. Mortsolf replied that the project would harm or prevent salmon spawning, an important food source for the Hupa Indians, and also claimed that a diversion of the Trinity River would ruin the ability of the Hupa Indians to irrigate their fields.⁴⁶³ Merritt responded that Mortsolf was to protest any such diversion on the part of Sampson, and asked the FPC to hear BIA concerns about the Sampson project.⁴⁶⁴

O.C. Merrill, the executive secretary of the Federal Power Commission, reassured the Commissioner of Indian Affairs that if Sampson were granted rights to water in the Trinity River, he would not be allowed to infringe upon any water rights already held by the Indians of the Hoopa Valley Reservation. Merrill also told Agent Mortsolf and the Commissioner of Indian Affairs that the Federal Power Commission would defer to the

⁴⁶²*Trinity Journal*, May 27, 1922.

⁴⁶³Letter, Jesse B. Mortsolf, to Commissioner of Indian Affairs, Hoopa Valley, California, December 4, 1922; Letter, Mortsolf to Commissioner of Indian Affairs, December 22, 1922. RG 75. Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1909-1939. Box no. 81, NA, Washington, D.C.; Letter, Jesse B. Mortsolf to Commissioner of Indian Affairs, Hoopa Valley, California, December 29, 1922. RG 75. Bureau of Indian Affairs, Hoopa Valley California, Land Correspondence, 1894-1926, Box 158. Series 64. File 77-89. San Bruno, NAPS Region. It should be noted that the irrigation system designed for Hoopa Valley did not use water from the Trinity River.

⁴⁶⁴Letter, E.B. Merritt, to Jesse B. Mortsolf, Washington, D.C., January 17, 1923; Letter, E.B. Merritt, to Jesse B. Mortsolf, Washington, D.C., January 17, 1923. RG 75. Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1909-1939. Box no. 81, NA, Washington, D.C.; Letter, E.B. Merritt to, O.C. Merrill, Washington, D.C., January 17, 1923. RG 75. Bureau of Indian Affairs, Hoopa Valley California, Land Correspondence, 1894-1926, Box 158. Series 64. File 77-89. San Bruno, NASP Region.

BIA to inform the FPC of any water rights held by the Hupas.⁴⁶⁵ Mortsof consulted the Indian Irrigation Service, which at the time was considering the irrigation project within Hoopa Valley, asking for information to support his protest. The Indian Irrigation Service apparently could provide little information because its own files were so inaccurate and incomplete. Nevertheless, Herbert V. Clotts, Supervising Engineer of the Service, informed Mortsof that possibly two hundred acres of land within the Hoopa Valley were under irrigation, but did not know where the Hupas got the water - directly from the Trinity River or from streams in the valley. Nevertheless, relying upon unreliable information, Clotts wrote from his office in Los Angeles that the Sampson project would not threaten the water supply needed by the Hupa Indians for their Indian Irrigation Service project. Clotts reasoned that because there was so little irrigable land in Hoopa Valley that Trinity River had more than enough water to meet the needs of the Indians and up-river diverters.⁴⁶⁶ In early 1923, Mortsof forwarded this information to the Commissioner of Indian Affairs, and at the direction of the Commissioner of Indian Affairs, the BIA officially withdrew its objections to the Sampson project.⁴⁶⁷ Nevertheless, the BIA and the agents at Hoopa Valley remained watchful over the

⁴⁶⁵Letter, O.C. Merrill, to Commissioner of Indian Affairs, January 23, 1917, Washington, D.C. RG 75. Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1909-1939. Box no. 81, NA, Washington, D.C.

⁴⁶⁶Letter, Herbert V. Clotts, to Commissioner of Indian Affairs, Los Angeles, March 14, 1922, RG 75 BIA-California, HVA, Land Correspondence, 1894-1926. Box 158, Series 64. File 77-89. FARC-PSR, San Bruno, California; Letter, Mortsof to Herbert V. Clotts, Supervising Engineer, Hoopa Valley, February 27, 1923. RG 75 BIA CCF 1909-1929, HV, Box No. 81, NA, Washington, D.C. In 1944 Agency Superintendent O.M. Boggess adhered to the same position regarding Indian water rights and the diversion of the Trinity River at Lewiston. Letter, Boggess to Commissioner of Indian Affairs, Eureka, California, Mat 23, 1944. RG 75 BIA, CCF 1909-1929, HV, Box 50, File 341, Part D. NA, Washington, D.C.

⁴⁶⁷Letter, E.B. Meritt, to Herbert V. Clotts, Washington, D.C., April 12, 1923, RG 75. Bureau of

situation developing up-river from the reservation, and as it turned out, for good reason.⁴⁶⁸

The enthusiastic support for Sampson's proposal among the general population of Trinity County waned rapidly after the true nature and design of Sampson's project was released to the general public in February, 1923. The *Trinity Journal* reported that Sampson's project did not consist of the four power plants and related structures as originally reported in the *Journal*. Rather, Sampson proposed damming the Trinity River and building a power plant to generate electricity. More significantly, and to the great surprise of many, the plan also called for the construction of a diversion dam to divert 80% of the water of the Trinity River out of Trinity County through a tunnel into the Sacramento River drainage basin where it would pass through a powerhouse on Clear Creek in Shasta County. After being used to generate electricity on Clear Creek, the water would then be used for irrigation in the Central Valley. Not surprisingly, much of the benefit from the arrival of irrigation water in the Sacramento River Basin would go to Tehama County, home of W.H. Sampson.⁴⁶⁹

Diverting water out of the Trinity River Basin for use elsewhere was not what most citizens of the region had in mind when the Sampson proposal first came to light.

Indian Affairs, Central Classified Files, Hoopa Valley, 1909-1939. Box no. 81, NA, Washington, D.C.

⁴⁶⁸The BIA continued to remain interested in the possible diversion of the Trinity River, and agents Mortsof and Rastall continued to receive and send correspondence relative to Sampson's proposal until it was approved by the FPC in 1925. See, for example, Letter, Eureka Chamber of Commerce to Mortsof, July 24, 1923, Eureka California. RG 75. Bureau of Indian Affairs, Hoopa Valley California, Land Correspondence, 1894-1926, Box 158. Series 64. File 77-89. San Bruno, NASP Region; Letter, Rastall to Commissioner of Indian Affairs, Hoopa Valley, January 13, 1925; Memorandum, Federal Power Commission, Washington, D.C., January 14, 1925, RG 75. Bureau of Indian Affairs, Central Classified Files, Hoopa Valley, 1909-1939. Box no. 81, NA, Washington, D.C.

Sampson himself may have known this, and so possibly to avoid opposition to his scheme, chose to keep the actual specifications out of the newspaper until he had no choice but to reveal them to the public. The water of the Trinity River was not to be used to generate cheap hydroelectricity to benefit Basin residents. Instead, and from this point forward, water interests outside of Trinity County targeted the river for its "surplus" water - flood waters and any water not needed within the drainage basin - in hopes of exporting it to the thirsty agricultural lands of the Central Valley. Thus, the Trinity River, supporters of the diversion scheme hoped, would forever become tied a larger irrigation system outside the Trinity River Basin.

In March 1923, just after the *Trinity Journal* reported on the specifications of Sampson's proposal, a public meeting to discuss the proposal was held in Redding, California. After the meeting the *Trinity Journal* reported rising opposition to the project emerging from as far away as Del Norte County.⁴⁷⁰ The majority of opposition, however, came from within the Klamath and Trinity river basins where residents expressed fear that the project would divert most if not all the water of the Trinity River out of the Basin thereby depriving Basin residents of water needed for mining, hydroelectricity and agriculture. Residents of Humboldt County opposed the project on the grounds that diversion of the Trinity might harm the potential for producing hydroelectricity in that county. Navigation interests opposed the project on the grounds that the diversion might destroy navigation at the mouth of the Klamath River near Requa where the water of the

⁴⁶⁹*Trinity Journal*, March 3, 1923; March 17, 1923.

⁴⁷⁰*Trinity Journal*, March 31, 1923.

Trinity River, it was claimed, combined with the water of the Klamath creating enough volume to float schooners from Requa inland on the Klamath several miles to the mouth of the Klamath. Moreover, the sandbar at the mouth of the Klamath could not be kept open if water flowing out of the river was reduced. Humboldt County, in response to the proposal, appropriated \$5000.00 to fight the project, and the Trinity County Board of Supervisors issued a formal protest.⁴⁷¹

In light of Sampson's application, the Federal Power Commission appointed a committee to study the Trinity River in order to determine the feasibility of Sampson's project, and its potential impact. The committee also had broader duties. It was to recommend a policy for the consideration of permit applications and the issuing of licenses for hydroelectric power development along the river, while simultaneously determining the possibility of diverting the Trinity River to the Sacramento River Basin and the Central Valley.⁴⁷² The committee, which was made up of federal and State officials from land and water resource agencies, investigated the water uses of the Trinity River Basin, and compiled a basic inventory of the possible hydro-power sites along the river. The committee also explored the possibility of diverting the Trinity River into the Sacramento River Basin, and the consequences of that diversion for the Trinity River

⁴⁷¹*Trinity Journal*, March 31, 1923. Minor protest emerged within Tehama and other counties where the arrival of irrigation water from the Trinity River would mean the formation of new irrigation districts and additional taxes on property owners.

⁴⁷²D.C. Henry, U.S. Grant, and W.F. McClure, Report to the Federal Power Commission on the Uses of the Trinity River, California. Board of Engineers, Federal Power Commission, San Francisco, February 18, 1924.

Basin.⁴⁷³

The committee physically surveyed the river, interviewed Basin residents, compiled flow data, river profiles and hydro-power statistics. The final report, issued in 1924, contained several important conclusions. First, if full use was to be made of the Trinity River, large storage reservoirs were essential. Second, within the Trinity River Basin, water demands for irrigation were so small that diversion of the Trinity to the Sacramento would not harm local irrigation. Third, diversion of the Trinity would greatly aid in the agricultural development of the Sacramento and San Joaquin valleys. Fourth, flooding on the Trinity River was not a major threat to Basin residents because "of the relative insignificance of agricultural or other interests which can be affected by floods."⁴⁷⁴ Flood control, therefore, was not a reason to build a dam, but a diversion dam would help ease the occurrence of floods by removing water from the Basin. Finally, navigation was confined to the Klamath River below the mouth of the Trinity between Requa and the Pacific coast. Diversion might impact the limited navigation on that river, but not enough to stop the diversion. The committee recommended that no permits be granted for any use that might interfere with the ultimate diversion of the Trinity River to the Sacramento River, and concluded that "the advantages of diversion greatly outweigh

473D.C. Henry, U.S. Grant, and W.F. McClure, Report to the Federal Power Commission on the Uses of the Trinity River, California. Board of Engineers, Federal Power Commission, San Francisco, February 18, 1924., 2-3.

474D.C. Henry, U.S. Grant, and W.F. McClure, Report to the Federal Power Commission on the Uses of the Trinity River, California. Board of Engineers, Federal Power Commission, San Francisco, February 18, 1924., 3, 34-35.

its disadvantages".⁴⁷⁵ The report did not address the anadromous fishery of the Trinity River.

After considering the findings of the report, the FPC disregarded opposition to the Sampson proposal and issued preliminary permit #247 to W.H. Sampson and his financier, C.D. Hill, to proceed. The permit included the right to divert Trinity River water to the Sacramento River watershed where it would ultimately be used for irrigation in Tehama, Glenn, Colusa and Yolo counties. The final cost estimate for the project was \$30,000,000.00. Under the permit, Sampson and his backers were given one and a half years to complete all engineering investigations and secure financial arrangements or the permit would be revoked.⁴⁷⁶

The permit from the Federal Power Commission was only a first, but an essential, step in gaining the additional permits required for the project. Final approval from the Federal Power Commission was contingent upon the project's actual impact upon other possible beneficial uses of the waters of the Trinity River. The FPC defined beneficial uses as navigation, water power, irrigation, flood control and reclamation. Significantly, the FPC did not list anadromous fish habitat or propagation as a beneficial use of the water in the Trinity River.⁴⁷⁷ Opposition to the project within the region, however, did not end with the FPC decision. Most notably, Humboldt County led continued

⁴⁷⁵D.C. Henry, U.S. Grant, and W.F. McClure, Report to the Federal Power Commission on the Uses of the Trinity River, California. Board of Engineers, Federal Power Commission, San Francisco, February 18, 1924., 3, 35-38.

⁴⁷⁶*Trinity Journal*, January 17, 1925.

⁴⁷⁷*Trinity Journal*, February 25, 1925. While the federally-defined beneficial did not include fish

opposition to the project, and attorneys for the county assured project opponents that if necessary, an initiative would be put forth to kill the project by including the Trinity River within the Klamath River Fish District. The Fish District had prohibited new construction of river obstructions on the Klamath River in response to the erection of the Copco Dam on the upper-Klamath River in 1917 which was already harming the anadromous fishery of that river basin.⁴⁷⁸ The State created the Fish District to mitigate the losses of anadromous fish habitat caused by damming, and the proposal for the Trinity, opponents claimed, would block salmon from essential spawning grounds.⁴⁷⁹

After the preliminary approval of the Sampson Project, a slew of applications for water rights and hydro-power sites arrived at the State Department of Public Works and the Federal Power Commission. Although none of them were on the same ambitious scale as the Sampson proposal, the timing of their filing suggests that Sampson's initial success may have encouraged others to attempt to tap the waters of the Trinity River Basin.⁴⁸⁰ More likely, however, the numerous permit applications filed on the Trinity were related to the larger trend throughout California of a rush unclaimed power sites because, as noted earlier, the 1920 Water Power Act created a standardized permit process, and a consistent lease and fee policy ended the previous confusion and

propagation, many local residents did see using water to ensure fish survival as an important beneficial use.

⁴⁷⁸There are today seven dams on the Klamath River system that are considered to be seriously harming the anadromous fishery of the Klamath River Basin. They are; Copco I, Copco II, J.C. Boyle Dam, Keno Dam and Link River Dam.

⁴⁷⁹*Trinity Journal*, January 25, 1925.

⁴⁸⁰For example, see: *Trinity Journal*, February 7, 1925; February 14, 1925; March 14, 1925; July 25, 1925; August 7, 1926; October 2, 1926; November 13, 1926.

uncertainty surrounding applications for hydro-power sites on public lands.⁴⁸¹

While applications for water rights and power sites continued to cross the desks of federal and State officials, the State of California, which was responsible for issuing water rights permits, cancelled seventeen water-rights applications submitted by Sampson because he failed to secure financial backing as per the stipulations in his application for diversion. This failure to meet one of the conditions stipulated by the Federal Power Commission was a serious blow to Sampson's project.⁴⁸² Another blow to Sampson's project came in 1926 when the State approved four applications for water rights submitted by a mining company within Humboldt County in direct conflict with Sampson's applications. The approval of these water rights effectively killed Sampson's project.⁴⁸³ For the next year the State continued granting Trinity water rights for potential power generation facilities of much smaller scale than Sampson's proposal.⁴⁸⁴

The project first envisioned by W.H. Sampson, however, did not die. Rather, it lingered within the confines of the California State Engineer's office, where, shortly after

⁴⁸¹Five months after the passage of the Water Power Act, eighty permit applications for power sites in California were filed with the Federal Power Commission. See James C. Williams, Energy and the Making of Modern California, 418 note 12.

⁴⁸²*Trinity Journal*, June 26, 1926. The state may have cancelled the permits because of its own plans for Trinity River water. In 1927 the State filed for water rights on the Trinity River. See Thomas B. Waddell, Assistant State Engineer, Division of Water Resources, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature," April 28, 1955. Typescript on file at California State Library, Government Documents, Sacramento, California.

⁴⁸³Thomas B. Waddell, Assistant State Engineer, Division of Water Resources, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature," April 28, 1955. Typescript on file at California State Library, Government Documents, Sacramento, California.

⁴⁸⁴For example, see *Trinity Journal*, August 7, 1926; October 2, 1926; November 13, 1926; April 9, 1927; August 20, 1927.

the State cancelled Sampson's applications, a new plan to divert the Trinity River re-emerged in modified form. This time the proposed diversion of the Trinity River was backed by the State of California as part of a preliminary report issued by State Engineer Paul V. Baily outlining a state-wide water conservation project that envisioned numerous dams, canals and power generation facilities that would tie several rivers together in a large irrigation and power generation network (several aspects of this plan would later be included in the Central Valley Project). The report called for a dam near Fairview on the Trinity River where a diversion system could be erected to divert water to the Central Valley. The major difference between the State's plan and that submitted by Sampson was that the new plan called for diverting only the main stem of the Trinity River whereas Sampson proposed damming tributary streams as well.⁴⁸⁵

Those in opposition to diverting the Trinity River did not sit on their heels when the State announced its proposal. The groups originally opposed to the Sampson proposal continued to watch the developments at Fairview. Nothing could be done, however, until the State decided if the project was feasible. For the next several years the state conducted surveys at Fairview to determine if it was the best site for a dam, and also explored other potential sites along the Trinity River. The editor of the *Trinity Journal* summarized nicely the general wait and see situation along the Trinity River during this period:

As to diverting the waters of one stream into another, especially such a

⁴⁸⁵*Trinity Journal*, August 20, 1927.

radical divergence as this project calls for, many people have their doubts. Trinity, Humboldt and Del Norte counties will always protest. The project is a possibility - but as to whether or not it is a probability remains to be seen. However, it is not dead. The protesting counties should keep their ears open for the rustling of blue prints.⁴⁸⁶

The project certainly was not dead, and State sent numerous teams of surveyors to the Trinity River and its tributaries near the proposed Fairview Dam site for the next several years.⁴⁸⁷

State surveys on the Trinity River began in 1925, and continued for years. The State was concerned with developing the water resources of the northwestern part of the state in conjunction with other proposals on the table for developing water resources for the Central Valley. By the end of the 1920s, the California State Engineer's office had compiled a general plan for developing California's water resources, and the Trinity River was part of that plan. Thomas Waddell, the assistant state engineer, studied several alternative plans for diverting the Trinity River. When Waddell submitted the official California State Water Plan to the California State Legislature in 1931, the proposed diversion of the Trinity River was included as part of the plan.⁴⁸⁸

⁴⁸⁶*Trinity Journal*, March 19, 1927.

⁴⁸⁷*Trinity Journal*, October 2, 1927. The details of the project outlined in the *Journal* were very similar to the project first proposed by Sampson, and later built by the Bureau of Reclamation.

⁴⁸⁸Thomas B. Waddell, Assistant State Engineer, Division of Water Resources, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature," April 28, 1955.

Prior to the official submission of the California State Water Plan in 1931, a joint legislative committee composed of several northern county senators and assemblymen, guided by personnel from the Department of Public Works, the Division of Water Rights, and State Engineer Edward Hyatt, Jr., toured the Trinity River Basin and northern California in October 1927 to review potential dam sites outlined in a Department of Public Works water conservation report. The committee stopped briefly in Weaverville, Trinity County Seat. The *Trinity Journal* reported that the big question residents of the area wanted the committee to answer was the total amount of water that the State believed would be diverted from the Trinity River Basin if the project were approved. Attempting to answer this question, the editor of the *Journal* stated:

George C. Mansfield, publicity man for the Department of Public Works [who accompanied the committee], is authority for the statement that the amount [of water diverted] would be whatever is available after all present and future needs of the Trinity valley has been taken care of, allowing the river its normal flow. The flood waters would be stored during the winter season, to be released during the summer months for irrigation of lands in the Sacramento valley, power being generated as the waters flowed down the valley.⁴⁸⁹

Typescript on file at California State Library, Government Documents, Sacramento, California.

⁴⁸⁹*Trinity Journal*, October 22, 1927.

The editor continued that the cost of construction would be paid for by the sale of hydroelectricity produced at the point of diversion and sold by the State.

One week after the *Journal* report, State Senator Hans C. Nelson of Eureka, a member of the joint legislative committee, reassured area residents that there was plenty of water outside of the Trinity Basin to fulfill the needs of the state's proposed conservation project, and that a dam at Fairview was unnecessary and far too costly to justify. Nelson made this reassuring statement, however, before the committee issued any formal report on the water situation in northern California.⁴⁹⁰ Little did Nelson and others in the area know that on July 30, 1927, the State of California, through the Department of Finance, filed applications for water rights on the Trinity River. The State filed with the California Division of Water Resources to use Trinity River water for hydroelectric power, irrigation, domestic uses, navigation, and salinity control in the Sacramento and San Joaquin valleys, outside of the Klamath-Trinity Basin.⁴⁹¹

While the State was moving to secure water rights on the Trinity River, hydroelectric power interests continued to submit applications for power projects on the Trinity and its tributaries with the State and the Federal Power Commission.⁴⁹² Although the number of applications were fewer than in the first years after Congress created the

⁴⁹⁰*Trinity Journal*, November 5, 1927.

⁴⁹¹Thomas B. Waddell, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature", 1.

⁴⁹²*Trinity Journal*, January 7, 1928. The State Engineer's Office made its final survey of the Fairview site in May, 1930. See the *Trinity Journal*, May 10, 1930. Soon thereafter, the Assistant State Engineer submitted the California State Water Plan to the State Legislature. See Thomas B. Waddell, "The Trinity River Diversion Project: A Statement Presented to the Assembly, California Legislature".

FPC, the continual requests for water rights and project permits created a somewhat precarious situation. Was the State going to build its own project or allow private enterprise to tap the river for power and mining purposes?

In 1933, the Army Corps of Engineers stepped into the game and issued its own survey report on the feasibility of a project to divert water from the Klamath-Trinity watershed, and the potential impact of such a scheme. The Corps' survey was part of a larger program designed to inventory the nation's rivers put forth under the provisions in the 1927 Rivers and Harbor's Act. The Corps surveyed the river's potential for hydroelectric power development, irrigation and other possible uses of the river. Two important missions of the Army Corps of Engineers were to maintain and improve the nation's navigable waterways, and to provide flood control. Thus, the Corps' survey of the Klamath-Trinity watershed addressed the possible impact that diversion of the Trinity River would have upon any navigable rivers in the Basin. The Corps determined that only the lower forty miles of the Klamath River were navigable, and navigation there was limited to logging and light schooner traffic. The Corps concluded that there was such limited commercial navigation on the lower Klamath, there was no need to improve navigation on the lower Klamath. Flood control, moreover, was not needed on the Trinity or Klamath Rivers because there were no areas under cultivation or population centers susceptible to flood damage. The most significant finding in the Corps' study was its determination of the most beneficial uses for the waters of the Basin. The report concluded that there were two beneficial uses for the waters of the Trinity and Klamath basins. The first was the production of hydroelectricity. Numerous sites existed in the Basin suitable for erecting dams to generate electricity. The Corps specifically addressed

California's plan to divert the Trinity River as a beneficial use of the region's water resources. "Diversion of the upper Trinity River into the Sacramento Valley, as contemplated by the California State Water Plan, is considered advisable."⁴⁹³ The survey report, however, never mentioned the potential impact of hydroelectric dams and water diversion on the anadromous fishery.

With the endorsement of the federal government, it would seem that the State would only have to secure water rights, permits, and funding to move forward with diverting the Trinity River. It was not until 1938, however, five years after the Corps' acknowledged the feasibility of diverting the Trinity River, that the possibility that the Trinity might be diverted to the Central Valley was again brought before the public. On December 22, the *Trinity Journal* reported that the United States Forest Service issued another report on the potential water-power sites along the Trinity River and South Fork of the Trinity River. According to the report, there were at least ten suitable reservoir and hydroelectric power sites along the Trinity and its tributaries.⁴⁹⁴ The report referred to in the press was one of several reports emerging from the federal government in its' on-going effort to inventory the natural resources of the United States. This national inventory included potential hydroelectric resources as well.⁴⁹⁵ As for the State of

⁴⁹³House Document No. 181, 73rd Congress, 2nd Session, Report on the Klamath River, Oregon and California, October, 1933., 16. This is the "308 Report" for the Klamath-Trinity River Basin. Quoted in Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California, State of California, Department of Public Works, April, 1953., 13-14. See H. Doc. 308. 1st Sess. 69th Cong.

⁴⁹⁴*Trinity Journal*, December 22, 1938.

⁴⁹⁵The best source on this issue is, Samuel P. Hays, Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920. The most significant report affecting the

California during the 1930s, the Department of Public Works began quantifying the water resources of the State, including the amount of water available in the Klamath-Trinity Basin, as part of its effort to determine the amount of water available for development in conjunction with the State Water Plan.⁴⁹⁶

As the 1930s drew to a close, and the Second World War loomed on the horizon, interest in building a diversion on the Trinity River at Fairview increased.⁴⁹⁷ American entrance into the conflict in December 1941 brought a rising demand for electrical energy for war-related industries. Particularly power-hungry were the electrochemical, aluminum and refining industries. For those interests hoping for a diversion project on the Trinity River at Fairview project, the war brought new optimism. The main objection to the project up to the Second World War was that it would deprive Basin residents of “their” water. Now, with war at their doorsteps, proponents stopped casting the project as one that would irrigate the Central valley with the side benefit of producing

development of the Trinity and Klamath Rivers is, House Document #181, 73rd Congress, 2nd Session, "Report on the Klamath River, Oregon and California", October, 1933. This report is the "308" report for the Trinity and Klamath River which emerged from House Document 308, 69th Congress, 1st Session instructing the federal government to estimate the resources and future development potential for rivers in the U.S.

⁴⁹⁶An outline of federal reports and investigations of the Klamath and Trinity Rivers to 1940 is found in L.L. Bryan, Summary of Investigations on Trinity River and Tributaries, California, United States Department of the Interior, USGS, March, 1940. RG 57, Records of the Geological Survey, Water and Power Branch, Conservation Division, Records Concerning Land and Stream Classification, 1900-1961. D-100, 11-A-26 to 11-B-5, Entry 384, Box No. 57. NA, Washington, D.C.; For State and federal reports to 1953, see Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California, State of California, Department of Public Works, April, 1953.

⁴⁹⁷*Trinity Journal*, March 27, 1941; October 9, 1941; October 30, 1941; November 6, 1941; November 27, 1941. The State Water Plan, which included the Trinity River Division, was adopted by the California Legislature 1941, and became part of the Water Code of the State of California. See Thomas B. Waddell, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature", 1.

hydroelectric power. Rather, supporters of the project changed their approach and portrayed the diversion as an essential undertaking for national defense.⁴⁹⁸

The opposition to the project in Trinity County that lingered since Sampson's proposed diverting the river in 1923, suddenly evaporated in the post-Depression, wartime atmosphere of 1941. On November 4, 1941 the Trinity County Board of Supervisors passed a resolution addressed to the United States Secretary of the Interior, the Commissioner of the Bureau of Reclamation, and the California Department of Public Works calling for the immediate authorization and construction of the project. The Supervisors claimed that the project was an essential step to the industrial development of Trinity County and of Northern California. Reviving earlier promises of an electrical panacea, the Supervisors claimed that the project would allow Trinity County to "take its place in the industrial areas of the west."⁴⁹⁹

A committee composed of prominent individuals from Shasta and Trinity counties calling themselves the Shasta-Trinity Committee, organized in Redding, California with the purpose of securing the construction of the Trinity River Division. The group lobbied the State of California and the federal government to push through construction of the diversion. State Engineer Edward Wyatt, heading-up California's water conservation efforts, urged the federal government to consider building parts of the water plan designed by the California Department of Public Works, including the Trinity River

⁴⁹⁸*Trinity Journal*, March 27, 1941; December 18, 1941.

⁴⁹⁹*Trinity Journal*, November 6, 1941.

Division.⁵⁰⁰ Soon after the United States entered the Second World War, the editor of the *Journal* stated:

A strong possibility that the Trinity River Division project may be soon built as a national defense power project was seen recently in a report that the U.S. Bureau of Reclamation already has commenced a study of data on the project and will soon have a field survey in operation on the ground shortly after January 1.⁵⁰¹

While interest in the project was expressed by the state, the Bureau of Reclamation, and many local officials, the development of the Trinity River Division did not take place in a vacuum. The history of the Trinity River Division of the Central Valley Project began as a project proposed by private interests, but it soon became intertwined with water development elsewhere in California. Thus, if one is to understand the eventual success of those supporting the diversion of the Trinity River, it is important turn to a general discussion of the creation and implementation of the Central Valley Project in order to place the Trinity River Division in a broader context.⁵⁰²

⁵⁰⁰*Trinity Journal*, November 27, 1941. The exact date of the formation of the Shasta-Trinity Committee is not known, but mention of the groups' activity first appears in the *Journal* on November 27, 1941. They are clearly identified on December 18, 1941.

⁵⁰¹*Trinity Journal*, December 18, 1941.

⁵⁰²The information for this discussion of the Central Valley Project is drawn mainly from the California Water Atlas.

The Central Valley Project (CVP) grew out of the water and flood control needs of agricultural interests in the Sacramento and San Joaquin valleys. Beginning in the late-nineteenth century, the federal government and the State of California initiated flood control and reclamation projects throughout the Central Valley.⁵⁰³ With the growth of irrigation agriculture in the Central Valley, farmers increasingly over drafted existing ground water supplies, and surface waters were inadequate and too unreliable to meet the needs of a growing industry. The rights to these surface waters, moreover, were uncertain, confused, and a source of expensive litigation. In 1919-20, Robert B. Marshall, the chief of Hydrography for the United States Geological Survey, released in a private publication his idea for a comprehensive state-wide water plan that called for the State of California to construct a storage reservoir on the Sacramento River near Redding California. The water stored would be fed into two parallel aqueducts running south, one on each side of the Sacramento and San Joaquin valleys, to a point near the San Joaquin River on the east, and Dos Palos on the west. The Marshall Plan, as it was called, also encompassed additional diversions to feed water from the Sierra Nevada to Los Angeles.⁵⁰⁴

Marshall's proposal was not the first. Many plans for State participation in

⁵⁰³Small groups of private investors and local governments initiated various reclamation and flood control schemes with little success. It was up to the State and federal government to plan, fund and construct effective projects. For a good discussion of the early attempts at reclamation in the Central Valley, see Donald Pisani, From the Family Farm to Agribusiness: The Irrigation Crusade in California and the West, 1850-1931 (Berkeley: University of California Press, 1984); Robert Kelley, Battling the Inland Sea: American Political Culture, Public Policy, and the Sacramento Valley, 1850-1986 (Berkeley: University of California Press, 1989).

⁵⁰⁴California Water Atlas, 47. See also, James C. Williams, Energy and the Making of Modern California, 253-256.

building water systems for irrigation, flood control and reclamation within the Central Valley emerged during the late nineteenth and early-twentieth centuries. For one reason or another, these plans usually remained paper dreams. Generally, failure of these early schemes can be attributed to a lack of political and financial support, technological know-how, poor and unrealistic engineering, inexperience, and the fear of a land and water monopoly.⁵⁰⁵

As for the Marshall Plan, it was far too large, complex and expensive to gain immediate support from California's public officials. While the California League of Municipalities heartily endorsed the plan, for example, the professional engineers in the State were at first slow to warm up to the idea.⁵⁰⁶ By the 1920s, however, many water-related issues in California emerged that helped removed obstacles in the way of Marshall's plan. The need for flood control, hydroelectric power generation, inland navigation, irrigation and land reclamation raised public awareness of the importance of comprehensive water planning. The success of the publicly-funded Los Angeles-Owens Valley aqueduct, furthermore, proved that extensive, complex water conveyance systems were feasible, and of great benefit to urban and agricultural interests.⁵⁰⁷

Therefore, in 1921, the California legislature inaugurated a comprehensive survey

⁵⁰⁵The best study of the emergence of irrigation agriculture within California's Central Valley, see Donald Pisani, From the Family Farm to Agribusiness: The Irrigation Crusade in California and the West, 1850-1931.

⁵⁰⁶California Water Atlas, 47; James C. Williams, Energy and the Making of Modern California, 254.

⁵⁰⁷For an informative discussion about the Los Angeles Aqueduct, see William L. Kahrl, Water and Power: The Conflict over Los Angeles' Water Supply in the Owens Valley (Berkeley: University of California Press, 1982). Also consult, John Walton, Western Times and Water Wars: State, Culture and

of the state's water resources to compile exact data on the states' waters and study how best to utilize them.⁵⁰⁸ By initiating these surveys, the legislators tacitly accepted the idea of State government participation in water development. It should be noted that Sampson's request for rights to water in the Trinity River Basin coincided with the interest of the State in a comprehensive water development program.

It took nearly a decade for the California State Engineer to complete the surveys. In 1931 the California State Engineer issued Bulletin #25 encompassing many of the most important findings of the State's water inventory activities, and also outlining a series of dams, aqueducts, and hydroelectric facilities that, if constructed, would comprise a complex system of inter-basin water transfers called the Central Valley Project (the joint legislative committee that toured the Trinity River and northern California in 1927 probably did so in response to early drafts of this report).⁵⁰⁹ In 1933, during the depths of the Great Depression, the California Legislature passed a bill authorizing the funding and construction of the Central Valley Project.⁵¹⁰

The CVP would be the most ambitious, complex, multi-purpose water project in history to that time, but the State could not afford the enormous cost. At first, the State turned to the federal government for partial funding of the project.⁵¹¹ Because the initial

Rebellion in California (Berkeley: University of California Press, 1992).

⁵⁰⁸California Water Atlas, 47. This initial survey expanded into a series of water resource surveys conducted over the next ten years.

⁵⁰⁹James C. Williams, Energy and the Making of Modern California, 262-263.

⁵¹⁰James C. Williams, Energy and the Making of Modern California, 263.

⁵¹¹California Water Atlas, 49.

Central Valley Project Act as written did not contain preferences for public power, an important part of Franklin Roosevelt's New Deal agenda, the federal government was reluctant to provide funding to the project. Under pressure for funding, however, supporters of the act amended the final version passed in 1933, adding preferences for public power to satisfy the Roosevelt Administration which held the purse strings.⁵¹² The California Legislature envisioned funding the project with bonds purchased by the federal government, but because of the Depression and obligations to other projects, the federal government did not step up to immediately buy the bonds and the State could not find sufficient buyers elsewhere.⁵¹³

In 1935, after two years of bureaucratic wrangling, funding was appropriated by the federal government and the responsibility for building the project was handed to the Bureau of Reclamation. Construction on the massive, federally-funded project did not begin until 1937, when the Bureau of Reclamation began construction of the first unit of the CVP, the Contra Costa Canal.⁵¹⁴ Construction of other units of the CVP, including the ambitious Shasta Dam, were slowed or delayed because of unforeseen re-design, engineering difficulties and the outbreak of World War II. The first sale of hydroelectric power from Shasta Dam (the centerpiece of the CVP) did not take place until 1944,⁵¹⁵

⁵¹²The Central Valley Project Act came under fire from private utility companies as soon as Governor James Rolph signed it. The governor quickly called a special election to decide a voter referendum on the act. Voters sustained it by a slim margin. James C. Williams, Energy and the Making of Modern California, 263.

⁵¹³James C. Williams, Energy and the Making of Modern California, 264.

⁵¹⁴California Water Atlas, 49.

⁵¹⁵In 1942, the War Production Board ordered the Bureau of Reclamation to sell available power

and the first delivery of irrigation water from the system did not occur until 1951.⁵¹⁶

As the CVP neared completion, a political struggle that underlay the entire history of the Central Valley project emerged between private agricultural and hydroelectric interests, and the federal government. The details of the struggle are complex. Powerful private interest groups pressured the State of California to attempt to regain control of the CVP. The controversy centered on water distribution and hydroelectric power. Those advocating State control believed the federal government had moved too far towards public ownership and control of hydroelectric sales and distribution and so were competing directly with private enterprise. Opponents of federal control also struggled with the 160 acre limitation provision placed upon those buying water from the Central Valley Project and sought exemption from the limitation. Finally, they wanted the sale of electricity to subsidize their costs for irrigation water.⁵¹⁷

The State could not afford to purchase the CVP from the Bureau of Reclamation, and eventually a compromise was reached over the most controversial features of the

to Pacific Gas and Electric until project delays were worked out. Thus the first power sold was to a private utility, and was not the "official" first sale of power from the project. See California Water Atlas, 49; James C. Williams, Energy and the Making of Modern California, 265-266.

⁵¹⁶California Water Atlas, 49. The CVP was completed in a piecemeal fashion. Projects deliveries of power and water were initiated at different areas as construction moved forward. The dates cited for the commencement of project deliveries are approximate, and reflect the first water and power deliveries from Shasta Dam.

⁵¹⁷The Pacific Gas and Electric Company, The California Chamber of Commerce, the Farm Bureau Federation, the Central Valley Association and the Irrigation Districts Association were the most vocal in the struggle to wrestle control of the CVP from the federal Government. California Water Atlas, 49. The 160 acre limit was part of the initial Reclamation Act of 1902. See also, James C. Williams, Energy and the Making of Modern California, 266.

Central Valley Project.⁵¹⁸ But the struggle of private versus public control of hydroelectric power and the distribution of project water remained in the background. Nevertheless, the Central Valley Project, although costly and long-delayed, was a success. Irrigation districts took delivery of project water and electricity flowed to customers.⁵¹⁹

The State accepted that the federal government was a necessary presence in California's irrigation and hydroelectric network, but the State Engineer's Office did not give up the idea of taming California's remaining free-flowing rivers. Just after World War II, the State proposed building a State, rather than federally-owned, water delivery and hydroelectric system called the California State Water Project.⁵²⁰ The Bureau of Reclamation, at the same time, moved forward with its own ambitious plans for the rivers of the State that the Bureau had been in contemplating for several years. One reason the Bureau moved forward with its plans was the post-war era building boom in California and the growing demand for water. The second reason was the presence of the Army Corps of Engineers, which had plans to develop projects in the Central Valley where the

⁵¹⁸Contesting interests reached agreement over the controversial project features in the so-called Wheeling Agreement of 1951. Among other things this agreement gave PG&E a beneficial position in the purchase, distribution and sale of CVP power at rates favorable to PG&E. The benefits envisioned by those New Dealers when conceiving the CVP were not to be realized. California Water Atlas, 51.

⁵¹⁹California Water Atlas, 50-52.

⁵²⁰California Water Atlas, After 1945, Plans for the State Water Project (SWP) did not directly involve the Trinity River. At certain points, however, the SWP and the CVP were merged. The San Luis Unit is jointly owned and operated by the state and federal governments. It is at this point that the waters of the Trinity River mingle with SWP water and are fed mostly to the Westlands Water District in the San Joaquin Valley. In 1945 the California Legislature created the Water Resources Control Board to conduct a comprehensive state water resources survey and develop plans to meet future water needs. Under the Division of Water Resources in the Department of Public Works, these activities led to the creation of the State Water Project. In 1956 the Department of Water Resources was created to coordinate all the

Sacramento and San Joaquin rivers were navigable, and the State of California's announcement that it planned to develop much of the remaining untapped surface water in the state.⁵²¹ Therefore, while the Bureau of Reclamation sought expansion of the Central Valley Project partly because there was a need for additional water, it also wanted to expand the CVP because the activities of the Army Corps and the State threatened Bureau plans for a comprehensive water and hydroelectric power system under Bureau supervision.⁵²²

In 1949, the Bureau of Reclamation released a study outlining its plans for constructing an additional thirty eight dams and related hydro-power delivery systems. The 1949 Bureau study is significant here because it included plans to dam and divert the Trinity River. The report envisioned a complex and expensive trans-basin water transfer and hydroelectric generating system, and called for diverting as much as eighty-eight percent of the flow of the Trinity River at Fairview and sending the water to the Sacramento River system. Once diverted to the Sacramento, the water, and by implication, most of the Trinity River itself, would be thoroughly integrated into the

activities of development in the State Water Plan.

⁵²¹After the 1930s the Bureau envisioned a grand interconnected water conservation, transfer and distribution system crossing state boundaries in the western United States. Therefore, even before the end of World War II the Bureau was exploring new sources of water in California and the west. The Army Corps and the State of California's water schemes threatened those plans.

⁵²²The entry of the state and the Army Corps of Engineers into the development of California's water resources was in part a response to the conflict over the Bureau's 160 acre limitation and the state's failure to purchase the CVP. In 1944 the Federal Flood Control Act authorized the entry of the Army Corps of Engineers into California's Central Valley watershed under the umbrella of flood control. California Water Atlas, 50.

Central Valley Project.⁵²³

The history of State and federal activity within the Trinity River region leading to the construction of the Trinity River Division (TRD) reveals the ambiguity of the need for the project. In a larger context, and perhaps of more import, the project is indicative of the wider trends of Bureau activity in the post-war West where large-scale multi-purpose water projects were pushed forward on the backs of promises of enormous future benefits, while the downside of the projects were glossed-over or ignored.⁵²⁴

Plans to divert the Trinity River first came to light in 1923. With some alterations, the basic configuration of the diversion system when it was finally authorized closely followed the initial design put forth in the California State Water Plan of 1931, which was the precursor of the Central Valley Project.⁵²⁵ During the 1930s, when the CVP was being handed-off to the federal government, the basic design of the Trinity River Division of the CVP was in place, but was not included as part of the Central Valley Project. The State, as we have seen, possibly adapted the idea from W.H. Sampson's initial concept, and adapted it to the State Water Plan of 1931. Instead of including the Trinity River Diversion in the CVP, the project remained part of the State

⁵²³California Water Atlas, 53.

⁵²⁴Development of the Trinity River Division in post-World War California was advocated primarily by Clair Engle who tied its authorization to a bill in Congress authorizing funding for the construction of the Sacramento Valleys (San Luis) Canals Unit. California Water Atlas, 53; See also, Trinity River Flow Evaluation: Final Report U.S. Fish and Wildlife Service, Washington, D.C., June 1999, 1.

⁵²⁵Trinity River Flow Evaluation: Final Report U.S. Fish and Wildlife Service, Washington, D.C., June 1999, 5. The Federal Power Commission tacitly endorsed diversion of the Trinity River as early as 1924. See D.C. Henrey, U.S. Grant, and W.F. McClure, Report to the Federal Power Commission on the Uses of the Trinity River, California.

Water Plan. There, the idea of diverting the Trinity languished until 1945, when a report to the California State Legislature stating that the idea would be bad for residents and businesses within the Klamath-Trinity watershed, the State removed the diversion from the State Water Plan. There was enough opposition by Basin residents to trans-basin water transfers that the state declined to build the project. Nevertheless, removal of the diversion from the State Plan did not stop the project, it only prevented the State from building it. After 1945, the Bureau of Reclamation, which had been seriously studying the feasibility and features of the diversion as the next logical step in the expansion of the Central Valley Project, set about pushing for its construction.⁵²⁶

In 1942, during the initial involvement of the U.S. in World War II, engineers from the Bureau of Reclamation visited the Trinity River Basin and studied the river. The *Trinity Journal* reported that electrical power for the war effort was the main impetus behind the renewed interest in the project, but the possibility of diverting water to irrigation in the Central Valley was not left aside. The editor of the *Journal* stated:

The Trinity Project has been proposed as an emergency means of developing a large block of power for war production, in the event

⁵²⁶The Trinity River Division was included in the 1931 State Water Plan adopted into the California State Water Code in 1941. It was dropped in 1945 by the State Legislature after a study conducted by the State showed that diversion was not in the best interest of the Basin. See Thomas B. Waddell, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature", 1-2; Joint Committee on Rivers and Flood Control, Proposed Klamath and Trinity Diversions and Other Projects in the Central Valley, Report to the California Legislature, 56th Session, September, 1945; See also "Hearing Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Third Congress, Second Session, on H.R. 123, To Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Development, Central Valley Project, California, Under Federal Reclamation Laws." April 16, 1954,

additional sources of hydro-electric energy are needed to supplant the power output to come from Shasta Dam and Keswick Dam of the Central Valley Project. It is also contemplated that the additional water supply available in the Trinity River eventually will be needed in the Central Valley.⁵²⁷

R. S. Calland, District Engineer for the Bureau of Reclamation, reassured Basin residents who were nervous about the projects' potential for taking too much water from the Basin, that Bureau's plans for the Trinity River called for determining all the present and future in-Basin water needs. After quantifying the needs of the Basin, the amount of water available for diversion would be known. Only water available beyond the amount needed by the Basin would be diverted into the Central Valley. The *Journal* editor reported, "Plans call for the use only of waste water and preliminary surveys have convinced engineers that this waste water is sufficient to mark the Trinity River as exceptional in the state as a source of new power".⁵²⁸ Waste water was essentially any water not needed by humans ignoring the needs of anadromous fishes and those peoples and businesses benefitting from a healthy fishery.

Publicly, therefore, 1942 was an important year for the Trinity River. Although as yet the diversion was still part of the State Water Plan, the Bureau of Reclamation was

Redding, California. Serial No. 20. United States Government Printing Office, 1954, 26-27.

⁵²⁷*Trinity Journal*, March 19, 1942. Among the engineers to visit in 1942 was C. W. Burningham, an important official that previously worked on the Grand Coulee Dam.

⁵²⁸*Trinity Journal*, March 19, 1942.

committed to the project and began taking concrete steps to realize its construction.⁵²⁹

The basic intent of the project, the production of hydro-electric power, and more importantly, irrigation water for the Central Valley, was clearly established. Bureau of Reclamation engineers (and State engineers before them) favored a design that consisted of two dams and a hydro-electric plants in-Basin on the Trinity River, and a diversion tunnel beginning at the proposed diversion dam at Fairview to convey water through the mountains dividing the Trinity from the Sacramento River basins with plants for producing hydroelectricity at the convenient points along the diversion system. This basic design scheme became the basis for all future study and discussion of the project.

The technological know-how for building the TRD was well in hand by 1942. The Bureau had built or was building other, more ambitious impoundment structures, such as Boulder (Hoover) Dam, Grand Coulee Dam and Bonneville Dam. The major challenge for Bureau engineers was to define the amount of water that could be diverted to the Central Valley while maintaining enough water to satisfy in-Basin needs. The key was the definition of the terms "waste" and "surplus" water. These were interchangeable concepts bandied about by project proponents to convince their opponents that the water diverted was essentially useless if left in place. The Bureau viewed water as a commodity, and defined water as "surplus" or "waste" when it was not used in the Basin, but instead simply flowed to the Pacific Ocean where it was wasted. The Bureau had two important tasks. First, it had to determine the amount of present and future water

⁵²⁹The Bureau of Reclamation began studying the strata at the proposed dam site in 1942 even though the project was still part of the State Water Plan. See: *Trinity Journal*, January 8, 1942; March 19, 1942; July 23, 1942; August 19, 1943; July 6, 1944; March 1, 1945.

needs in the Basin. Second, it had to quantify the precise amount of water available in the Basin, and subtract present and future in-Basin needs to come up with the number of acre-feet that could safely be diverted to the Central Valley. Knowing these numbers would allow the Bureau to predict the amount of surplus water Central Valley agricultural interests could expect to get from the project, and the amount of electrical power the project could produce. Knowing these numbers would also allow engineers to come up with the precise design and costs of the project. The Bureau of Reclamation had experience building many structures on other rivers throughout the nation, but on the Trinity River, the previous experience of Bureau engineers and hydrologists was less valuable because of the basic physical and behavioral characteristics of the Trinity River.

The Bureau had to determine the average amount of run-off in the Trinity River, including flood waters, over time. But in the Trinity Basin, targeting flood water as a source for diversion water was problematic because of the physical nature of the river. The Trinity River acts more like a mountain stream than a low-land slow-flowing river. Freshets, occur soon after precipitation events and can occur any time of the year. The region usually receives heavy rainfall from October to February - the rainy season - when up to eighty inches of rain can fall in some areas. This rain falls upon high, steep mountains that can, depending on the season, have significant snow pack that will melt with the rain, causing a quick run-off and rapid flooding and a tremendous rise in river levels. Floods on the Trinity are, therefore, unpredictable, and the amount of water running out of the Basin varies tremendously year to year. While an "average" might be calculated, there was no way to compile completely reliable flow-data statistics because of the extremes in run-off levels. Moreover, flow data records for the Trinity based upon

stream gauges dated only to 1910, and those responsibly for reading the gauges gathered the inconsistently and not in the same areas year after year. The Bureau came to the Trinity River with experience on projects where floods and the amount of water they brought were somewhat more predictable. Usually floods on the Sacramento, Colorado and Columbia come gradually in spring and early summer with thawing in the mountains. The Trinity River was so isolated that available data was spotty, and an understanding of the river's behavior incomplete. Therefore, predicting an "average" flow on the Trinity was problematic, if not sheer guess-work.⁵³⁰ Because of the unpredictability of run-off levels, and the variation in total yearly precipitation amounts, large storage reservoirs were essential and became a necessary centerpiece of the proposed diversion.

A second task for Bureau engineers was to calculate in-Basin present and future water needs. Once the Bureau of Reclamation had these statistics in hand, they could calculate the amount of surplus or waste water available to the project for diversion by subtracting from the overall Basin supply the known amount needed for real human uses and theoretical amount for future human uses, and subtracting the latter numbers from the former. The Bureau of Reclamation found that there were few large water users in the region. The Trinity River Basin had very little irrigated agriculture (the Hoopa Valley had the most arable land in the region, but agriculture there was not dependent upon the Trinity River for water) and few diversions of water from the Trinity or its tributaries except for diversions for mining and lumber milling. It is significant that the latter two

⁵³⁰In 1924 the Federal Power Commission recognized the wide variation in Trinity River flow levels, and used this extreme to justify the need for large storage reservoirs. See D.C. Henry, U.S. Grant, and W.F. McClure, Report to the Federal Power Commission on the Uses of the Trinity River, California.

industries returned water to the river after use - thus the bureau did not considered them water "consumers," but rather, only water users. Navigation, another use considered, was of little concern because it was confined to the lower Klamath River (of which the Trinity is the main tributary) where limited commercial navigation took place. The most significant difference between the study undertaken by the Bureau of Reclamation and other agencies that studied the river was that the Bureau was forced to address the water needs of anadromous fishes on the Trinity. By the 1940s, when the Bureau began compiling data on the river, sport fishing had become a major regional industry with resorts throughout the Basin catering to salmon and steelhead fishermen. Resort owners, chambers of commerce, and sportsmen's organizations pressured the Bureau to determine the amount of water needed to protect the fishery before building the project. The Bureau turned to the U.S. Fish and Wildlife Service to study the question the amount of water needed to sustain anadromous fishes, primarily salmon and steelhead, was unknown.⁵³¹

Meanwhile, Trinity County established a County Planning Commission to study the potential impacts of the project on the county, and to gather more technical information. Throughout the early 1940s, after the Bureau of Reclamation expressed interest in the project, there was little general local support for a diversion, but the Trinity County Planning Commission reserved its decision on the project until it could compile

⁵³¹Calculating the amount of water needed to protect the Trinity River fishery was advocated by resort owners and sport fisherman. Native Americans were not well represented in the debate surrounding the project. For the results of the USFWS study of the fishery, see James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950.

all available data.⁵³² By 1945, the year the State of California removed the Trinity diversion from its State Plan, The Bureau of Reclamation and the Fish and Wildlife Service were busy studying different aspects of the diversion to determine project impacts and, by implication, the amount of water available for diversion. Those agencies shared information to avoid duplication of effort and create a more thorough study.

On August 20 1948, C. William Burningham, Bureau of Reclamation Engineer in charge of the initial investigation of the TRD, appeared before a meeting of anxious Trinity County residents and assured them that the project was feasible, but that its construction, which he estimated would take four years, depended upon defense needs and the wishes of Basin residents. The project benefits, according to Burningham, would be power generation (with plenty of power available to Trinity County), enough irrigation water to service 750,000 acres in the Central Valley, potential local recreational opportunities, and most importantly, jobs. Burningham also assured residents that the project leave enough water in the river to maintain salmon and steelhead runs, and other wildlife.⁵³³

Despite this positive endorsement by Burningham, the project remained unapproved and was temporarily deactivated in 1948 by the Bureau of Reclamation for a

⁵³²On February 23, 1945 a meeting was held by the Army Corps of Engineers in Eureka, California to discuss diverting the Trinity River. The *Trinity Journal* reported that there was general opposition to the project from commercial and sport fishing interests, lumber interests, and "Indian reservations." *Trinity Journal*, March 1, 1945. Transcriptions of this meeting have not been located and opponents of the project have not been clearly identified.

⁵³³*Trinity Journal*, March 22, 1945; June 28, 1945; August 28, 1948. By June, 1945, all agencies except the Fish and Wildlife Service had submitted preliminary reports to the Bureau of Reclamation. The USFWS submitted its report in 1950, and so one must question the information upon which Burningham based his statements in 1948.

lack of funding. One year later, in 1949, state Senator E. J. Regan of Trinity County introduced a bill in the California State Legislature to have the Trinity River project restored to the State Water plan where the state could construct the diversion on its own. Regan's actions caused fighting among representatives and senators from Humboldt, Siskiyou and Shasta counties who succeeded in tabling the proposed legislation. Opposition emerged over appropriating water from the Trinity to the Sacramento drainage basin, because Shasta and Siskiyou counties wanted Trinity River water for irrigation and domestic purposes. State Senator Irving T. Quinn of Humboldt County, who had remained consistently against diversion, continued to oppose the project insisting that the water remain where it was.⁵³⁴

Matters remained there until early 1950 when the Bureau of Reclamation claimed that increasing demand for water and electricity in the Central Valley made the project a necessity and it was reactivated. Noting a recent visit to the Trinity River by Richard L. Boke, the Regional Director of the Bureau of Reclamation, the editor of the *Trinity Journal* stated that "In view of the very rapidly increasing demands for water and power in the Central Valley...the Bureau of Reclamation has recently reactivated its studies of the Trinity River Division". Citing the usual benefits associated with the project such as in-Basin hydroelectricity and recreation, the *Journal* reported for the first time that the project would also help control flooding:

Preliminary studies by the Bureau of Reclamation engineers indicated that with adequate reservoir storage at the Trinity dam site near the old

⁵³⁴*Trinity Journal*, April 28, 1949.

Fairview mine, the high winter flood flows of the Trinity River can be re-regulated to provide adequate flows for all future uses of the basin as well as making it possible to divert substantial quantities of water to the Sacramento valley.⁵³⁵

The editor also revealed for the first time another argument that would be embraced by project proponents for the remainder of the effort to build the diversion - that the Trinity River Division would actually *help* the anadromous fishes of the Trinity River:

It would be possible to increase the extremely low [summer] flows of the Trinity River [with an impoundment] to the advantage of fish life as well as controlling the high water flows which cause flood damages along the Trinity River. Flood flows which are destructive to property and structures along the river are also said to be highly detrimental to the anadromous and sport fish.⁵³⁶

In a final statement, possibly calculated to defuse the sport and commercial fishing interests opposed to the project, the editor included in his comments on the

⁵³⁵*Trinity Journal*, June 29, 1950.

⁵³⁶*Trinity Journal*, June 29, 1950.

project that with the assistance of the Fish and wildlife Service, "the Bureau of Reclamation has developed a method of operating the proposed Trinity River reservoir to provide water for the protection and propagation of fish life in the Trinity River."⁵³⁷ In reality, the Fish and Wildlife Service had no single method for preserving the anadromous fishery because there was only a limited understanding of the impact of water diversions and high dams upon anadromous fishes.⁵³⁸

Throughout 1950, the numerous public meetings held concerning the possible diversion of the Trinity River revealed that the concerns of residents were less important to the Bureau of Reclamation and other proponents of the project than residents had been led to believe. At a meeting in Lewiston, Marshall Jones, planning engineer for the Bureau of Reclamation, ominously informed residents that there was no block of power reserved for Trinity County and no guarantees that power from the project would go to Trinity County unless transmission lines were built privately. Jones told the fifty or so attendees that the water remaining for the Trinity River after diversion would be 100 to 300 fps, enough, he said, for recreation and to maintain fish and wildlife. In fact, Jones stated that the cooler in-river water summer water temperatures created by releases of reservoir water would actually be beneficial to fish reflecting a flawed understanding of

⁵³⁷*Trinity Journal*, June 29, 1950. The editor was basing his statements upon the report released by the Fish and Wildlife in February 1950. The report did not contain any single proposed method for protecting the Trinity River fishery, rather, it offered several scenarios that might be used by the Bureau of Reclamation to maintain fish life. But these scenarios were only suggestive and were based upon incomplete data. See James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950.

⁵³⁸James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950.

the complex needs of anadromous fishes.⁵³⁹

After the meeting at Lewiston, the general tone in the Trinity River region regarding the project was one of concern. Adding to the anxiousness of residents, at a meeting in October 1950, Congressman Clair Engle, a strong supporter of the project, informed residents that they had better express their views on the project forcefully and soon, because he believed the project's construction to be a done deal. Engle, obviously catering to his constituency, stated that he believed the views of Trinitarians should determine if the project were built or not, but he predicted the diversion would be built regardless of what the residents of Trinity County thought about it. Therefore, Engle urged residents to form a committee to gather information concerning what residents of the region would like to see in the final legislation before Congress authorized the project.⁵⁴⁰

Engle's warning and encouragement reveals that public opinion in Trinity County was not well-organized. A lack of organization concerning the project might be explained in several ways. First, the region itself was isolated and remote. Population concentration was in small communities clustered along the banks of the Trinity River and its tributaries, in isolated valleys, and along important transportation routes. Second, residents may have been complacent, considering the diversion project had been discussed for almost thirty years with little evidence that it would ever be built. Finally,

⁵³⁹*Trinity Journal*, September 14, 1950. Again, Jones is referring to statistics presented in the 1950 USFWS report. Jones' statement of 150 to 300 fps reveals the fact that the quantity needed for fish was not clearly known.

⁵⁴⁰*Trinity Journal*, October 19, 1950.

those holding elective office and other county officials in Trinity County generally supported the project hoping for economic development. Trinity County did not share in the prosperity of post-war economic boom and a major water project offered economic benefits. Nevertheless, there was no consensus of opinion, and many residents opposed it.⁵⁴¹

Northern Californians listened to Engle's warning. Throughout the remainder of 1950 and into 1951, meetings of representatives from all northern counties affected by the proposed diversion met to form the Trinity Research Committee.⁵⁴² Throughout the region, citizens and public officials expressed opinions, pro and con. Arguments that the diversion was as good as done prompted the opinion that residents should act to ensure a block of power for Trinity County. Others, particularly former state senator Irwin J. Quinn of Humboldt County, argued that proof be shown that there was an actual need in the Central Valley for the waters of the Trinity River before the project was authorized. Meanwhile, Edwin J. Regan, representative from Trinity County, urged an investigation of the legal status of water rights. His concern centered upon whether the county where

⁵⁴¹The residents of Trinity Center were split on the diversion because the reservoir created by the project would inundate their homes requiring them to move their entire community. Humboldt County representatives were consistently skeptical about the project. *Trinity Journal*, January 31, 1952.

⁵⁴²This was one of several short-lived committees formed during the years preceding the project. For a brief review of the groups formed, their membership, and their lack of unity, see "Hearing Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Third Congress, Second Session, on H.R. 123, To Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Development, Central Valley Project, California, Under Federal Reclamation Laws." April 16, 1954, Redding, California. Serial No. 20. United States Government Printing Office, 1954., 21-24.

the source of water was located had any legal right to it or not.⁵⁴³

Perhaps indicative of the current climate of opinion in Trinity County as of 1951, thirty four residents of Trinity Center, a town up-river from the project that would be inundated by the reservoir created behind the Trinity Dam, informally voted on the project. The majority, twenty eight, voted to support the project because of its potential economic benefits. The main benefit they saw was the potential for increased business related to recreation and rising property values. Of main concern was that the Bureau of Reclamation, when it built a new Trinity Center, would guarantee adequate homes, roads, and infrastructure to replace that lost to the project.⁵⁴⁴

The most vocal opposition at this time came mostly from Humboldt County. Former State Senator Irving T. Quinn, remained steadfast in his opposition to the project, and was supported by Trinitarians that also opposed the project. For example, Elmer K. McDonald, also of Trinity Center, and a former Trinity County Supervisor, staunchly opposed the project on several points, and threw his support behind Quinn's camp. In a letter to Representative Clair Engle, McDonald pointed out that the project's supposed benefits were false. He claimed that the diversion would destroy fish and wildlife habitat above the dam and ruin anadromous fish runs. Furthermore, the diversion, because of its placement high in the Trinity watershed, would not reduce flooding as promised. McDonald also claimed that the Bureau of Reclamation had failed to outline specific

⁵⁴³*Trinity Journal*, November 2, 1950; November 23, 1950; January 18, 1951; May 24, 1952; July 19, 1951. The Committee consisted of representatives from Humboldt, Del Norte, Trinity and Shasta counties.

⁵⁴⁴*Trinity Journal*, December 6, 1951; December 13, 1951.

plans for residents of Trinity Center, and those resident's concerns were not given adequate consideration. Finally, the former County Supervisor warned that if the water was diverted to the Central Valley, Trinity County would someday find itself in need of the water taken by the project, but with no way of getting the water back.⁵⁴⁵

Early in 1952, Congressman Engle presented draft legislation for the Trinity River Division to the public for comment.⁵⁴⁶ Engle warned that the legislation was going forward and time for public comment was at hand. Within Trinity County, strong organized opposition to the plan never materialized. Rather than outright opposition, groups such as the Northern Trinity Sportsman Association, the Trinity County Planning Commission, the Trinity County Board of Supervisors, the Weaverville Chamber of Commerce, and the Trinity River Research Committee wanted to ensure that their interests would be protected within the legislation sponsored by Engle, including a block of hydroelectric power reserved for the county.⁵⁴⁷ These groups did not argue that the project should not be built, but rather they were concerned about the spoils of the project and its impact on the river.

It was organizations outside of Trinity County that made the most important, albeit ineffective, stand against the project. Responding to Engle's draft legislation,

⁵⁴⁵*Trinity Journal*, January 31, 1952. Other opinions against the project can be found in the *Trinity Journal*, February 14, 1952.

⁵⁴⁶*Trinity Journal*, December 13, 1951; January 3, 1952; January 10, 1952.

⁵⁴⁷*Trinity Journal*, February 7, 1952. The Trinity River Research Committee, made up of members of four counties, could not agree on the project. Only the Shasta and Trinity counties members met, said Armon Heffington, the committee member from Trinity County, and they only met in Trinity County. See *Trinity Journal*, February 14, 1952.

several opponents spoke during a public meeting at Weaverville in February, 1952. Indicative of such opposition were groups such as the Klamath River Development Association, which feared that a diversion would stymie industrial development in the region, or the Siskiyou Farm Bureau, who wanted the water for local interests. These groups were most concerned about the lack of a comprehensive regional study of in-Basin water needs. With inadequate information, how could the effects of the project clearly be understood? The Outdoor Writer's Association of America and the Associated Sportsmen of California, meanwhile, feared that the diversion would destroy one of California's best trout and salmon fishing streams.⁵⁴⁸

The general opinion reported by the local press during this period was that the majority of Trinitarians supported the diversion, but were concerned over specifics. Representative Engle, for his part, assured residents that they would have significant input regarding the contents of any legislation that he introduced to Congress.⁵⁴⁹ In fact, Engle reassured Trinitarians at a February 1952 meeting in Weaverville that he would withdraw his bill to Congress during "any stage of its enactment, if the people of Trinity County were not satisfied with its provisions." It is significant to note that Engle informed the audience that he regarded the Trinity County Board of Supervisors to be "the legislative spokesman for this county." This meant that the views of the Board of Supervisors was the view Engle would accept as representative of the entire county, which would have important consequences at a later date. Answering residents' concerns

⁵⁴⁸*Trinity Journal*, February 14, 1952.

⁵⁴⁹*Trinity Journal*, February 14, 1952; February 28, 1952.

that too much water would leave the Basin if the project went forward, Engle stated that he did not believe that "one bucketful of water necessary to this [Trinity River] watershed" would be diverted, and as for destruction of salmon runs, "The argument that [the diversion] will ruin fishing is absolute nonsense".⁵⁵⁰ Engle made his statement well before the completion of any comprehensive study addressing in-Basin water needs and local impacts of the diversion had been completed.⁵⁵¹

In April, 1952, Engle introduced a bill to Congress asking for authorization of the Trinity River Division of the Central Valley Project. In response, the California State Assembly passed a resolution asking Congress not to authorize the project until further studies were made on the project impact and deliveries.⁵⁵² Regardless of local opposition or arguments over water deliveries, there was a real possibility that the project would be approved and constructed without Trinity County support and over any objections. Clair Engle reminded his constituency of this fact when he stated in May, 1952 that the American River Dam, another large component of the Central Valley Project, was being built without any final authorizations for water deliveries. Too much wrangling over where the water for that project would go created the situation on the American River, claimed the congressman, and he hoped that "we don't lose the Trinity project that

⁵⁵⁰*Trinity Journal*, February 28, 1952.

⁵⁵¹For a brief discussion of the call for river surveys see *Trinity Journal*, April 23, 1952; May 22, 1952.

⁵⁵²*Trinity Journal*, April 3, 1952.

way."⁵⁵³ In fact, on May 6, 1952, the Bureau of Reclamation presented to the State of California a preliminary report on its proposal to build the Trinity River Project. The Bureau sought comments and recommendations. The report contained all the features that the Bureau would later build, therefore those supporting and opposing the diversion clearly knew the major physical specifications of the project by May, 1952.⁵⁵⁴

During the first half of 1952, potential water users in the Central Valley expressed growing interest in the Trinity River Diversion project. At meetings in Trinity County, representatives of the Central Valley began to appear with increasing regularity.⁵⁵⁵ Agricultural interests in the San Joaquin Valley would benefit most from water deliveries and so it was natural that they would push for the project.⁵⁵⁶ Trinitarians who expressed opinions about local water going to the Central Valley generally resented San Joaquin farmers, and questioned the logic of sending Trinity River water, at essentially subsidized government prices, to Central Valley farms. Clair Engle stated that there was "no logical reason" for the water to be "going to the San Joaquin valley," but also claimed that just because farmers in the Central Valley would receive subsidized water taken from the Trinity River was "no reason to block a good project" for Trinity County. When offering

⁵⁵³*Trinity Journal*, May 22, 1952.

⁵⁵⁴Thomas B. Waddell, "The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature", 2. What was not known was the exact amount of water to be diverted and the impact of the project on the Trinity River fishery. Furthermore, in 1955, the Bureau revised its plans, increasing the reservoir behind Trinity Dam from 1,800,00 acre feet to 2,500,000 acre feet.

⁵⁵⁵*Trinity Journal*, May 22, 1952; June 12, 1952.

⁵⁵⁶*Trinity Journal*, May 22, 1952; June 12, 1952. In June of 1952, the Sacramento Valley Irrigation Committee sponsored a meeting in Trinity County to organize county and regional supporters in their effort to gain state and federal approval for the project.

his assessment of project deliverables, Engle stated that water for the Sacramento valley was in short supply. In fact, the congressman asserted that because of over-commitment and over-subscription, the valley was short by an incredible 800,000 acre feet.⁵⁵⁷

From 1952, when Engle (the bill's main sponsor) began gathering public opinion on his legislation, until 1955, the proposed diversion of the Trinity River moved forward on paper within government circles. At the request and urging of Humboldt County, in 1952 the Bureau of Reclamation belatedly began a river survey of the specific water needs in the Klamath-Trinity Basin. Division of Water Resources of the State of California also began a belated study of water needs in the region. Potential water users in the Central Valley resisted these new surveys, stating that additional surveys would delay construction of the diversion. The Bureau apparently had enough information to move forward with basic project planning before these reports were ready for review because it carried-out planning for the project well before these reports were ready for review.⁵⁵⁸

A growing concern among people interested in the project within and outside of the Trinity River Basin was the question of the impact the proposed diversion would have on the fish and wildlife of the region.⁵⁵⁹ In 1950, the United States Fish and Wildlife

⁵⁵⁷*Trinity Journal*, May 22, 1952.

⁵⁵⁸*Trinity Journal*, July 24, 1952. The Trinity River Division Project was approved before these reports were available for review. See Natural Resources of Northwestern California: Preliminary Report, United States Department of the Interior, Pacific Southwest Field Committee, 1956; see also, Klamath River Basin Investigation, Bulletin No. 83, State of California Department of Water Resources, Division of Resources Planning, Sacramento, May, 1960.

⁵⁵⁹In 1944, O.M. Boggess, agent at Hoopa Valley Reservation, wrote the Commissioner of Indian Affairs to express his belief that the Indians of Hoopa Valley Reservation "would be seriously injured by

Service issued a study on the Trinity River fishery as part of the overall effort to gather data on the river. The report, while far from comprehensive, provided basic information for discussion among interested parties.⁵⁶⁰ The Wildlife Service stated that the study results were not conclusive because continuous data collection had occurred for only two years because of wartime interruptions. The authors, moreover, issued a disclaimer stating that the study was "an interim report with most findings and conclusions subject to possible revision pending further investigational findings."⁵⁶¹ The Wildlife Service was faced with the reality that the science of anadromous fisheries was still in its infancy.

The authors of the report concluded that the proposed diversion at Fairview would cut-off 50% of the spawning grounds for King Salmon and an unknown, but larger percentage, for steelhead. The authors did not claim that the diversion would destroy the fishery, but concluded that it would be necessary to initiate measures to mitigate the loss of spawning habitat. The authors offered three possible solutions. First, additional spawning grounds could be created by increasing the proposed flow of the Trinity River below the dam while fish were spawning. Second, additional spawning grounds could be built within existing streams below the proposed dam site. Finally, the construction of a

any reduction in available fish." However, because the diversion was a federal project, Boggess refused to oppose it publicly unless the Indian Service was convinced the diversion would damage Indian holdings. Letter, Boggess to Commissioner of Indian Affairs, Eureka, California, May 23, 1944. RG 75 BIA, CCF 1909-1929, HV, Box 50, File 341, Part D. NA, Washington, D.C.

⁵⁶⁰James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950. This study is the result of investigations that began in 1942, however, the study was interrupted for a number of years making its conclusions suspect.

⁵⁶¹James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950, 1.

fish hatchery to artificially propagate anadromous fishes and maintain populations within the Trinity River was another possibility. One or a combination of these approaches, suggested the authors, might satisfactorily maintain the anadromous fish population within the Trinity River.⁵⁶²

The most significant aspect of the report is the conclusion that the amount of water needed below the proposed diversion to maintain an acceptable number of natural nesting sites for anadromous fishes was only 150 fps. It is important to note that this conclusion was based upon the author's assumption that the median flow of the Trinity River was 150 fps, and that the salmon population was at its maximum density during the period when the biologists made their survey. Perhaps of even greater significance, as will be seen, is that project legislation embraced that quantity of water as an acceptable level of release for the project, although it was clearly based upon incomplete data.⁵⁶³

While the Bureau of Reclamation and the State undertook their belated surveys of the water needs of the region and the impacts of the diversion, political maneuvering

⁵⁶²James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950., 57.

⁵⁶³James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No 12. United States Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C., February, 1950., 51-65. This number is significant because it is derived from limited and incomplete information. Flow data for the Trinity River was gathered sporadically and reported in USGS Water Supply Papers, and federal and state reports. The data was limited temporally and geographically. The oldest flow data dated from 1910, but consistent yearly recording was not initiated until the 1930s. The activities of the USGS were part of a larger effort to quantify and classify the rivers of the United States. See Steponas Kolupaila, "Early History of Hydrometry in the United States," American Society of Civil Engineers: Journal of the Hydraulics Division, 86(January 1960), 1-52. Fish counts were also limited because they were based upon limited physical observations by air, and commercial catch statistics from 1916 to 1943. See L.L. Bryan, Summary of Investigations on Trinity River and Tributaries, California, 4-5.

surrounding the project continued.⁵⁶⁴ In 1953, just before leaving office, Secretary of the Interior Oscar Chapman presented the Trinity River Project to Congress and President Harry Truman with a finding of feasibility, thereby circumventing the need for congressional authorization of the project. This action made the diversion, officially called the Trinity River Division, a part of the Central Valley Project.⁵⁶⁵ Chapman's act did not authorize funding, which still depended upon congressional action, but the secretary's action caused consternation among project opponents, particularly in community of Eureka where Chapman's move was officially condemned by the Humboldt County Board of Supervisors as "premature".⁵⁶⁶ Chapman's action was not unusual, considering that he had authorized two other components of the CVP in the same way, which was within his power to do, yet the California Department of Public Works had yet to submit its comments, views and recommendations regarding the proposal.⁵⁶⁷

As the project neared reality, local political lines hardened. At a meeting in the

⁵⁶⁴Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California, State of California, Department of Public Works, April, 1953; The reports that emerged from this activity are Natural Resources of Northwestern California: Preliminary Report, United States Department of the Interior, Pacific Southwest Field Committee, 1956; Klamath River Basin Investigation, Bulletin No. 83, State of California Department of Water Resources, Division of Resources Planning, Sacramento, May, 1960.

⁵⁶⁵See Trinity River Division, Central Valley Project (Ultimate Plan) California. House Document 53, 83d Congress, 1st Session. Washington, D.C., 1953, III-IX.

⁵⁶⁶*Trinity Journal*, January 8, 1953.

⁵⁶⁷*Trinity Journal*, January 15, 1953. The State's comments are found in Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California, State of California, Department of Public Works, April, 1953.

Trinity County courthouse in January 1953, residents and interest groups offered opinions both pro and con in response to Chapman's feasibility determination and the handling of the project in general, reflecting a split among residents over the project. Prior to the January meeting, the Trinity County Board of Supervisors had unanimously endorsed the project in 1952, even when many residents objected. For example, in District #4, along the lower Trinity River, a petition to the Board of Supervisors demonstrated that of 133 residents who signed the petition, only four supported the project. Nevertheless, their supervisor endorsed the project.⁵⁶⁸

The January 1953 meeting at the Trinity County Courthouse brought 52 residents to Weaverville. The meeting is important because of the voiced opposition, and the final show of hands. Among the arguments put forth by residents opposed to the project were that those benefitting hoped that the project would bring jobs, increased profits for business and increased property values. One angry resident opposing the dam proclaimed that Trinity County was being "exploited for the benefit of everybody but Trinity County". Another resident called for a county-wide vote to determine public opinion, and was told by Armon Heffington, Chairman of the Trinity River Development Committee, that "there was no time to do it now," because Trinity County "committed itself some time ago to go along with the diversion". Heffington then added, that by the county, he was referring to the Trinity County Board of Supervisors. In response, an angry resident asked Heffington, "Then why ask for protests [referring to the solicitation

⁵⁶⁸*Trinity Journal*, October 23, 1952; January 8, 1953; January 15, 1953. The unanimous endorsement was taken by Clair Engle to mean that Trinity County residents supported the project, thus Engle did not withdraw his bill as he said he would if the county was not behind it. For Engle's statement, see *Trinity Journal*, February 28, 1952. There was no county-wide vote on the project.

of opinions pro and con] if the project is already approved?". Heffington stated that the meeting was held merely to gauge sentiment on the project and Engle's proposed legislation. When asked to show hands for and against the project, favorable response dominated by 46 to 6.⁵⁶⁹ There is no record of where these people resided within Trinity County, but the overall favorable vote suggests they were up-river residents where the project would generate income. Nevertheless, while many residents remained divided over the project, Trinity County officials supported the diversion, and Congressman Engle looked to them as representing the opinion of Trinity County.

In April 1953, after hearing arguments for and against the project, California Governor Earl Warren endorsed the Trinity River Division of the Central Valley Project, and sent word of his support to the Secretary of the Interior. The project now had to pass through the Department of the Interior (under a new Secretary) and Congress before construction could begin.⁵⁷⁰ Warren's endorsement removed a substantial roadblock by transferring state-held water rights to the federal government.⁵⁷¹

Governor Warren's endorsement went to Washington in 1953 at the same time that the California Department of Public Works issued its views and recommendations concerning the project to the Department of the Interior. Public Works found the project

⁵⁶⁹*Trinity Journal*, January 15, 1953. The strongest opposition to the diversion emerged down river from the project along the lower Trinity and in Humboldt County where residents were more dependent upon water remaining in the river.

⁵⁷⁰*Trinity Journal*, April 16, 1953.

⁵⁷¹The State of California granted the water rights it held on the Trinity River to the Bureau of Reclamation for the Trinity River Division. The Bureau also had to apply for additional water rights. *Trinity Journal*, March 20, 1958.

to be feasible from an engineering standpoint and recommended that the project be constructed at the earliest possible date. The Department of Public Works did, however, question the construction cost estimates, stating that they were possibly too low. Also, the report called for changes in the scheduled release of water from the proposed dam to sustain fish in the Trinity River. While the State concluded that the amount of water scheduled for release was adequate, the timing for releases was not appropriate and should be adjusted.⁵⁷²

Significantly, the Public Works report also contained comments from other State agencies on the feasibility and potential impact of the Trinity Division. The report contained a glaring condemnation of the project from Seth Gordon, Director of the California Department of Fish and Game. Written in 1952, Gordon's report expressed serious reservations about the potential harm of the project. Also, project proponents' claims that fish life would actually *increase* in the Trinity River because flood control provided by the Trinity Diversion, was over optimistic if not false. Gordon claimed that 38% of king salmon spawning grounds, and 75% of steelhead spawning grounds would be eliminated by construction of the TRD. Bureau of Reclamation claims that the loss of habitat would be made-up for by flood control was based upon the assumption that floods washed away spawning gravels and this would no longer be a problem with the after the TRD went on line. Gordon countered this assertion by stating that flushing gravels was a

⁵⁷²House Document No. 147, 83rd Congress, 1st Session, 1953, "Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California" United States Government Printing Office, 1953, 29, 32. This report contains a summary review of previous reports on the Trinity River, and is critical of the conclusions reached by the U.S. Fish and Wildlife Service Report regarding the project's impact upon the salmon and steelhead fishery.

beneficial function of floods, and that controlled flows might cause spawning beds to become compacted, creating additional loss of spawning sites. Gordon concluded his report by recommending that if the project were built, there should be larger water releases from the TRD into the Trinity River, new pollution ordinances aimed at stopping dredge and hydraulic mining in the region, and the construction of counting fences and spawning facilities to aid in artificial propagation of salmon and steelhead.⁵⁷³ Despite Gordon's reservations, the Director of Public Works endorsed the project and it moved forward.⁵⁷⁴

In January 1954, the Eisenhower Administration allotted \$100,000 in its budget to begin preliminary construction planning for the Trinity River Division, initiating the process that would eventually lead to funding and approval.⁵⁷⁵ Battle lines over the project hardened, and two camps emerged. Among those supporting the Trinity River Division included officials of Trinity and now Shasta counties, and farmers from the Westlands Water District of the San Joaquin Valley. Opposition forces included officials of Humboldt and Del Norte counties located downstream from Trinity County who had important interests in recreational and commercial fishing. There are no sources showing the number of voters supporting or opposing the project, but evidence indicates the

⁵⁷³House Document No. 147, 83rd Congress, 1st Session, 1953, "Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California" United States Government Printing Office, 1953, 74-81.

⁵⁷⁴House Document No. 147, 83rd Congress, 1st Session, 1953, "Views and Recommendations of State of California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California" United States Government Printing Office, 1953, 1-2.

⁵⁷⁵*Trinity Journal*, January 28, 1954. The \$100,000 appropriation was deleted from the 1954 budget, then restored in April, 1954. See *Trinity Journal*, April 8, 1954.

people remained divided with downstream residents generally opposed upstream residents. In March 1954, at a meeting of the Trinity River Committee of the Redding Chamber of Commerce in Shasta County, local project proponents headed by Armon Heffington of Trinity County, invited representatives of the San Joaquin valley to join them in pushing to secure the Trinity River Division. The Westlands Water District had emerged as the main subscriber to the water to be made available by the Trinity River Division, and the San Luis Project, a component of the Central Valley Project designed to divert water to Westlands, was to purchase Trinity River water thereby making the Trinity River Division financially feasible.⁵⁷⁶

Jack W. Rodner, the Manager of the Westlands Water District in the San Joaquin Valley, and Executive Secretary of the California Committee for the Trinity River Development, assured those concerned about Westlands taking too much Trinity River water, that "As desperate as our needs are in the west San Joaquin Valley, we do not want to take a drop of water from the Trinity River until all the water that can be beneficially used in the Trinity and Sacramento areas is definitely reserved for them". Rodner continued by stating that the project could provide everyone with the water they needed:

Studies show that the Trinity River will produce enough water when it is regulated and partially diverted into the Sacramento River, to provide a steady and sufficient supply to Trinity, Shasta and Tehema counties, firm

⁵⁷⁶*Trinity Journal*, March 25, 1954. As with other Bureau of Reclamation Projects, ideally, project beneficiaries were to pay for the cost of construction through water and power purchases.

up the water supply to the Sacramento River area, and take care of initial development of the San Luis Project in the San Joaquin Valley, with surplus still running into the ocean.⁵⁷⁷

Soon after this meeting, a new group formed in Fresno, California to begin a concerted lobbying effort for the project. The lobbying group called itself "Californians for Trinity-Sacramento-San Luis", and as its name suggests, was composed of individuals supporting the Trinity River Division, the Sacramento Canals Unit and San Luis Canal of the Central Valley Project. Armon Heffington of Weaverville, a strong supporter of the project and in constant contact with Congressman Clair Engle, was appointed to act as president of the new committee. The group's goal was to argue its case before a Congressional subcommittee during a hearing scheduled to be held in Redding in April, 1954. Those who opposed the project, including the Humboldt County Chamber of Commerce and officials from Del Norte County, also planned to attend the meeting to argue their case.⁵⁷⁸

By 1954, however, the Trinity River Division had been wedded to the simultaneous approval and construction of the Sacramento Canals Unit and San Luis Project in the Central Valley making it a project of much wider significance. The Sacramento Canals Unit and the San Luis Project were the proposed irrigation water delivery systems for the west Sacramento Valley and for the Westlands Water District of

⁵⁷⁷*Trinity Journal*, March 25, 1954.

⁵⁷⁸*Trinity Journal*, April 8, 1954; April 15, 1954.

the San Joaquin valley. Trinity River water would have to make its way to the fields via these canal and pumping systems, and so interested parties combined forces to argue for their authorization and funding directly to congressmen at Redding and later in Washington, D.C.⁵⁷⁹ Armon Heffington of Trinity County stated that the goal of his group was to stress to the congressmen that they, the Trinity group, were willing "to have surplus Trinity water used where it was so badly needed in the Sacramento and San Joaquin areas," and to call for a revision of the proposed legislation. Heffington wanted to insure an adequate supply of water for Trinity County's present and future needs, and thus clearly "determine the amount of water available elsewhere."⁵⁸⁰

The meeting of the Congressional subcommittee in Redding was well attended by parties on both sides of the issue. Numerous opinions were put forth supporting the project. Many individuals from Trinity County offered their support on the condition that the Bureau of Reclamation guarantee an adequate supply of water for the county. The owner of the Trinity Alps Resort, Bob Delaney, urged support for purely economic reasons. Stating that the project would be good for business, Delaney argued that the project would benefit tourism and protect fish life because the dam would be a "benefit to fishing by the stabilization of the river flow at the mean level thereby protecting fish life." The manager of the Westlands Water District, Jack Rodner, urged authorization, explaining that the combined projects were needed to protect 400,000 acres of farm land

⁵⁷⁹Members of the congressional subcommittee at Redding included Clair Engle, William H. Harrison of Wyoming, Oakly Hunter of California, A.L. Miller of Nebraska, Earnest Wharton of New York, Ken Regan of Texas and Wayne Aspinall of Colorado. Miller was Chairman of the House Committee on Interior and Insular Affairs. *Trinity Journal*, April 15, 1954.

⁵⁸⁰*Trinity Journal*, April 15, 1954.

in need of water. Rodner also reminded the subcommittee that ground water in the San Joaquin valley was being over drafted at a rate nearly four times faster than it could be replaced.⁵⁸¹

Opposition to the project came, predictably enough, from Del Norte and Humboldt counties where, it was feared, economic development would be limited because of water being taken by the Central Valley. As it had proposed at earlier meetings, Del Norte County again asked that "a complete and thorough survey of the water needs of the coast counties" be undertaken before the project was approved. State Senator A. W. Way urged the subcommittee to exhaust all the water supply that remained available within the Central Valley before reaching over the mountains and taking the Trinity River. The Chairman of the Humboldt County Board of Supervisors, Milton Huber, offered to end his county's opposition by stating, "if our needs are met, we will not have any opposition".⁵⁸²

For the first time during the process of debating the advisability of the project, representatives of the Hupa and Yurok tribes attended the meeting in Redding and offered their opinion on the project. Like Del Norte and Humboldt Counties, tribal representatives called for additional survey of regional resources before the project went forward. The Yurok representative, Princess Lowana Brantner, expressed concern over

⁵⁸¹*Trinity Journal*, April 22, 1954.

⁵⁸²*Trinity Journal*, April 22, 1954.. Transcripts of testimony are available in "Hearing Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Third Congress, Second Session, on H.R. 123, To Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Development, Central Valley Project, California, Under Federal Reclamation Laws." April 16, 1954, Redding, California. Serial No. 20. United States Government Printing Office, 1954.

the impact of the project on spawning salmon, and the ability to float logs on the of lower Klamath River if too much water was diverted. The Yuroks were heavily involved in the forest industry, and also relied spiritually, physically and economically upon the predictable return Salmon each season. Brantner feared that if the logging companies shut-down, many Yuroks would be out of work. Robert Lake, representing the Hupa Tribe, asked for completion of additional surveys because he had not seen any of the surveys completed to that time and wanted additional information. Lake, however, offered no opinion on the possible impact of the project on tribal resources.⁵⁸³

The Regional Director of the Bureau of Reclamation, Clyde Spence, countered the opposition by offering his opinion that only a small amount of the water in the Trinity River above the Lewiston Dam site was needed within the Basin. Also, said Spence, the Sacramento and San Joaquin valleys were short of "developed" water supplies, and remaining resources in the Central Valley were economically impractical to develop.⁵⁸⁴ The Bureau of Reclamation was firmly behind the project, and considered it a necessity if all the water demands in California were to be met.⁵⁸⁵

After the congressional subcommittee meeting, the project continued to move

583"Hearing Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Third Congress, Second Session, on H.R. 123, To Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Development, Central Valley Project, California, Under Federal Reclamation Laws." April 16, 1954, Redding, California. Serial No. 20. United States Government Printing Office, 1954.

584*Trinity Journal*, April 22, 1954.

585*Trinity Journal*, June 17, 1954; See also "Hearing Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Third Congress, Second Session, on H.R. 123, To Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Development, Central Valley Project, California, Under Federal

forward. In October, 1954, a timber survey was conducted on the proposed reservoir sites on the Trinity River to expedite timber clearance once the project was approved.⁵⁸⁶ In December 1954, the *Trinity Journal* reported that Clair Engle would introduce his final legislation for project authorization to Congress early in 1955.⁵⁸⁷ Nevertheless, political wrangling and battles continued because until Congress authorized the project and the Bureau finalized the design, many questions remained as to just how the project would operate. The question of distribution of the hydroelectric power produced by the TRD was of central concern to the Pacific Gas and Electric Company which offered to build and operate distribution systems thereby creating a public-private partnership.⁵⁸⁸ Another important issue was the state's own water project to develop the Feather River. Proponents of the Feather River Project (FRP) wanted to wed it to the Trinity River Division making the entire system a state project.⁵⁸⁹

In January 1955, Engle introduced his bill to Congress asking for authorization of the Trinity River Division. Prior to its introduction, Armon Heffington asked the Trinity

Reclamation Laws."

⁵⁸⁶*Trinity Journal*, October 28, 1954.

⁵⁸⁷*Trinity Journal*, December 30, 1954.

⁵⁸⁸*Trinity Journal.*, December 30, 1954; March 3, 1955; March 17, 1955; April 7, 1955; April 14, 1955; April 28, 1955; May 5, 1955; May 19, 1955. The issue was not settled before the legislation was approved. Within the authorization there was a stipulation to continue negotiations with PG&E over project power facilities and deliveries. Congress rejected having PG&E build the generation and transmission facilities in partnership with the Bureau of Reclamation. *Trinity Journal*, May 2, 1957; August 22, 1957; July 23, 1959; August 13, 1959.

⁵⁸⁹*Trinity Journal*, February 17, 1955; March 3, 1955; April 14, 1955; May 5, 1955. The proposal caused a controversy over building the San Luis Unit and the Feather River Project. Fear of overlapping facilities and controversy over water deliveries, power deliveries, and state-federal ownership were also part of the problem arising from this proposal.

County Board of Supervisors to give their endorsement to the bill. Heffington explained that the bill to be introduced to Congress was similar to earlier drafts, but it did not specify the rate of flow, in other words, the amount of water discharged, to be left in the Trinity River below the diversion dam. Instead, the amount of water released from the dam would be left to the discretion of the Secretary of the Interior.⁵⁹⁰ The rate of discharge was a main concern of Trinity County residents. Upon hearing that the Engle Bill did not contain specific numbers for the rate of flow, the board asked that the bill include a stipulation that guaranteed a minimum of at least 150 feet per second release be maintained below the dam to maintain fish life. Engle agreed to incorporate this stipulation into his bill, and the Trinity County Board of Supervisors then gave their qualified endorsement to the legislation.⁵⁹¹

The minimum flow guarantee set-off a controversy over just how much water was needed to sustain fish life in the Trinity River. Because the design of the diversion could not accommodate a fish ladder for salmon and steelhead, and the construction of the dam would cut-off access to a major portion of the spawning beds for salmon, the amount of water needed in the river below the dam was crucial and hotly debated. Soon after the Board of Supervisors gave their approval, Weaverville residents circulated a petition asking for a minimum of 221 fps based upon the available data gathered by the United

⁵⁹⁰*Trinity Journal*, January 6, 1955.

⁵⁹¹*Trinity Journal*, January 6, 1955. Concerned citizens circulated a petition asking for 221 fps to be the minimum flow below the dam. The *Trinity Journal* reported that 221 fps represented the mean flow of the Trinity River. See also, *Trinity Journal*, January 13, 1955.

States Fish and Wildlife Service.⁵⁹² The petition stated that available flow survey data was extremely limited, and the data that did exist suggested a greater flow than 150 fps was needed to maintain fish life.⁵⁹³ Nevertheless, the final bill sent to Congress asked only for the minimum 120 fps, or the amount needed to maintain fish life below the dam as determined by the Secretary of the Interior.

Throughout 1955, Congressional committee hearings on the proposed legislation introduced by Clair Engle continued in Congress.⁵⁹⁴ Within California, controversy over the construction and operation of the Trinity River Division, the San Luis and Sacramento Canal projects and the state's own Feather River Project had erupted within the State Legislature. The conflict threatened to undermine the authorization of the Trinity River Division and related projects. But the controversy ended when the California Legislature called for immediate construction of the Trinity Division and San Luis projects, setting aside its decision on the future integration of those projects with the state's own Feather River Project.⁵⁹⁵

⁵⁹²*Trinity Journal*, January 6, 1955; January 13, 1955.

⁵⁹³The figure of 220 fps may be inferred from the 1950 report by the USFWS. Yet the authors specifically claim that, under certain conditions, a minimum of 150 fps could provide enough water to maintain a viable salmon fishery in the spawning area left below the TRD, while satisfying water users in the Central Valley. See James W. Moffett and Stanford H. Smith, Biological Investigations of the Fishery Resources of the Trinity River, California: Special Scientific Report - Fisheries, No. 12., 51-65.

⁵⁹⁴See "Hearings Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Fourth Congress, First Session, on H.R. 4663, To Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Division, Central Valley Project, California, Under Federal Reclamation Laws." April 13, 14, 15, 1955; July 14, 1955. United States Government Printing Office, Washington, D.C., 1955.

⁵⁹⁵*Trinity Journal*, May 5, 1955; May 26, 1955; June 16, 1955. California ended its opposition to federal construction and ownership of the San Luis Canal Unit. The California Senate then unanimously approved the federal construction of the TRD and San Luis project, calling for later consideration of

The state's endorsement cleared the last roadblock for the Trinity River Division.⁵⁹⁶ In June 1955, Congress passed Public Law 84-386 authorizing the Trinity River Division (TRD) of the Central Valley Project, and President Dwight Eisenhower signed the bill shortly thereafter. Under stipulations in the act, a minimum of 120 fps, or that amount needed to preserve fish life, was to be released from the dam to the Trinity River. The bill provided \$1,000,000 to begin surveys and preliminary construction activities at the dam site, which began almost immediately. Additional funding was authorized as the project progressed. The Bureau of Reclamation refined the design of, and built the TRD between 1955 and 1964. The project as eventually built closely resembled the preliminary specifications released by the Bureau in 1952.⁵⁹⁷



integrating the FRP into the San Luis and Trinity River projects. In September, 1957, the State Department of Water Resources assigned water and storage rights it held on the Trinity to the Bureau of Reclamation. See *Trinity Journal*, September 19, 1957.

⁵⁹⁶The State of California continued surveys for its State Water Plan after the approval of the Trinity River Division. In 1956, the state began exploration drilling on potential dam sites at Burnt Ranch and Helena on the Trinity River, and at Hyampom on the South Fork of the Trinity River. *Trinity Journal*, December 6, 1956.

⁵⁹⁷*Trinity Journal*, October 13, 1955; California Water Atlas, 53; Trinity River Flow Evaluation:

The site of the Trinity Dam ca. 1956. The site is under preparation for the start of construction. Trees are being stripped from the reservoir site, and gravel is being removed to expose the bedrock of the Trinity River to secure the foundation of the earthen-fill dam. This dam cut-off 50-75% of salmon spawning habitat in the Trinity. Eastman photo postcard. ca. 1956. Authors' personal collection.

Ironically, on November 10, 1955, several months after the project was approved, the *Trinity Journal* reported that the United States Fish and Wildlife Service and the California Department of Fish and Game announced that in 1956 they would begin detailed studies of the salmon and steelhead of the Trinity River to determine the possible effects of the Trinity Dam on their runs.⁵⁹⁸ In the meantime, legislation authorizing the project stipulated that the Bureau of Reclamation construct fish rearing facilities below Lewiston Diversion Dam for the propagation of fish life.⁵⁹⁹

It was not until 1960, five years after the authorization of the Trinity Division, the California Department of Water Resources, issued a study on the present and future potential development of the Klamath River Basin. Opponents of the Trinity Division had called for such a study throughout the 1950s, but the study was completed far too late to affect the decision to build the project. The report was essentially a survey of regional natural resources, 20th century land use, and the potential future commercial and

Final Report U.S. Fish and Wildlife Service, Washington, D.C., June 1999, 1.

⁵⁹⁸*Trinity Journal*, August 4, 1955; September 1, 1955; November 10, 1955. The report produced was published in 1956. See A Plan for the Protection of Fish and Wildlife Resources Affected by the Trinity River Division, Central Valley Project. California Department of Fish and Game, and the United States Fish and Wildlife Service, Sacramento California, 1956.

⁵⁹⁹During construction of the Trinity Dam a fish weir (trap) and a hatchery were built below the Lewiston Diversion Dam site. This facility was temporary and was used during the construction of both the Trinity and Lewiston Dams. A permanent facility was later built below the Lewiston Dam. See *Trinity Journal*, August 15, 1957; January 21, 1960; July 14, 1960.

industrial development in the Basin. The Klamath Basin River Survey did not address the Trinity River project, or its potential impact upon fish and wildlife. Ironically, however, the report unintentionally demonstrated the potential destruction of anadromous fish habitat posed by dams and other river obstructions. The report states:

Many dams were built in the Klamath River drainage in Trinity and Siskiyou Counties during the past 80 or 90 years for the purpose of diverting water for domestic and mining uses. All of these dams formed partial or complete obstructions to migrating fishes on their spawning runs. Some of them blocked salmon and steelhead from miles of spawning gravels upstream...thus confining the fish to the stream sections below the dams. Over a period of years, sizes of fish runs in these streams where dams formed complete blocks were reduced to numbers consistent with the available spawning area. The California Department of Fish and Game began removing known abandoned dams about 30 years ago. This program has recently been stepped up, and in the past few years 22 dams have been removed in the Klamath River system in Trinity and Siskiyou Counties. These removals, plus two dams in Siskiyou County which recently washed out, have made at least 210 miles of additional spawning gravel available to steelhead and salmon.⁶⁰⁰

600 Klamath River Basin Investigation, Bulletin #83, California Department of Water Resources, Division of Resources Planning, Sacramento, California, 1960, 155.

As the gates of the spillways of the Trinity Dam were being closed, cutting-off an unknown but certainly large percentage of spawning habitat on the main stem of the Trinity River, the State of California was tearing-down low dams hoping to restore spawning habitat in the region. Ironically, while the State was removing antiquated low dams, the federal government was building two permanent high dams.

The Trinity River Division as completed consists of two earthen dams on the Trinity River above Lewiston to impound and divert the river and the upstream tributaries feeding into it. The first, the Trinity Dam, impounds the Trinity River to create Trinity Lake for water storage. The second dam, six miles below the first, is the Lewiston Dam, and is for the purpose of diverting the Trinity to the Sacramento Basin and also regulate the remaining flow allowed to spill into the Trinity River. At the Lewiston Dam water is diverted to a tunnel running easterly under the Trinity Mountains to Clear Creek. From Clear Creek, water flows into another tunnel that drops to the Sacramento Valley where the water is co-mingled with the Sacramento River at the Keswick Dam. The fall in elevation between the Trinity Dam and the Sacramento Valley is used to generate electricity. Power facilities are located at the Trinity Dam and Lewiston Diversion dams, and electricity is also generated at Clear Creek (Tower House Tunnel and Power Plant) and at Keswick Reservoir (Matheson Tunnel and Power Plant).

The Bureau of Reclamation took nine years to build the Trinity River Division of the Central Valley Project, from the start of construction planning in 1955 to official completion in 1964. In October 1961, Secretary of the Interior Stuart Udall dedicated the

Trinity Dam, the world's largest earthen fill structure up to that time.⁶⁰¹ Construction continued on the Lewiston Diversion Dam and the remaining components of the project.⁶⁰² Once the system was complete and integrated into the CVP, the water of the Trinity River became indispensable to the Bureau of Reclamation's mission of created a multi-purpose Central Valley Project to meet all current and potential future water needs in California.⁶⁰³

The Trinity River Division of the Central Valley Project was radically different from previous structures built to manipulate the flow of the Trinity River. The Bureau of Reclamation built it to divert water out of the Trinity River Basin. Because the diversion removed more than eighty percent of the flow of the river at the point of diversion, the project had a negative impact on the anadromous fishery of the Trinity River and its ability to function as a dynamic alluvial stream. Soon after the closure of the diversion gates, the anadromous fishery began a rapid decline from which it has not, and may never recover.⁶⁰⁴ The primary justification for damming and diverting the Trinity River was the perceived need for water in California's Central Valley. Supporters of the Trinity River Division assured opponents of the project that the farms and communities of the Central Valley of California would someday face a critical shortage of water for farming and

⁶⁰¹*Trinity Journal*, October 5, 1961; October 19, 1961.

⁶⁰²The gates on the Trinity Dam were closed in November, 1960. Almost three years were required to fill Trinity Lake, the reservoir created by the dam. *Trinity Journal*, December 1, 1960; April 4, 1963.

⁶⁰³*Trinity Journal*, August 4, 1955; August 18, 1955.

⁶⁰⁴In 1999, a long-term study of the effects of the TRD, and the necessary measures needed to mitigate the dam's impact on the Trinity River was released by the Department of the Interior. See [Trinity](#)

domestic purposes unless the "surplus" or "waste" water of the Trinity River was captured and diverted-apparently anything more than 120fps was surplus. 120fps was deemed sufficient to support fish and wildlife within the Basin, and to meet future domestic, agricultural, and industrial needs. Yet, when the project was under constructed in the late 1950s, there was no shortage of water in the Central Valley. Rather, the Bureau of Reclamation built the project on the assumption of a perceived future demand and "market" for water - a demand created by the Bureau and Central Valley farmers who clamored for the construction of San Luis and Sacramento Canals Units to water the Westlands Water District in the San Joaquin Valley and agricultural lands in the western Sacramento Valley.

The proponents of the Trinity Division urged residents of the counties affected to support the diversion by portraying the project as beneficial to the local economy . The reservoirs created by the projects' two dams, they claimed, would spur the local economy. Project supporters claimed confidently that fishing on the Trinity River, considered by anglers to be among the best salmon and steelhead fishing streams in America, would actually improve because of the cooler temperatures in the Trinity River as a result of releases originating deep in Trinity Lake. Moreover, the increased average summer flows maintained in the river would provide better summer habitat for fish and wildlife. Furthermore, along the entire Trinity River and on the lower Klamath, flood damage would decrease because the ferocious Trinity River, with its rapidly rising waters and unexpected floods, could be controlled by impounding and diverting a large part of the rivers' flow out of the Basin. Commercial navigation, non-existent on the Trinity, and

River Flow Evaluation: Final Report, U.S. Fish and Wildlife Service, Washington, D.C., June 1999.

of only slight importance on the lower Klamath River, would not be harmed by the diversion. Industry would benefit because a large supply of the hydroelectric power could be available for use within the Basin. Finally, water left to the Basin below the diversion would be more than adequate to assure future growth.

The promised benefits of the TRD for the Trinity River Basin were not realized. Damming the river severely disrupted the system that kept the Trinity River a healthy, functioning alluvial stream. A river that possibly could have recovered from human activities that negatively impacted it no longer had enough flow to flush away hydraulic and dredge mining debris, nor the sediments produced by clear-cut logging. Prior to damming, the Trinity River prior to damming swept the river banks of dense vegetation, flushed spawning gravels, and maintained the riffle-pool riverbed configuration needed for salmon propagation was gone. Within fifteen years after the construction of the project the fishery was in danger of complete collapse, and is now artificially sustained. Spawning beds that once existed below the Lewiston Dam became compacted because the water released from the dam is free of sediment and thus is “hungry” water, meaning it has the ability to entrain high loads of sediment. The water picks up the smaller, salmon-friendly gravels and leaves behind large boulders and rocks which are useless for spawning salmon. Low flows result in an increase in water temperature and prompt the growth of algae that sucks oxygen from the water and leads to chemical changes. Because of changes in temperature, oxygen and chemistry, salmon have a difficult time surviving their first few years in the river before running to sea.

Flooding on the Trinity River did not stop, although the severity of floods was reduced. Ironically, the disastrous 1964 floods on the Trinity River struck the same year

the project was completed - the dam was too full to prevent flooding, and too high in the watershed even if it had the capacity to absorb the storm surge. Large-scale industrial growth did not appear with the availability of electrical power. Recreation on the newly created lakes was certainly of some benefit, but it did not become the centerpiece of a strong regional economy. Opponents of the TRD and the Westlands Water District failed to stop water from flowing to the Central Valley.⁶⁰⁵

The needs of the people of the Hoopa Valley Reservation did not play an important role in the planning process for the TRD. After registering concerns in the 1920s, neither Agents at Hoopa Valley, nor their superiors at the BIA and the Department of the Interior expressed serious doubts about the TRD. Tribal opposition was limited and when expressed during the 1950s, came at a time when the Federal Government was contemplating termination of its trust responsibility for Native Americans. The rights of native peoples were seriously threatened during the 1950s, but one can only speculate that the atmosphere in Washington D.C. led Congress to give little weight to the concerns of indigenous peoples. The diversion of the river severely affected the environmental health of the river, and the precipitous drop in the number of salmon had serious religious implications for the Hupa and other indigenous peoples within the region. Salmon runs diminished dramatically, reducing the availability of this ancient food resource.

The diversion of the Trinity River was the result of the intersection of interest groups and the tension between those who supported and opposed the project. The TRD

⁶⁰⁵The most visible opponent of the TRD today is the organization Friends of the Trinity River. This group maintains an internet site with information and links to data on the TRD and advocates restoring the Trinity River to its pre-TRD condition. See www.fotr.org.

was as successful as its proponents hoped, and as disastrous as its opponents predicted. The native peoples were essentially ignored throughout the process, and the opinions of non-Indian Basin residents who opposed the project, although they were allowed to express their reservations, were also ignored when the final decision came down. The officials at the California Department of Wildlife who predicted, only after the project had been authorized, that it would harm the anadromous fishery were also ignored, yet they were correct in their assessment. Thus, the competing interest groups, among them the Bureau of Reclamation, the Army Corps, the State of California and water users such as the Westlands Irrigation District, dictated the future health and well-being of a River Basin and its residents within the context of their own bureaucratic and economic self-interests regardless of the true benefit or costs of the project.

Conclusion

The changes wrought upon the Trinity River Basin, together with the Indian response and participation in the processes involved reveals that change was a result of the dynamic interactions among various interest groups. The competition over the exploitation and use of natural resources changed the Trinity River Basin over time. The impact of these changes on the Basin's inhabitants began when miners entered the Trinity River watershed in the 1840s. The region's indigenous inhabitants previously harvested anadromous fishes from the Basin's rivers and streams for sustenance, and also centered their spiritual world upon the Trinity River and the salmon it provided. The first miners entering the watershed disrupted the flow of the Trinity River and roiled the water with mining debris, causing rapid decline in the number of anadromous fishes available to the Indian peoples dependent upon them for life. The disruption of the salmon runs led to bloody conflict between miners and Indians, and some tribes, particularly the Trinity River Wintu and Chimariko, were decimated and mostly driven away from the Basin. For those Indian peoples who managed to weather the onslaught, the federal government imposed reservations upon them. Local merchants and the State attempted to kill or remove the Indians, and when they failed, demanded that the federal government send the Army to do so. In 1855 U.S. Army and the Office of Indian Affairs established the Klamath Reserve on the lower Klamath River much to the dismay of local non-Indians who insisted that the Indians be removed. On the Trinity River, in 1864, after bloody regional conflict in which the Hupas gave as good as they got, the government acquiesced to the wishes of the Hupa people, and instead of removing them to Round Valley or confining them on Catalina Island, they were allowed to remain in their

homeland, Hoopa Valley. The federal government drew a boundary around the valley and set it aside as a reservation for them. Whites who lived in the valley were paid cash for their improvements and expelled from the new reservation. This was a compromise on the part of the government and Hupa Indians. In return for being allowed to remain in their homes, the Hupas agreed to give up their freedom of movement away from the valley, and take up the plow and become yeoman farmers - a complete shift from their traditional life way. And so began the long process of the federal attempt to impose a top-down program of redirecting the Hupa away from their traditional subsistence practices and away from the Trinity River in order to re-focus them towards to a market-oriented economy based primarily upon agriculture.

In the long run, the efforts of the government to alter the Hupa's relationship with the Trinity River (and by implication, their spiritual relationship with the salmon) were only marginally successful. The Hupa did take up wage-labor and attempted to survive by farming, mining, and logging to supplement their loss of reliable salmon runs, but they did not discontinue their relationship with the Trinity River or abandon all of their religious ceremonies. Instead, they took what they could use from the outsiders and tried to adapt what they already knew to the new reality of life in the Trinity River Basin.

Once the Indian peoples of the Trinity River watershed were confined to reservations, the development of the resources of the Trinity Basin went ahead relatively unimpeded. After the first miners exhausted the easily mined placer gold, their operations gave way to highly-efficient, industrialized hydraulic and dredge mining, which, unlike those mines located in the mountains above the Central Valley, were free from the restrictions imposed by the *Sawyer Decision*, and were not under the regulations

imposed by the California Debris Commission. Industrial mining further deteriorated the health of the rivers and streams of the Trinity River by dumping millions of cubic yards of mining debris causing deposition of sediment, suffocation and destruction of anadromous fish habitat, creating further downward pressure upon the anadromous fish population in the region as a whole. Simultaneously with the rise of industrial mining, commercial salmon canning operations began operating at the mouth of the Klamath River and, using Yurok Indians as laborers (thus providing them with cash), they diminished the runs of salmon up the Klamath and Trinity Rivers so greatly that they caused the failure of the fish hatchery in Hoopa Valley built to employ Hupas who were paid cash to catch fish and strip them of roe and milk.

After the turn of the 20th century, sports fisherman began traveling to northwest coastal California by automobile to fish for salmon at the mouth of the Klamath River. Newly constructed federally and state-funded highways and gravel roads, combined with improved automobile technology, gave rise to a burgeoning tourist industry in northwestern California based upon fishing for salmon and steelhead. The sport fishing industry was centered on the Klamath River and within the Trinity River Basin. The rise of sport fishing spawned the growth of sport fishing organizations and local chambers of commerce who combined forces to fight threats to their recreation and local economies. The organization began putting pressure on the State of California to regulate industrial mining and logging to preserve what was then recognized as one of the most productive and important anadromous fisheries in all of California. The State responded by creating a hydraulic mining “season” to accommodate mining interests, but banned mining during the fall runs of salmon and steelhead. These sportsman organization also turned on the

commercial canneries at the mouth of the Klamath River, and managed to get the State to ban commercial fishing in the 1930s to provide further protection for the anadromous fishery. The Hupa were also criticized for their traditional fishing practices, but they did not cave to the pressure to stop building weirs and using dip nets, but did pledge to ensure that fish made their way upriver past their valley. Nonetheless, competing resource uses meant that efforts to stem the decline of the anadromous fishery would be an uphill battle.

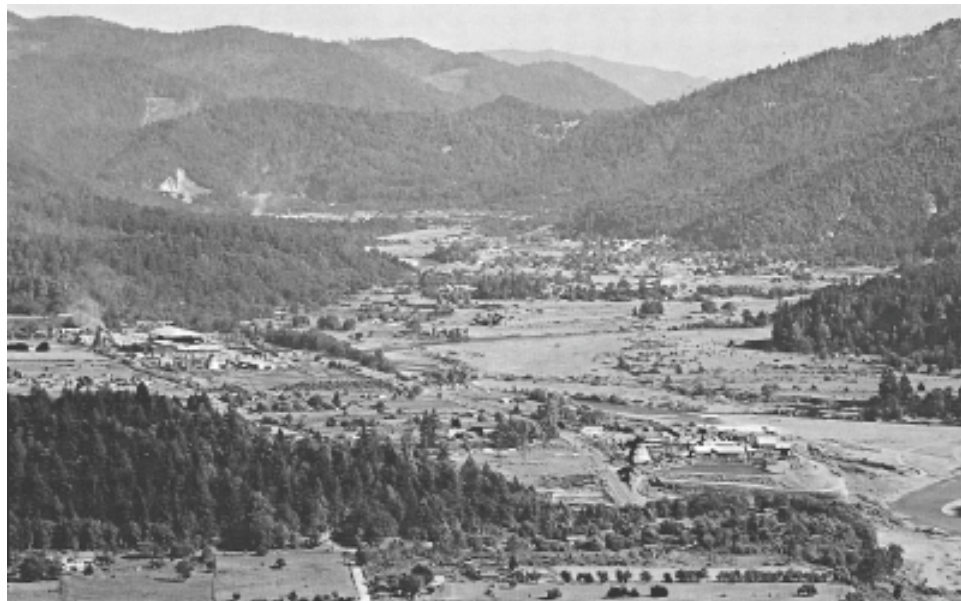
The Hupas themselves attempted to diversify their economic activity in the valley by pursuing gold mining, logging, and irrigation-based farming by tapping seeps emanating from the mountains surrounding them. Because the allotment process dragged on so long, haphazardly and poorly executed, the Hupas resisted investing too much of their own labor and resources onto lands that might be taken away at any moment by a bureaucrat wielding a fountain pen behind a desk in Washington D.C. Thus, their efforts to farm and mine were only half-hearted. The BIA stepped up in the early 20th century to construct an irrigation system for the Hupa that would divert water from the streams leading into the valley rather than the Trinity River. Delays, poor design, and under funding plagued the system, and once complete, it was far from adequate to irrigate all of the valley's arable land, and the repayment on the system was far too expensive for most Hupas to use it. Thus the system languished and eventually fell into dis-use, becoming yet another example of a top-down federal policy failure caused not only by bureaucratic mistake, but by local resistance to take on a debt burden that was too onerous to pay back.

Logging was not a major industry in the Trinity River watershed prior to World

War II and so is not a main focus of this study. Yet the isolation of the Trinity River Basin was broken when the State commenced building roads through the Basin in the 1920s, and continued to improve roads in the watershed using federal highway funds throughout the 1930s and thereafter. Without proper planning for erosion control on the highly unstable granitic soils and steep terrain of the Trinity Basin, logging can cause severe erosion and dramatically raise the sediment load of the streams feeding into the Trinity River and thus further impact the anadromous fish habitat. There was only limited logging in the Basin prior to World War II, and most of that was for local consumption. The Hupas, led by David Risling, began commercial logging on their own initiative in Hoopa Valley, but that operation was mostly for local consumption and only to a limited extent for outside markets. By the 1930s the BIA began to interest themselves in the forests of Hoopa Valley and began to suppress fires (often blamed on unemployed Hupas, yet the fires had a cultural context as well), and to calculate the board-feet available in the valley by timber cruising, scaling, and the compilation of a forestry plan. World War II put the forestry activity in the Valley on hold for the duration of the conflict and only later would timber harvesting on an industrial scale be conducted in Hoopa Valley.

The most important change witnessed within the Trinity River Basin was caused not by in-Basin interests, but rather, by outside interests who desired a resource abundant within that Basin that had assumed tremendous importance outside of the region. With the rise of hydroelectric power generation in the early-1900s, water-power sites on public lands were coveted by private power interests. The federal government, acting through the United States Forest Service, withdrew thousands of acres of potential power sites

from public entry in the Trinity River Basin and elsewhere to prevent a “run” on these potentially valuable sites. Once the Federal Power Commission created a system whereby private companies and individuals could obtain licenses for hydro-power sites, and could file for water rights with state water boards, the Trinity River Basin and other parts of the West were opened to people and companies wishing to develop hydroelectric power sites.



Hoopa Valley within the Hoopa Valley Indian Reservation on the Trinity River ca. early-1960s. Note the lumber milling operations, the meandering Trinity River, farm fields and a landslide far in the background. Industrial lumber operations did not reach the valley until after World War II. After that time, the lumber industry became a major employer of Hupas and other Indian residents of the region. Eastman photo postcard. Authors' personal collection.

During the 1920s, while the Hupa were struggling with the delays and set-backs on the Indian Irrigation Service project, W.H. Sampson filed for water rights on the Trinity River to dam the river for hydroelectric power generation. The application had the support of many Basin residents until the *Trinity Journal* revealed that Sampson proposal actually called for diverting most of the Trinity River out of the Basin through a

tunnel to the Central Valley for use in irrigation agriculture. Sampson failed to meet the conditions imposed upon him by the FPC and lost his right to build the project. While Sampson worked on his project, the USGS, the State of California and the Bureau of Reclamation conducted physical surveys of the Trinity River Basin, its total water budget, and the best water-power sites, and eventually determined that Sampson's proposal, with some modifications, was the most feasible. By the 1930s, the State had given over to the federal government the responsibility for designing, building (and paying for) the Central Valley Project. Once that project was underway, the Bureau began looking at other areas to augment the supply of water for agribusinesses in the Central and San Joaquin valleys. After the end of WWII, the Bureau of Reclamation, supported by Congressman Clair Engle, began pushing for the construction of the Trinity River Division (TRD) of the Central Valley Project. By the mid-1950s, after much debate, inadequate study on the environmental impacts of the diversion, and politics trumping science, Congress approved and funded the project. The gates were closed on the TRD in the early 1960s, and the Trinity River Basin was now inextricably linked to the outside world.

Competing interests determined the path of change within the Trinity River Basin. The region's Indian people experienced tremendous social and cultural disruptions, but adapted old ways to new circumstances. In many ways, the Hupas succeeded (at least to a certain extent) in influencing the outcomes of the changes they faced. Non-Indian peoples also experienced the changes in the Basin. Their lives, too, were transformed by events they helped set in motion. By the 1950 and early 1960s, the Basin was a place where all peoples had settled into their niches, both Indian and non-Indian, and faced the

fact that they were all, in some way, dependent upon the Basin's natural resources for making a living. Finally, most of the flow of the Trinity River itself, the bind that ties the upper and lower Basin residents to one another, had been appropriated by outsiders. The TRD changed the world within the Basin by linking it to the larger California and Western water and electric power network.

The destruction of the Trinity River came about as a result of many events, large and small, obscure and obvious, directed and accidental. The conversion of a once free-flowing river teeming with anadromous fishes to a resource appropriated by various competing interests did not happen overnight, nor did any single interest determine the course of events or their outcome. Over time the interests groups competing within the Basin changed as the resources they coveted either gave out, lost value, gained value, or were placed off limits by the State or federal government. The Trinity River still flows. Although now it is a much diminished stream, it is still a hotly contested resource. The resources of the Trinity River Basin are still subject to the forces of competing interests. The competition today includes a reinvigorated Indian tribe - now another interest group (albeit with deeper historical ties to the resource than any other) wanting acquire enough water from the TRD to ensure the yearly return of the salmon that are central to their culture. Opposed to them are various interests outside the Basin who have come to rely upon Trinity River water provided them by the CVP. As competition continues, a broader lesson can be learned. The current condition of the Trinity River speaks to the clashing ideologies of how to use natural resources, but perhaps more important, the condition we find the Trinity River in today, regardless of planning, or lack thereof, was not wholly predictable. Instead, the Trinity River should stand as an example of best

intentions gone awry. As government and private planners consider additional management schemes for the Trinity Basin, they should be aware that the work of their predecessors was fraught with long term hidden impacts that chart some of the limits of the human capacity to superintend nature.

REFERENCES CONSULTED

Newspapers

Alta California (San Francisco).

Arcata Union (Arcata).

Blue Lake Advocate (Blue Lake).

Business Directory of Humboldt County (Eureka).

Daily Humboldt Standard (Eureka).

Eureka Times Standard (Eureka).

Humboldt Standard (Eureka).

Humboldt Times (Eureka).

Humboldt Times-Standard (Eureka).

Humboldtiana (Eureka).

Mining and Scientific Press (San Francisco).

Oakland Tribune (Oakland).

Sacramento Bee (Sacramento).

Sacramento Missionary (Sacramento).

Sacramento Union (Sacramento).

San Francisco Bulletin (San Francisco).

San Francisco Call (San Francisco).

San Francisco Chronicle (San Francisco).

Searchlight: Northern California Illustrated Mining Edition (Weaverville).

Trinity Journal (Weaverville).

Weekly Humboldt Times (Eureka).

Weekly Trinity Journal (Weaverville).

Western Mining News (San Francisco).

Manuscript Collections

Belcher Abstract and Title Company Records. "Atlas of Humboldt County, California."

Eureka, California, 1922. Trinity County Historical Society, Weaverville, California.

Dulany Family Correspondence. Ca. 1859-1852. Bancroft Library, University of California, Berkeley.

Governor's Papers. California State Archives, Sacramento.

LaGrange Ditch and Hydraulic Mining Company. *By-Laws of the LaGrange Ditch and Hydraulic Mining Company*. Bancroft Library, University of California, Berkeley.

John Martin Papers. Ca. 1852. Data Regarding Trinity County, Founding of Weaverville, Bancroft Library, University of California, Berkeley.

Owen C. Coy Papers, Ca. 1860-1940. California Room, California State Library, Sacramento.

Pierson B. Reading Papers. Ca. 1845. California Room, California State Library, Sacramento.

Susie Baker Fountain Papers. Ca. 1849-1969. Humboldt Room. Humboldt State University, Arcata.

Trinity County Petitions, C-A 318, Bancroft Library, University of California, Berkeley.

William Hammond Hall Papers. California State Archives, Sacramento.

William Spencer Lowden Papers. Trinity County Historical Society, Weaverville, California.

Court Cases

Woodruff v. North Bloomfield Mining Co., 18 F.753 (1884)

People v. Gold Run Ditch and Mining Co., 66 Cal.138 (1884)

United States v. Forty-Eight Pounds of Rising Star Tea., 35 F. 403 (1888)

Westlands Water District v. United States Department of the Interior, Hoopa Valley Tribe, et. al. 376 F.3d 853 (9th Cir. 2004)

Federal Records Collections

Record Group 22. Records of the United States Fish and Wildlife Service.

Record Group 23. Records of the Coast and Geodetic Survey.

Record Group 48. Records of the Secretary of the Interior.

Record Group 57. Records of the United States Geological Survey.

Record Group 75. Records of the Bureau of Indian Affairs.

Record Group 111. General Records of the United States Government.

Record Group 279. Records of the Indian Claims Commission

Congressional Hearings

United States Congress. House. *Hearing before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Third Congress, Second Session, on H.R. 123, an Act to Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Division, Central Valley Project, California, under Federal Reclamation Laws. April 16, 1954, Redding, California.* Serial No. 20. Washington, D.C.: United States Government Printing Office, 1954.

_____. *Hearing before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, United States Senate, Eighty-Fourth Congress, First Session, on H.R. 4633, an Act to Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Division, Central Valley Project, California, under Federal Reclamation Laws. July 14, 1955.* Washington, D.C.: Government Printing Office, 1955.

_____. *Hearing before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, Eighty-Fourth Congress, First Session, on H.R. 4663, an Act to Authorize the Secretary of the Interior to*

Construct, Operate, and Maintain the Trinity River Division, Central Valley Project, California, under Federal Reclamation Laws. April 13, 14, and 15, 1955. Washington, D.C.: United States Government Printing Office, 1955.

_____. *Hearing before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries, Ninety-Ninth Congress, Second Session on H.R. 4712: A Bill to Provide for the Restoration of the Fish and Wildlife in the Klamath and Trinity River Basins, and for Other Purposes. July 16, 1986.* Washington D.C.: Government Printing Office, 1986.

_____. *Fish and Wildlife Miscellaneous Hearings before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries, House of Representatives, Ninety-Eighth Congress, First Session.* Washington D.C.: Government Printing Office, 1983.

_____. *Klamath and Trinity River Basins Hearing before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries, House of Representatives, Ninety-Ninth Congress, Second Session, on H.R. 4712 ... July 16, 1986.* Washington D.C.: Government Printing Office, 1986.

_____. *Klamath and Trinity River Basins Hearing before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on Merchant Marine and Fisheries, House of Representatives, Ninety-Ninth Congress, Second Session, on H.R. 4712 ... July 16, 1986.* Washington D.C.: Government Printing Office, 1986.

_____. *Hoopa-Yurok Settlement Act : Hearing before the Committee on Indian Affairs, United States Senate, One Hundred Seventh Congress, Second Session on Oversight Hearing on the Department of the Interior Secretary's Report on the Hoopa Yurok Settlement Act, August 1, 2002.* Washington D.C.: Government Printing Office, 2003.

Federal and State Government Publications.

Annual Report of the Commissioner of the General Land Office for the Fiscal Year Ended June 30, 1891. Washington, D.C.: Government Printing Office, 1891.

Annual Report of the Commissioner of the General Land Office for the Fiscal Year Ended June 30, 1892. Washington, D.C.: Government Printing Office, July 1, 1892.

Alexander, B. S., George Mendell, and George Davidson. *Engineers and Irrigation: Report of the Board of Commissioners on the Irrigation of the San Joaquin, Tulare, and Sacramento Valleys of the State of California, 1873. Engineer Historical Studies Number 5.* Fort Belvoir, Virginia: Office of History, United States Army Corps of Engineers, 1990.

Averill, Charles A. "Mineral Resources of Humboldt County." *California Journal of Mines and Geology Report* 37, no. (October, 1941): 499-528.

Bearss, Edwin C. *History Resource Study: Hoopa-Yurok Fisheries Suit, Hoopa Valley Indian Reservation, Del Norte and Humboldt Counties, California.* Denver: U.S. National Park Service, Professional Support Division, Denver Service Center, [1981 or 1982].

Bradley, Walter W. "Consolidated Index of Publications of the Division of Mines and Predecessor State Mining Bureau, 1880-1943, Inclusive. Division of Mines Bulletin 131." San Francisco: California, Division of Mines, 1945.

Bryan, L.L. *Summary of Investigations on Trinity River and Tributaries, California.* United States Department of the Interior, United States Geological Survey. Washington D.C.: Government Printing Office. March, 1940

California Department of Fish and Game. *A Plan for the Protection of Fish and Wildlife Resources Affected by the Trinity River Division, Central Valley Project.* California Department of Fish and Game, and the United States Fish and Wildlife Service, Sacramento, California, 1956.

_____. *Annual Report: Trinity River Salmon and Steelhead Hatchery (various dates).* State of California: The Resources Agency, Department of Fish and Game. Region 1, Inland Fisheries.

_____. *Grass Valley Creek Siltation,* California Department of Fish and Game. Region 1, Redding, California, 1963.

_____. *Water Pollution Investigations: The Effect of Mining and Sawmill Wastes on Trinity River (Code No. 52-1-10).* State of California Department of Fish and Game, 1952.

California Department of Public Works. *Views and Recommendations of State of*

California on Proposed Report of the Secretary of the Interior on Trinity River Division, Central Valley Project (Ultimate Plan), California. Department of Public Works. Sacramento, California. April, 1953.

California Department of Water Resources. *Klamath River Basin Investigation*, Bulletin #83. Division of Resources Planning, Sacramento, California, 1960.

_____. *Land and Water Use in Trinity River Hydrographic Unit.* Division of Resources Planning. Sacramento, California, 1964.

_____. *Task Force Findings and Recommendations on Sediment Problems.* Sacramento: California State Printing Office. January, 1970.

_____. *Main Stem Trinity River Watershed Erosion Investigation.* Department of Water Resources: Northern District, March, 1980.

_____. *Trinity River Recreation Access Plan.* Department of Water Resources: Northern District. Red Bluff, 1979.

_____. *South Fork Trinity River Salmonid Enhancement Studies.:* California Department of Water Resources, Northern District, 1982.

California Division of Mines and Geology. *Gold Districts of California.* Bulletin 193. Sacramento: California Divisions of Mines and Geology, 1970.

_____. *Mines and Mineral Resources of Trinity County, California.* County Report No. 4. California Divisions of Mines and Geology: Sacramento, 1965.

California State Lands Commission. *California Rivers: A Public Trust Report.* 2nd. Ed. Sacramento: California State Lands Commission, 1993.

California State Mining Bureau. *Register of Mines and Minerals: County of Trinity, California.* Sacramento: Superintendent of State Printing, 1900.

Cohen, Felix S., and United States. Dept. of the Interior. Office of the Solicitor. *Handbook of Federal Indian Law: With Reference Tables and Index.* Washington D.C.: U.S. Govt. Print. Off., 1942.

- Conners, Pamela A. *Request for Determination of Eligibility for Inclusion on the National Register of Historic Places: Salyer Station*. Eureka, Calif.: U.S. Department of Agriculture, U.S. Forest Service Pacific Southwest Region, Six Rivers National Forest Lower Trinity Ranger District, Trinity County, California, 1994.
- Coots, M. *The Effects of Erosion and Sedimentation on the Fishery of the Grass Valley Creek and the Trinity River, Trinity County, California*. California Department of Fish and Game. Region 1. Redding, California, 1967.
- County Assessors' Reports of County Statistics, 1858, Trinity County*. Governor's Files. Folder #544, California State Archives, Sacramento, California.
- Craig, James L., and U.S. Fish and Wildlife Service. *Annual Report, Klamath River Fisheries Assessment Program Juvenile Salmonid Trapping on the Mainstem Trinity River at Willow Creek and on the Klamath River at Big Bar, 1990*. Arcata, CA: U.S. Fish and Wildlife Service Coastal California Fishery Resource Office, 1992.
- Davidson, George. *Annual Report of the Superintendent of the U.S. Coast Survey, 1855*. Washington, D.C.: Government Printing Office.
- _____. *Discovery of Humboldt Bay, California*. San Francisco: Geographical Society of the Pacific Publications, 1891.
- Desty, Robert, ed. "The Debris Case: Woodruff V. North Bloomfield Gravel Mining Co. And Others. Circuit Court, D. California." *The Federal Reporter. Vol. 16. Cases Argued and Determined in the Circuit and District Courts of the United States*. 16, no. June-July, 1883. (April 9, 1883.): 23-35.
- _____. "Woodruff V. North Bloomfield Gravel Mining Co. And Others. Circuit Court, D. California." *The Federal Reporter. Vol. 18. Cases Argued and Determined in the Circuit and District Courts of the United States*. 18, no. November, 1883 - February, 1884. (January 7, 1884.): pp. 753-813.
- Devlin, Robert T., and Ohleyer, George. "Summary of a Statement Made by Delegates of the California River Convention before the Committee on Rivers and Harbors of the House of Representatives February 9, 1892."

Docker., H.W.A. "Informal Report as to Probable Dredging Value of Gravel in Trinity River on Hoopa Valley Indian Reservation. Humboldt County, California.", 1921.

Draft Trinity River Basin Land Use Report: Regulations, Policies, and Guidelines Affecting Land Uses in the Trinity River Basin.: U.S. Department of the Interior, Bureau of Land Management, Redding District and The Trinity River Basin Fish and Wildlife Task Force, December, 1978.

Dyer, B.W. *Report of B.W. Dyer, District Mining Supervisor, U.S. Geological Survey, on Certain Lands on Hoopa Valley Indian Reservation in Connection with Gold Placer Lease Application.* Examination Made November 13 - 17, 1939. Salt Lake City, Utah.

Fowler, Frederick Hall. *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada.* Washington, D.C.: Government Printing Office, 1923.

Garcia, Jesse. "Location and Character of Indian Lands in California Prepared by California Unit, Land Use Planning Section, Land Utilization Division, Resettlement Administration." *University of California Publications in American Archaeology and Ethnology.* Berkeley: University of California, 1937.

Gilbert, Grove Karl. *Hydraulic-Mining Debris in the Sierra Nevada,* Professional Paper #105, United States Geological Survey. Washington, D.C.: United States Government Printing Office, 1917.

Granville, John J. *Resources: Hoopa Valley Reservation, California.* Los Angeles, California: John J. Granville, Superintendent of Irrigation.

Hagwood, Joseph Jeremiah, Jr. *Engineers at the Golden Gate: A History of the San Francisco District, U.S. Army Corps of Engineers, 1866-1980.* San Francisco: U.S. Army Corps of Engineers, San Francisco District, 1980.

_____. *The California Debris Commission: A History.* Sacramento District, United States Army Corps of Engineers, 1981.

Hall, William Hammond. *Report of the State Engineer to the Legislature of California. 23rd Session.* Sacramento, 1880.

Handy, John and Millard Coots, "The Removal of Abandoned Dams in the Upper Klamath River Drainage," *California Fish and Game*. 39:3 (July, 1953).

Heffner, Kathy. *Ethnographic Study of the Trinity Summit, Humboldt County, California*. Eureka, Calif: Six Rivers National Forest, 1983.

Henry, D.C. et. al. *Report to the Federal Power Commission on the Uses of the Trinity River, California*. Board of Engineers, Federal Power Commission, San Francisco, February 18, 1924.

Hildebrandt, W.R. and J.F. Hayes. *Archaeological Investigations on Pilot Ridge, Six Rivers National Forest*.: Prepared for the United State Department of Agriculture, Six Rivers National Forest, Eureka, California, 1983.

Hodge, Frederick Webb. *Handbook of American Indians North of Mexico*. Washington D.C.: Government Printing Office, 1907.

Holt, L. M. "Department of the Interior, United States Indian Irrigation Service, District No. 1, Annual Report, 1923."

Hoopes, Gerald. *The Commercial Fishing Industry in Humboldt County*. Eureka: Western Interstate Commission for Higher Education. Economic Internship Program, 1969.

Hostler, Patricia, and Hostler, Byron.. *History of the Hoopa Tribe*. Hoopa: Hoopa Valley Business Council, 1967.

Humboldt County Assessor's Report, 1857. Governor's Files. California State Archives, Sacramento, California.

Humboldt County Board of Supervisors. *Humboldt County Souvenir: Being a Frank, Fair and Accurate Exposition, Pictorially and Otherwise of the Resources, Industries, and Possibilities of This Magnificent Section of California*. 2nd ed.: Eureka: The Times Publishing Co., [c. 1904].

Humboldt County Chamber of Commerce. "Humboldt County, California: A Pamphlet Descriptive of Its Climate, Resources, and Advantages." Commissioners of

- Humboldt County and the Chamber of Commerce of the City of Eureka, 1887.
- Huntsinger, Lynn et. al., *A Yurok Forest History*. United States Department of the Interior, Bureau of Indian Affairs, Sacramento, California, 1994.
- Irvine, Lehigh Hadley. *What Humboldt Offers You.*: Eureka: Humboldt County Chamber of Commerce, 1913.
- Joint Committee on Rivers and Flood Control, "Proposed Klamath and Trinity Diversions and Other Projects in the Central Valley." Report to the California Legislature, 56th Session, September, 1945.
- Johnson, Arthur H. *The Origin and Distribution of Clay-Sized Particles in the Trinity River Basin, California*. Arcata: Humboldt State University, Department of Geology, 1973.
- Jones, Benjamin E., and Helland, Randolph O. "Preliminary Index to River Surveys Made by the U.S. Geological Survey and Other Agencies." Water Supply Paper #558. Washington, D.C.: U.S. Geological Survey, 1926.
- Kahrl, William L., ed., ed. *The California Water Atlas*. Sacramento: State of California, 1979.
- Klamath County Assessor's Report, 1857*. Governor's Files. California State Archives, Sacramento, California.
- Kenny, Robert M. *History and Proposed Settlement, Claims of California Indians*. California Attorney General's Office, 1944.
- Ketter, Thomas. *Environmental and Cultural Ecology of the North Fork of the Eel River Basin, California*. Eureka: Six Rivers National Forest, 1995.
- King, Thomas Butler. "T. Butler King's Report on California." U.S. Serial Set 31st Congress, 1st session, 1849-1850, v.577 House Document no.59.
- Kluegrl., H.A. "Notice of Application to Appropriate Water." *Application Numbers 2945 and 3010*. California Department of Water Resources Library, Sacramento.

- Kramer., E.W. "Report to the Federal Power Commission on the Uses of the Trinity River, California." United States Geological Survey. Washington, D.C.: [typescript], February 18, 1924.
- Limerinos, J. T. "Time-of-Travel Study of Trinity River, California." Menlo Park, Calif: U.S. Geological Survey, 1967.
- Margold, Nathan R. "Right of Hoopa Valley Indians to Fish in Klamath River without California States Interference." *Opinions of the Solicitor* (March 13, 1940): pp.945-948.
- Mendell, G. H. "Annual Report Upon the Improvement of Rivers and Harbors in California, Being Appendix H of the Annual Report of the Chief of Engineers for 1878." Washington D.C.: Government Printing Office, 1878.
- _____. "Mining Debris in the Sacramento River." H. Ex. Doc. #69. 46th Cong. 2nd Sess.
- _____. "Report on a Project to Protect the Navigable Waters of California from the Effects of Hydraulic Mining." H. Ex. Doc. #98. 47th Cong. 1st Sess.
- Moffett, James W. and Smith, Stanford H. *Biological Investigations of the Fishery Resources of Trinity River, California. Special Scientific Report: Fisheries, No. 12.* Washington D.C.: United States Fish and Wildlife Service., 1950.
- Needham, P. R. "Report on the Klamath-Trinity River Fact Finding Committee." n.p.: California State Chamber of Commerce, 1936.
- Norris, Joe H. "General Investigation of Conditions at the Hoopa Valley Indian Agency, Reservation, School and the Lands under the Supervision of the Superintendent, Located at Hoopa, California." Washington, D.C., September 27, 1910.
- Orton, Richard, ed., ed. *Records of California Men in the War of the Rebellion: 1861-1867.* Sacramento: State Printing Office, 1890.
- Poole, J. L. "Water Resource Reconnaissance of Hoopa Valley, Humboldt County, California." U.S. Bureau of Indian Affairs, 1961.

- Radtke, Leonard B. "The Annual Forestry Report of the Hoopa Valley Indian Reservation Forest for the Fiscal Year 1929." Bureau of Indian Affairs. Washington D.C.: Typescript. 1929.
- Reber, Bruce. *The United States Army and the Indian Wars in the Trans-Mississippi West, 1860-1898*. Carlisle Barracks, PA.: U.S. Army Military History Institute, 1978.
- Reed, C. F., C.E. Grunsky, and J.J. Crawford. *Report of the Examining Commission on Rivers and Harbors to the Governor of California*. Sacramento: State Printing Office, 1890.
- Report of the 1935 California Assembly Interim Committee on the Klamath River: Pursuant to Assembly Resolution Adopted May 25, 1935 Submitted to the Assembly March 19, 1937*. Sacramento: California State Printing Office, 1937.
- "Report to the California Legislature, Fifty-Sixth Session: Proposed Klamath and Trinity River Diversions and Other Projects in the Central Valley." *California Fish and Game* (September, 1945).
- Roberts, W.T. Roberts, et. al. *Indian Land and Forest Resources: An Issue of Trust: A Forest History of Hoopa Valley Indian Reservation of Northwestern California*. United States Department of the Interior, Bureau of Indian Affairs, Sacramento, California, 1983.
- Royce, Charles C., comp. *Indian Land Cessions in the United States*. Washington, D.C.: Government Printing Office, 1900.
- Savage, Christine A. *Six Rivers National Forest: A Contextual Resources Chronology of Events on or near Forest Lands*. Eureka, CA: Six Rivers National Forest, 1991.
- Schmeckebier, Lawrence F. *The Office of Indians Affairs: Its History, Activity and Organization*. Service Monographs of the United States Government, No. 48. 1927. Reprint. New York: AMS Press, 1972.
- Shaw, Paul A., and John A. Maga. "The Effect of Mining Silt on Yield of Fry from Salmon Spawning Beds." *California Fish and Game* 9, no. 1 (1943): 29-41.

Six Rivers National Forest. *Six Rivers National Forest: A Contextual Cultural Resources Chronology of Events on or Near Forest Lands*. Eureka, CA.: United States Department of Agriculture, United States Forest Service, January 1, 1991.

_____. *Six Rivers National Forest Draft Land Use and Resource Management Plan, 1986-1995*.: United State Department of Agriculture, Forest Service, Southwest Pacific Region. Eureka: Six Rivers National Forest, 1986.

Smith., James W. Moffett and Stanford H. “Biological Investigations of the Fishery Resources of Trinity River, California.” Special Scientific Report - Fisheries No. 12. (February, 1950.).

Smithsonian Institution. “Indians of the Hoopa Valley.” *Annual Report of the Board of Regents of the Smithsonian Institution, 1889*. Washington D.C.: Government Printing Office, 1890.

Survey, United States Geological. *Reports for California by the U.S. Geological Survey, Water Resources Division*. Sacramento, 1989.

Trinity Basin Fish and Wildlife Task Force *.Trinity River Basin Fish and Wildlife Management Program*. Trinity Basin Fish and Wildlife Task Force, 1981.

Tyler, Lyman, S. *A History of Indian Policy* Bureau of Indian Affairs: Government Printing Office, 1973.

United States. Bureau of Reclamation. *Trinity River Division Features of the Central Valley Project, California* Technical Record of Design and Construction. Denver,, 1965.

_____. *Turbine Performance Test, Spring Creek Power plant Unit No. 2, Trinity River Division, Central Valley Project : Flow Measurement by the Salt Velocity Method*. Denver, CO,1983.

United States Department of the Interior, Bureau of Indian Affairs, In cooperation with the Fish and Wildlife Service and Water and Power Resources Services. *Environmental Impact Statement on the Management of River Flows to Mitigate the Loss of the Anadromous Fishery of the Trinity River, California*.: U.S. Department of the Interior, Bureau of Indian Affairs, 1980.

United States Fish and Wildlife Service. *Natural Resources of Northwestern California: Preliminary Report, 1956*, United States Department of the Interior, Pacific Southwest Field Committee. Washington D.C.: Government Printing Office, 1956.

_____. *Natural Resources of Northwestern California: A Preliminary Survey of Fish and Wildlife Resources, Report Appendix No. 7*. United States Department of the Interior, Pacific Southwest Field Committee. Washington D.C.: Government Printing Office, 1960.

_____. *Environmental Impact Statement on the Management of River Flows to Mitigate the Loss of the Anadromous Fishery of the Trinity River, California*. United States Department of the Interior, Fish and Wildlife Service, November, 1980.

_____. *Trinity River Flow Evaluation : Final Report : A Report to the Secretary, U.S. Department of the Interior*. Arcata, CA. USFWS., 1999.

United States Congress. House. "Reservation of Power and Reservoir Sites on Indian Reservations." H. Doc. 198. 59th Cong. 2nd. Sess.

_____. Senate. "Land for Electro-Power Plants in California Forest Reserves." S. Rpt. 1125 61st Cong. 3rd Sess.

_____. House. "Withdrawal of Power and Reservoir Sites on Indian Land." H. Doc. 717 61st Cong. 2nd Sess.

_____. Senate. "Indian Allotments on Withdrawn Power and Reservoir Sites." S. Rpt. 29 68th Cong. 1st Sess.

_____. House. "Survey Report on the Trinity River Watershed." H. Doc. 708 77th Cong. 2nd Sess.

_____. Senate. "Survey and Sale of the Klamath Indian Reservation, California." S. Ex. Doc. 140. 50th Cong. 2nd Sess.

_____. House. "Mining Debris, California" H. Ex. Doc. 267. 51st Cong. 2nd Sess.

_____. House. "Report of the Board of Engineers on Mining Debris Question in State of California." H. Ex. Doc 267. 51st Cong. 2nd Sess.

_____. House. "Trinity River Division, Central Valley Project (Ultimate Plan) California." H. Doc. 53. 83rd Cong. 1st Sess.

_____. House. "Trinity River Fish Habitat - California: A Report to Accompany H.R. 507." Report #96-893. 96th Cong., 2nd Sess.

_____. House. "Report on the Klamath River, Oregon and California." H. Doc. 181. 73rd Cong. 2nd Sess.

_____. Senate. "Destruction of Forests of the United States." S. Misc. Doc. 51. 55th Cong. 1st Sess.

_____. House. "Trinity River Division, Central Valley Project, (Ultimate Plan) California." H. Doc. 53. 83rd Cong. 1st Sess.

_____. "Views and Recommendations of the State of California on the Proposed Report of the Secretary of the Interior on the Trinity River Division, Central Valley Project (Ultimate Plan)." H. Doc 147. 83rd Cong. 1st Sess.

_____. Senate. "Proceedings Concerning a Bill (S.332) to Preserve Peace with the Indian Tribes in California by Extinguishing Their Territorial Claims in the Gold-Mine Districts." 31st Cong. 2nd Sess. V.548, Senate Journal, Sept. 11 - Sept. 28, 1850.

_____. House. "An Act to Authorize Mining for Metalliferous Minerals on Indian Reservations." H. Report. 730. 65th Cong. 2nd Sess.

_____. House. "An Act Authorizing the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Division, Central Valley Project, California, under Federal Reclamation Laws." H. Ex. Report 1154. 84th Cong. 1st Sess.

_____. Senate. "An Act Authorizing the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Division, Central Valley Project,

California, under Federal Reclamation Laws.” S. Ex. Report 602. 84th Cong. 1st Sess.

_____. House. “Letter from the Secretary of the Interior Transmitting a Copy of a Communication from the Commissioner of Indian Affairs, with a Draft of a Bill for the Construction of a Wagon Road on the Hoopa Valley Indian Reservation.” H. Ex. Doc. 41. 53rd Cong. 2nd Sess.

_____. House. Committee on Indian Affairs. “Klamath River Reservation.” H. Rep. 1176. 51st Cong. 1st Sess.

_____. House. Committee on Resources. “Trinity River Basin Fish and Wildlife Management Re-authorization Act of 1995 Report (to Accompany H.R. 2243) (Including Cost Estimate of the Congressional Budget Office).” 104th Cong. 1st Sess.

_____. Senate. Committee on Environment and Public Works. “Trinity River Basin Fish and Wildlife Management Re-authorization Act of 1995 Report (to Accompany H.R. 2243).” 104th Cong. 2nd Sess.

VIN Environmental Sciences. *Fish and Wildlife Management Options, Trinity River Basin, Northwestern California: Final Report.*: U.S. Bureau of Reclamation Mid-Pacific Regional Office.

Waddell, Thomas B. Assistant State Engineer, Division of Water Resources. “The Trinity River Division Project: A Statement Presented to the Assembly, California Legislature.” April 28, 1955. Typescript on file at California State Library, Government Documents, Sacramento, California.

Williams, Garnett P., and M. Gordon Wolman. *Downstream Effects of Dams on Alluvial Rivers*. Washington, D.C.: United States Geological Survey, Government Printing Office., 1984, United States Geological Survey Professional Paper #1286.

Secondary Sources

Adams, John W. “Recent Ethnology of the Northwest Coast.” *Annual Review of*

Anthropology. 10(1981), 361-392.

Anderson, George. "The Hoopa Valley Indian Reservation in Northern California: A Study of Its Origin." M.A. Thesis. Department of History. University of California, Berkeley., 1955.

_____. *Treaty Making and Treaty Rejection by the Federal Government in California, 1850-1851*. Socorro, N.M.: Ballena Press, 1978.

Andre, Alexander. *A Frenchman at the California Trinity River Mines in 1849*. New York: Westerners Brand Book, New York Posse, 1956.

Arnold, Mary Ellicott, and Mabel Reed, *In the Land of the Grasshopper's Song: A Story of Two Girls in Indian Country in 1908-09*. New York: Vantage Press, 1957.

Ayres, William. "Trip Along the Klamath and Salmon Rivers." *Western Watchman* March 5, 1897.

Bancroft, Hubert Howe. *History of California*. 7 vols. San Francisco: The History Company, 1886-1890.

Baumhoff, Martin A. "Ecological Determinants of Aboriginal California Populations." *Publications in American Archaeology and Ethnology* vol. 49, no. 2 (1963).

Beals, Ralph L., and Hester, James A., Jr., ed. *Indian Land Use and Occupancy in California*. 3 Vols. New York: Clearwater, 1974.

Bean, Lowell J. and Blackburn, Thomas C., eds. *Native Californians: A Theoretical Retrospective*. Ramona, Calif.: Ballena Pres, 1976.

_____, and Vane, Sylvia B., comps., ed. *California Indians: A Guide to Manuscripts, Artifacts, Documents, Serials, Music and Illustrations*. Ramona, Calif.: Ballena Press, 1990.

Bell, Horace. "Tales of the Trinity." Weaverville: Trinity County Historical Society,, 1983.

Berman, Joan, ed. *Ethnography and Folklore of the Indians of Northwestern California: A Literature Review and Annotated Bibliography*. Salinas, Calif.: Coyote Press, 1986.

Bledsoe, A. J. *History of Del Norte County, California, with a Business Directory and Traveler's Guide*. Eureka: Humboldt Times Print: Wyman & Co., 1881.

_____. *Indian Wars of the Northwest: A California Sketch*. San Francisco: Bacon & Company, Book & Job Printers, 1885.

Bleyhl, Norris A., comp., ed. *Indian-White Relationships in Northern California: 1849-1920 in the Congressional Set of U.S. Public Documents*. Chico: Northeastern California Regional Programs, California State University, 1978.

_____, ed. *Newspaper References Concerning Indians and Indian-White Relationships in Northeastern California Chiefly between 1850 and 1920*. Chico: Northeastern California Regional Programs, California State University, 1979.

Boggs, Mae Helen Bacon. *My Playhouse Was a Concord Coach: An Anthology of News Paper Clippings and Documents Relating to Those Who Made California History During the Years 1822-1888*. Oakland: Howell-North, 1942.

Bowie, J., Jr. *A Practical Treatise on Hydraulic Mining in California, with Description of the Use and Construction of Ditches, Flumes, Wrought-Iron Pipes, and Dams; Flow of Water on Heavy Grades, and Its Applicability, under High Pressure, to Mining*. New York: D. Van Nostrand, Publisher, 1885.

Brooks, George R., ed., ed. *The Southwest Expedition of Jedediah S. Smith: His Personal Account of the Journey to California, 1826-1827*. Glendale, Calif.: Arthur H. Clark Co., 1977.

Browne, J. Ross. *The Coast Rangers.*, Richard H. Dillon, ed. Balboa Island: Paisano Press, 1959.

Bu Bois, Cora Alice. "The 1870 Ghost Dance." *Anthropological Records* 3:1 (1939).

Buck, Franklin A. *A Yankee Trader in the Gold Rush: The Letters of Franklin A. Buck*. Katherine A. White ed. New York: Houghton Mifflin Company, 1930.

Buckley, Thomas. "Menstruation and the Power of Yurok Women: Methods in Cultural Reconstruction." *American Ethnologist* Vol 9, (February 1982), 47-60.

_____. "World Renewal." In *Parabola*, Vol. 13 (1988), 82-91.

Bullough, William J. "Entrepreneurs and Urbanism on the California Mining Frontier, Frederick Walter and Weaverville, 1852-1868." *California History* LXX, no. 2 (Summer 1991).

Bunske, Edmund Valdemars. *The Humboldt Bay Region: A Study of a Pioneer Transportation*. University of California, Berkeley, 1966.

Burton, Lloyd, *American Indian Water Rights and the Limits of the Law*. Lawrence: University of Kansas, 1991.

Bushnell, John H. "Hupa Reaction to the Trinity River Floods: Post-Hoc Recourse to Aboriginal Belief." *Anthropological Quarterly*. 42 (October 1969).

Carlson, Leonard. *Indians, Bureaucrats, and Land: The Dawes Act and the Decline of Indian Farming*. Westport: Greenwood Press, 1981.

Carr, John. *Pioneer Days in California: Historical and Personal Sketches*. San Francisco Bulletin. Eureka: Times Publishing Co., 1891.

_____. A Vulcan among the Argonauts . . . Memoirs of John Carr, Blacksmith. Robin. Lampson, ed. San Francisco: George Fields, 1936.

Carranco, Lynwood, and Beard, Estle. *Genocide and Vendetta: The Round Valley Wars of Northern California*. Norman: University of Oklahoma Press, 1981.

_____. *Redwood Lumber Industry*. San Marino, Calif.: Golden West Books, 1982.

_____. and John T. Labb, *Logging in the Redwoods*. Caldwell, Idaho: Caxton Printers, 1975.

_____. and Henry L. Sorensen, *Steam in the Redwoods*. Caldwell, Idaho: Caxton Printers, 1988.

Caughey, John Walton. *Gold Is the Cornerstone*. Berkeley,: Univ. of Calif. Press, 1948.

Chase, J. Smeaton. *California Coast Trails: A Horseback Ride from Mexico to Oregon*. Boston: Houghton Mifflin, 1913.

Cook, Sherburne Friend. "The Aboriginal Population of the North Coast of California". *Anthropological Records*, vol 16, no. 3 (1956).

_____. *The Conflict between the California Indian and White Civilization*. Berkeley: University of California Press, 1976.

_____. *The Population of the California Indians, 1769-1970*. Berkeley: University of California Press, 1976.

Costa, John E., et. al. *Natural and Anthropogenic Influences in Fluvial Geomorphology : the Wolman Volume*. Washington, D.C.: American Geophysical Union, 1995.

Cox, Isaac. *The Annals of Trinity County, Containing a History of the Discovery, Settlement, and Progress, Together with a Description of the Resources and Present Condition: Also, Short Biographical Sketches of its Most Prominent Citizens*. San Francisco: Commercial Book and Job Stream Publishing Establishment, 1858.

Cox, Thomas R. *Mills and Markets: A History of the Pacific Coast Lumber Industry to 1900*. Seattle: University of Washington Press, 1974.

Coy, Owen C. *The Humboldt Bay Region, 1850-1875: A Study in the American Colonization of California*. Los Angeles: California State Historical Association, 1929.

_____. *In the Diggings in Forty-Nine*. Los Angeles: California State Historical Association, 1948.

Cronise, Titus Fey. *The Natural Wealth of California*. San Francisco: H.H. Bancroft and

Company, 1868.

Cronon, William. *Changes in the Land : Indians, Colonists, and the Ecology of New England*. 1st ed. New York: Hill and Wang, 1983.

Crosby, Alfred W. *Ecological Imperialism : The Biological Expansion of Europe, 900-1900* Studies in Environment and History. New York: Cambridge University Press, 1986.

Dale, Harrison Clifford, ed. *The Ashley-Smith Explorations and the Discovery of a Central Route to the Pacific, 1822-1829*. Cleveland: Arthur H. Clark Company, 1918.

Dana, Julian. *The Sacramento, River of Gold*. The Rivers of America Series. New York: Farrar & Rinehart, 1939.

Dana, Samuel Trask, and Sally K. Fairfax. *Forest and Range Policy, Its Development in the United States*. 2d ed. New York: McGraw-Hill, 1980.

Davis, James T. "Trade Routes and Economic Exchange among the Indians of California." *Aboriginal California: Three Studies in Culture History*. Report #54 of the University of California Archaeological Survey. Berkeley: University of California, 1963.

Davis, Lee. "On This Earth: Hupa Land Domains, Images and Ecology on 'Deddeh Ninnisan.'" Ph.D. Dissertation. Department of Anthropology. Berkeley: University of California, 1988.

_____. "Tracking Jedediah Smith through Hupa Territory," *American Indian Quarterly* 13 (Fall 1989):369-89.

Dillion, Richard. *Siskiyou Trail: The Hudson's Bay Company Route to California*. New York: McGraw-Hill Book Co., 1975.

Deloria, Vine. Jr., *American Indian Policy in the Twentieth Century*. 1st ed. Norman: University of Oklahoma Press, 1985.

- _____. *The Indian Reorganization Act : Congresses and Bills*. Norman Okla.: University of Oklahoma Press, 2002.
- _____. A Chronological List of Treaties and Agreements Made by Indian Tribes with the United States. Washington, D.C.: The Institute, 1973.
- _____, and Raymond J. DeMallie, *Documents of American Indian Diplomacy Treaties, Agreements, and Conventions, 1775-1979* 2 vols. Norman: University of Oklahoma Press, 1999.
- De Massey, Ernest. *A Frenchman in the Gold Rush: The Journal of Ernest De Massey, Argonaut of 1849*. Trans. by Marguerite Eyer. San Francisco: California Historical Society, 1927.
- Docker., H.W.A. "Informal Report as to Probable Dredging Value of Gravel in Trinity River on Hoopa Valley Indian Reservation. Humboldt County, California.", n.p. 1921.
- Dodds, Gordon B., "The Stream-Flow Controversy: A Conservation Turning Point." *The Journal of American History*. 56:1 (Jan., 1969), 59-69.
- Doolittle, Shirley. "The Hoopa Indians." *Humboldtiana*, no. 2 (1963): 35-36.
- Douglas, W. T. "Life among the Hupa Indians." *Sacramento Missionary*, June 1903, 19-24.
- "Dragline Dredges of Trinity County-Weaverville Area." Trinity County Historical Society Museum, Weaverville California. n.d. Document File: "Mining," Document #128.
- Driver, Harold Edson. "The Indians of Northwest California." *Anthropological Records* vol. 1, no. 6 (1938).
- _____. *Indians of North America*. 2nd Rev. Ed. Chicago: University of Chicago Press, 1969.
- Dunn, Christopher Chase, and Kelly M. Mann. *The Wintu and Their Neighbors: A Very*

- Small World-System in Northern California*. Tucson: University of Arizona Press, 1998.
- E., Jones. T. *Report on the Red Hill Hydraulic Gold Mines, Junction City Mining District, Trinity County, California*. Boston: A. Mudge and Sons, 1882.
- Eddy, J. M. *In the Redwood's Realm: Bi-Ways of Wild Nature and Highways of Industry*. San Francisco: Printed by D. S. Stanley for the Humboldt County Chamber of Commerce, 1893.
- Egan-McKenna, Virginia, "Persistence with Change: The Significance of Fishing to the Indians of the Hoopa Valley Reservation in Northwestern California." Master's Thesis: University of Colorado, Department of Anthropology, 1983.
- Ellison, William H. "Federal Indian Policy in California, 1846-1860." Master's Thesis. University of California, Berkeley, 1913.
- Erikson, Erik Homburger. "Observations on the Yurok: Childhood and World Image." *University of California Publications in American Archaeology and Ethnology* 35, no. 10 (1943): 257-301.
- Executive Orders Relating to Indian Reservations: Volume 1, May 14, 1855 to July 1, 1912* (Wilmington, DE: Scholarly Resources, 1975).
- Fixico, Donald L. *Termination and Relocation: Federal Indian Policy, 1945-1960*. Albuquerque: University of New Mexico Press, 1986.
- Forbes, Jack D. *Native Americans of California and Nevada: A Handbook*. 3rd ed. Healdsburg, Calif.: Naturegraph, 1982.
- Fradkin, Philip L. *A River No More : The Colorado River and the West*. Berkeley: University of California Press, 1996.
- Frazer, Robert W. *Forts of the West: Military Forts and Presidios and Posts Commonly Called Forts West of the Mississippi River to 1898*. Norman: University of Oklahoma Press, 1965.

- Gardiner, Howard C. *In Pursuit of the Golden Dream: Reminiscences of San Francisco and the Northern and Southern Mines, 1849-1857*. Dale Morgan, ed. Stoughton, Mass.: Western Hemisphere, Inc., 1970.
- Genzoli, Andrew M. *Humboldt County's Century: A Chronology of Discovery, Exploration and Settlement*. Eureka: Humboldt County Chamber of Commerce, 1953.
- Genzoli, Andrew M., and Martin, Wallace E. *Redwood Frontier: Tales of the Conquest of America's Great Forest Land, Humboldt, Del Norte, Trinity, Mendocino*. Eureka: Schooner Features, 1961.
- Gibbs, George. "Journal of the Expedition of Colonel Redick Mckee, United States Indian Agent, through Northwestern California. Performed in the Summer and Fall of 1851." *Historical and Statistical Information Respecting the History, Condition and Prospects of the Indian Tribes of the United States.*, ed. Henry Rowe Schoolcraft, , 3:99-177, 634. Philadelphia: Lippincott, 1853.
- Gillogly, M. Lee. "Humboldt Is My Country." *Humboldt County Historical Society Newsletter* no. 8, (July,1960): 3-4.
- Goddard, Pliny Earle, "Life and Culture of the Hupa." *University of California Publications in American Archeology and Ethnology* vol. 1, no. 1 (1903): 1-88.
- _____. "Hupa Texts." *University of California Publications in American Archaeology and Ethnology* vol. 1, no. 2. (1904).
- Goldschmidt, Walter Rochs. "The Hupa White Deerskin Dance." *University of California Publications in American Archaeology and Ethnology* vol. 35, no. 8 (1940).
- Gontz, Theodore. "Indians of the Hupa Reservation." *Overland*. January (1901): 630-37.
- Gould, Richard A. "Seagoing Canoes among the Indians of Northwestern California." *Ethnohistory* 15 (1968): 9-42.
- _____. "The Indians of Northwestern California." *Masterkey* 59 (1985): 12-21.

- Gregg, Josiah. *Commerce of the Prairies: Or the Journal of a Santa Fe Trader during Eight Expeditions across the Western Prairies* 2 vols. (New York, 1844); rpt. ed., Max Moorhead, ed., Norman: University of Oklahoma Press, 1954.
- Greenland, Powell. *Hydraulic Mining in California : A Tarnished Legacy*. Spokane, Wash.: Arthur H. Clark Co., 2001.
- Gudde, Erwin G. *California Place Names: The Origin and Etymology of Current Geographical Names*. 3rd ed. Berkeley: University of California Press, 1969.
- _____. *California Gold Camps: A Geographical and Historical Dictionary of Camps, Towns, and Localities Where Gold Was Found and Mined, Wayside Stations and Trading Centers*. Berkeley: University of California Press, 1975.
- Hagood, Jean W. "Getting from Here to There, No Easy Task in the Early Transport Days." *The Humboldt Historian* 41, no. 4 (July/Aug, 1993): 21-25.
- Hamm, Lillie E. comp. *History and Business Directory of Humboldt County, Descriptive of the Natural Resources, Delightful Climate, Picturesque Scenery, Beautiful Homes*. Eureka: Daily Humboldt Standard, 1890.
- Harris, Richard R., Greg Blomstrom, and Gary Nakamura. "Tribal Self-Governance and Forest Management at the Hoopa Valley Indian Reservation, Humboldt County, California." *American Indian and Culture Research Journal*. 19:1 (1995), 1-38.
- Hawley, A. T. *Humboldt County, California, Its Scenery, Climate, Resources, and Advantages*. Eureka: Daily and Weekly Humboldt Times, 1879.
- Hays, Samuel P., *Conservation and the Gospel of Efficiency the Progressive Conservation Movement, 1890-1920*. Pittsburgh, Pa.: University of Pittsburgh Press, 1999.
- Heizer, Robert F. ed. *They Were Only Diggers: A Collection of Articles from California Newspapers, 1851-1866, on Indian and White Relations*. Ramona, CA.: Ballena Press, 1974.
- _____. ed. *Handbook of North American Indians: Volume 8, California*. William C. Sturtevant. gen. ed. Washington D.C.: Smithsonian Institution, 1978.

- _____. and M.A. Whipple. Comps. *The Indians of California: A Source Book*. 2nd Rev. Ed. Berkeley: University of California Press, 1971.
- _____, Nissen, Karen M., and Castillo, Edward D., comps., ed. *California Indian History: A Classified and Annotated Guide to Source Materials*. Ramona, CA.: Ballena Press, 1975.
- _____, ed. *The Indians of California: A Critical Bibliography*. Chicago: Newberry Center for the History of the American Indian, 1976.
- _____, ed. *A Bibliography of California Indians: Archaeology, Ethnology, Indian History*. New York: Garland, 1977.
- _____. *The California Indians Vs. The United States of America (Hr 4497): Evidence Offered in Support of Occupancy, Possession, and Use of Land in California by the Ancestors of Enrolled Indians of California*. Ed. By R.F. Heizer. Socorro, N.M.: Ballena Press, 1978.
- _____. *Federal Concern About the Conditions of California Indians, 1853 to 1913: Eight Documents Selected and Edited by Robert F. Heizer*. Socorro, N.M.: Ballena Press, 1979.
- _____, and Albert B. Elsasser. *The Natural World of the California Indians*. Berkeley: University of California Press, 1980.
- _____, ed. *The Destruction of California Indians*. Lincoln: University of Nebraska Press, 1993.
- _____, and Adan E. Treganza. "'Quarries of the Indians of California.'" *California Journal of Mines and Geology*, No. 3 (1944).
- Hentschel, Rich. "Native Americans and Water: The Impact of Federal Projects. A Comparison of Two Reservations." Master's Thesis. San Francisco State University, Department of Geography. May, 1987.
- Hicks, Patricia Johnson. "Stories of a Gold Miner: Trinity County, California, 1848-1861." *Trinity Journal*, 1989.

Hill, Joseph J. "Ewing Young in the Fur Trade of the Far Southwest, 1822-1834,"
Quarterly of the Oregon Historical Society 24 (March 1923):1-27.

History of Humboldt County, California. San Francisco: Wallace W. Elliott & Co.,
Publishers, 1881.

Hittell, John S. *Mining in the Pacific States of North America*. San Francisco: H.H.
Bancroft, 1861.

_____. *The Resources of California, Comprising Agriculture, Mining, Geography,
Climate, Commerce, Etc., Etc., and the Past and Future Development of the State*.
San Francisco: A. Roman & Company, 1863.

Holland, Alfred E. "William E. Dougherty and Salmon Fishing on the Klamath River,
1886 - 1898." Master's Thesis. Sacramento State University, Department of
History, 1996.

Hoopes, Chad L. *Lure of the Humboldt Bay Region: Early Explorations, Discoveries, and
Foundations Establishing the Bay Region*. DuBuque: W.C. Brown, 1966.

_____. *The Commercial Fishing Industry in Humboldt County*. Eureka: Western
Interstate Commission for Higher Education. Economic Internship Program,
1969.

_____. "Redick Mckee and the Humboldt Bay Region, 1851-1852." *California
Historical Society Quarterly* 69, no. (September 1970): 195-219.

_____. *Domesticate or Exterminate*. Eureka: Redwood Coast Publications, 1975.

Hoover, Mildred Brook, et al. *Historic Spots in California*. Rev. ed. Stanford: Stanford
University Press, 1990.

Horgan, Paul. *Great River: The Rio Grande in North American History*. New York,:
Rinehart, 1954.

Hostler, Patricia, and Bryan Hostler. *History of the Hoopa Tribe*. Hoopa: Hoopa Valley
Business Council, 1967.

- Hotchkiss, Helen Evison. "The Early History of Trinity County." Ph.D. Dissertation. University of California, Berkeley. Department of History, 1960.
- Hoxie, Frederick E. *Encyclopedia of North American Indians*. Boston: Houghton Mifflin Company, 1996.
- Hudson, Travis. "To Sea or Not to Sea: Further Notes on the 'Oceangoing' Dugouts of North Coastal California." *Journal of California and Great Basin Anthropology* 3, no. 2 (1981): 269-82.
- Hundley, Norris, *Water and the West : The Colorado River Compact and the Politics of Water in the American West*. Berkeley: University of California Press, 1975.
- _____. "The Dark and Bloody Ground of Indian Water Rights: Confusion Elevated to Principle." *Western Historical Quarterly* No 9 (January, 1982), 17-42.
- _____. "The Winter's Decision and Indian Water Rights: A Mystery Reexamined." *Western Historical Quarterly*. No. 13 (January 1982), 46-63.
- _____. *The Great Thirst : Californians and Water -a History*. Rev. ed. Berkeley: University of California Press, 2001.
- Huntsinger, Lynn and Sarah McCaffrey, "A Forest for the Trees: Forest Management and the Yurok Environment, 1850 to 1994." *American Indian and Culture Research Journal*. 19:4(1995) 155-192.
- Hurtado, Albert L. *Indian Survival on the California Frontier*. New Haven: Yale University Press, 1988.
- Irvine, Lehigh Hadley. *What Humboldt Offers You.*: Eureka: Humboldt County Chamber of Commerce, 1913.
- Jackson, J. J. "Tales from the Mountaineer." Rotary Club of Weaverville, 1964.
- Jacoby, Karl. *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of The American Conservation Movement*. Berkeley: University of

California Press, 2001.

Johnson, Arthur H. *The Origin and Distribution of Clay-Sized Particles in the Trinity River Basin, California*. Arcata: Humboldt State University, Department of Geology, 1973.

Johnson, Jean K. "Farm, Range, Forest, and Salmon: The Tucannon Watershed of the Columbia River Basin, 1850-1995." Ph.D. Dissertation. Washington State University. Department of History. December, 1995.

Johnson, W.O. *The 1964 Flood in Hoopa and Willow Creek, California.*: Hoopa,CA. n.d.

Jones, Alice Goen. *Trinity County Historic Sites*. Weaverville: Trinity County Historical Society, 1981.

Kahrl, William L., ed. *The California Water Atlas*. Sacramento: State of California, 1979.

Kasch, Charles. "Klamath County, California." *California Historical Society Quarterly* no. 34 (Sept. 1955), 265-73.

Kelley, Robert. *Battling the Inland Sea: American Political Culture, Public Policy, and the Sacramento Valley, 1850-1986*. Berkeley: University of California Press, 1989.

_____. *Gold vs. Grain, The Hydraulic Mining Controversy in California's Central Valley: A Chapter in the Decline in the Concept of Laissez-Faire*. Glendale, CA.: Arthur H. Clark Co., 1959

_____. "Forgotten Giant: The Hydraulic Gold Mining Industry in California." *Pacific Historical Review*, 23(November 1954).

_____. "The Mining Debris Controversy in the Sacramento Valley." *Pacific Historical Review*, 25(November 1956).

Kellogg, J. Michael. *Treatment of Minority Groups in Humboldt: A History*. Arcata, California: Humboldt State University Library, 1972.

- Kelsey, Harry. "The California Indian Treaty Myth," *Southern California Quarterly* 55 (1973):225-38.
- Kerwin, Jerome G. *Federal Water-Power Legislation*. New York: Columbia University Press, 1926.
- Kinney, Jay P. *Indian Forest and Range: A History of the Administration and Conservation of the Redman's Heritage*. Washington, D.C.: Forestry Enterprises, 1950.
- _____. *A Continent Lost, A Civilization Won*. Baltimore: Johns Hopkins University Press, 1937.
- Kise, Commodore C. "Dredges Along the Trinity." Trinity County Historical Society Museum, Weaverville, California, nd. Document File: Mining. Document #76
- Klimek, Stanislaw. "The Structure of California Indian Culture." *University of California Publications in American Archaeology and Ethnology* vol 37, no. 1 (1935).
- Kolupaila, Steponas. "Early History of Hydrometry in the United States." *American Society of Civil Engineers: Journal of the Hydraulics Division*, 86(January, 1960).
- Kroeber, Alfred Luis. "The Religion of the Indians of California." *University of California Publications in American Archaeology and Ethnology* vol 4, no. 6 (1907).
- _____. "World Renewal: A Cult System of Native Northwest California." *Anthropological Records* vol 13, no. 1 (1949).
- _____. *Continuity of Indian Population in California from 1770/1848 to 1955*. Berkeley: University of California Archaeological Research Facility, Dept. of Anthropology, 1970.
- _____. and Samuel A. Barrett, "Fishing Among the Indians of Northwest California." *University of California Anthropological Records*. Berkeley: University of California Press, 1960. 21(1):1-210.

- Kusel, Jonathan, and Elisa Adler. *Forest Communities, Community Forests*. Lanham, Md. Oxford: Rowman & Littlefield, 2003.
- Kvasnicka, Robert M., and Herman J. Viola. *The Commissioners of Indian Affairs, 1824-1977*. Lincoln: University of Nebraska Press, 1979.
- LaLande, Jeff. *First Over the Siskiyou: Peter Skene Ogden's 1826-1827 Journey through the Oregon-California Borderlands*. Portland: Oregon Historical Society Press, 1987.
- Lawson, Michael L. *Dammed Indians the Pick-Sloan Plan and the Missouri River Sioux, 1944-1980*. Norman: University of Oklahoma Press, 1994.
- Leeper, David Rohrer. *The Argonauts of Forty-Nine: Some Recollections of the Plains and the Diggings*. South Bend, Indiana, 1894.
- Lewis, David Rich. *Neither Wolf Nor Dog: American Indians, Environment, and Agrarian Change*. New York: Oxford University Press, 1994.
- _____. "Changing Subsistence, Changing Reservation Environments: The Hupa, 1850-1980s." *Agricultural History* 66:2 (Spring, 1992).
- Lippitt, Francis. *Reminiscence of Francis J. Lippitt*. Providence: Preston Rounds Company, 1902.
- "List of Mills, Mines, & Business Houses in Del Norte County in 1880." *Del Norte County Historical Society Bulletin*. (1974).
- Littlefield, Alice, and Marth Knack. Eds. *Native Americans and Wage Labor Ethnohistorical Perspectives*. Norman: University of Oklahoma Press, 1996.
- Loud, Slewellyn. "Ethnogeography and Archaeology of the Wiyot Territory." *University of California Publications in American Archaeology and Ethnology* no. 14 (1918).
- Mackey, William. "Old Time Mining Tales" *Del Norte County Historical Society Bulletin*, (March, 1977).

- MacMullen, Jerry. *Paddle Wheel Days in California*. Stanford: Stanford University Press, 1944.
- Marshall, Mahlon. "The Whites Come to Hoopa Valley." *The Pacific Historian* vol 15 (Spring, 1971).
- Marston, Ed. *Western Water Made Simple*. Washington, D.C.: Island Press, 1987.
- Martin, John. "*Data Regarding Settlement of Trinity County, Founding of Weaverville, Etc. Gathered from Information Kindly Given by Mr. John Martin, for the Use of Hubert Howe Bancroft.*" 1888.
- May, Philip Ross. *Origins of Hydraulic Mining in California*. Oakland,: Holmes Book Co., 1970.
- McDonald, Janet A. *The Dispossession of the American Indian, 1887-1934*. Bloomington:: Indiana University Press, 1991.
- McEvoy, Arthur *The Fisherman's Problem: Ecology and Law in California Fisheries, 1850-1980*. Cambridge: Cambridge University Press, 1986.
- Mckeney's Eight County Directory of Humboldt, Mendocino, Sonoma, Marin, Solano, Napa, Lake, and Yolo*. San Francisco and Oakland: L. M. McKenny & Co., 1883.
- Memorial and Biographical History of Northern California*. Chicago: The Lewis Publishing Company, 1891.
- Merriam, C. Hart. *Ethnographic Notes on California Indian Tribes by C. Hart Merriam*. University of California Archaeological Survey. Berkeley: University of California, 1966.
- Minnis, Paul E. *Ethnobotany : A Reader*. Norman: University of Oklahoma Press, 2000.
- _____, and Wayne J. Elisens. *Biodiversity and Native America*. Norman, Okla.: University of Oklahoma Press, 2000.

- Moeur, J. H. et. al. *Surplus Waters of Northern California and Oregon, Washington, Idaho Available for Import to Areas in Southern California*. California Water Plan and the Integrated Inter-Basin Development Plan U.S. Bureau of Reclamation. Arizona Interstate Stream Commission. Phoenix, AZ. May 15, 1956.
- Morgan, Dale. *Jedediah Smith and the Opening of the West*. Indianapolis: Bobbs-Merrill, 1953.
- Mount, Jeffrey F. *California Rivers and Streams : The Conflict between Fluvial Process and Land Use*. Berkeley: University of California Press, 1995.
- Moyle, Peter B. *Inland Fishes of California*. Rev. and expand ed. Berkeley, Calif. ; London: University of California Press, 2002.
- Needham, P. R. "Report on the Klamath-Trinity River Fact Finding Committee." n.p.: California State Chamber of Commerce, 1936.
- Nelson, Byron Jr. *Our Home Forever: The Hupa Indians of Northern California*. Salt Lake City: Howe Brothers, 1988.
- Norton, Jack. *Genocide in Northwestern California: When Our Worlds Cried*. San Francisco: Indian Historian Press, 1979.
- Nunis, Doyce B. Jr., ed. *A Guide to the History of California*. New York: Greenwood Press, 1988.
- Nutter, E.H. "Gold Mining in Trinity County: An Unfailing Record of Production Which Dates Back to the Days of the Pioneer." *Pacific Coast Miner*, February 27, 1904.
- O'Hara, Susan Pritchard, and Gregory Graves. *Saving California's Coast: Army Engineers at Oceanside and Humboldt Bay*. Spokane, Wash.: Arthur H. Clark Company, 1991.
- "On the Trail: Journey up the Klamath-the Condition of the Country." *Western Watchman*, May 22, 1897.
- O'Reilly, Dennis M. *Humboldt County's Principal Racial Minorities: 1850-1872*. Arcata,

California: Humboldt State University Library, 1972.

Orton, Richard, ed., ed. *Records of California Men in the War of the Rebellion: 1861-1867*. Sacramento: State Printing Office, 1890.

Overview of the Cultural Historic Resources of Euro-American and other Immigrant Groups in the Shasta-Trinity National Forest. Playa Del Rey, CA.: Geoscientific Systems and Consulting (March, 1981).

Palais, Hyman and Earl Roberts, "The History of the Lumber Industry in Humboldt County," *Pacific Historical Review*. 19:1 (February, 1950).

Paul, Rodman W. *California Gold : The Beginning of Mining in the Far West*. Cambridge, Mass.: Harvard University Press, 1947.

_____. *The California Gold Discovery; Sources, Documents, Accounts, and Memoirs Relating to the Discovery of Gold at Sutter's Mill*. Georgetown, Calif.: Talisman Press, 1966.

_____. *The Miners' Own Book, Containing Correct Illustrations and Descriptions of the Various Modes of California Mining*. San Francisco,: Book Club of California, 1949.

_____. *Mining Frontiers of the Far West*. Albuquerque: University of New Mexico Press, 2001.

Pearsall, Clarence E., et al., ed. *The Quest for Qual-a-Wa-Loo*. Oakland, Calif.: Holmes Book Co., 1966.

Peffer, E. Louise, *The Closing of the Public Domain: Disposal and Reservation Policies, 1900-1950*. New York: Arno Press, 1972.

Petts, Geoffrey E. *Impounded Rivers: Perspectives for Ecological Management*. New York: John Wiley and Sons, 1984.

Phelps, William Dane. *Fore and Aft: Or, Leaves from the Life of an Old Sailor*. Boston: Nichols and Hall, 1871.

- Phillips, George H., ed. *The Enduring Struggle: Indians in California History*. San Francisco: Boyd and Fraser, 1981.
- Pisani, Donald J. "The Origins of Western Water Law: Case Studies from Two California Mining Districts." *California History* LXX, no. 3 (Fall 1991).
- _____. "Enterprise and Equity: A Critique of Western Water Law in the Nineteenth Century." *Western Historical Quarterly*. XVII:1 (January, 1987).
- _____. "Forests and Conservation, 1865-1890." *The Journal of American History* 72:2 (Sept., 1985), 340-359.
- _____. *From the Family Farm to Agribusiness : The Irrigation Crusade in California and the West, 1850-1931*. Berkeley: University of California Press, 1984.
- _____. *To Reclaim a Divided West : Water, Law, and Public Policy, 1848-1902* Histories of the American Frontier. Albuquerque: University of New Mexico Press, 1992.
- _____. *Water and American Government the Reclamation Bureau, National Water Policy, and the West, 1902-1935*. Berkeley: University of California Press, 2002.
- _____, and Hal Rothman. *Water, Land, and Law in the West : The Limits of Public Policy, 1850-1920* Development of Western Resources. Lawrence, Kan.: University Press of Kansas, 1996.
- Powers, Stephen. *Tribes of California*. Reprint of 1877 edition. Berkeley: University of California Press,, 1976.
- Prucha, Francis P., comp., ed. *A Bibliographical Guide to the History of Indian-White Relations in the United States*. Chicago: University of Chicago Press, 1977.
- _____, ed. *Indian-White Relations in the United States: A Bibliography of Works Published, 1975-1980*. Lincoln: University of Nebraska Press, 1982.
- _____. *American Indian Treaties: The History of a Political Anomaly*. Berkeley:

University of California Press, 1994.

Rankel, Gary L. "Depleted Chinook Salmon Runs in the Klamath River Basin: Causes, Consequences and Constraints on Management." *Western Proceedings: 60th Annual Conference of the Western Association of Fish and Wildlife Agencies*. Kalispell, Montana, July, 1980.

Raphael, Ray. *Little White Father: Redick McKee on the California Frontier*. Eureka, CA.: Humboldt County Historical Society, 1993.

Rawls, James J., ed. *Indians of California: The Changing Image*. Norman: University of Oklahoma Press, 1984.

Reber, Bruce. *The United States Army and the Indian Wars in the Trans-Mississippi West, 1860-1898*. Carlisle Barracks, PA.: U.S. Army Military History Institute, 1978.

Robbins, William G. *American Forestry : A History of National, State, and Private Cooperation*. Lincoln: University of Nebraska Press, 1985.

Ryan, Vernon. "LaGrange Mine." Oral History Transcription. Weaverville Historical Society Museum, Weaverville, California, October 3, 1969. Document File: LaGrange, Document #27.

Sanborn, Margaret. *The American: River of El Dorado*. Rivers of America. New York,: Holt Rinehart and Winston, 1974.

Schnieders, Robert Kelley. *Unruly River: Two Centuries of Change Along the Missouri*. Lawrence: University Press of Kansas, 1999.

Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.

Spence, Clark C., "The Golden Age of Dredging: The Development of an Industry and Its Environmental Impact." *Western Historical Quarterly*. XI:4 (October, 1980), 401-414.

- Steger, Gertrude A. "A Chronology of the Life of Pierson Barton Reading," *California Historical Society Quarterly* 22 (December 1943).
- Sterling, Everett W. "The Powell Irrigation Survey, 1888-1893." *Mississippi Valley Historical Review*. 27:3 (December, 1940), 421-434.
- Strobridge, W. F. "California's Bloody Klamath." *Journal of the West* vol 20, no. 4 (1981): 20-25.
- _____. *Regulars in the Redwoods: The U.S. Army in Northern California, 1852-1861*. Spokane: Arthur H. Clark, 1994.
- Sullivan, Maurice S. *The Travels of Jedediah Smith: A Documentary Outline Including the Journal of the Great American Pathfinder*. Santa Ana, Calif.: the Fine Arts Press, 1934.
- Supervisors, Humboldt County Board of. *Humboldt County Souvenir: Being a Frank, Fair and Accurate Exposition, Pictorially and Otherwise of the Resources, Industries, and Possibilities of This Magnificent Section of California*. 2nd ed.: Eureka: The Times Publishing Co., 1904.
- Swezey, Sean L. "Ritual Management of Salmonid Fish Resources in California." *Journal of California Anthropology*, vol 4, (1977) 6-29.
- Taylor, Theodore, *The Bureau of Indian Affairs*. Boulder: Westview Press, 1984.
- Thompson, Lucy. *To the American Indian : Reminiscences of a Yurok Woman*. Berkeley, Calif.: Heyday Books : In conjunction with Peter E. Palmquist, 1991.
- Times. *Humboldt County, California, Wants Your Factories*. 2nd ed.: Eureka: The Times Publishing Co., 1917.
- Trennert, Robert A. *Alternative to Extinction : Federal Indian Policy and the Beginnings of the Reservation System, 1846-51*. Philadelphia: Temple University Press, 1975.
- Trinity County, California. *Trinity, the Second Largest Producer of Gold in California, Its Minerals and 1000 of Its Mines, Compiled from Official Records.*, [1892?].

- “Trinity Miners Aroused At Bradley's Sell-Out To Sports”, *California Mining Journal*. 16 (March, 1941)., Trinity County Historical Society Museum, Weaverville, California. Document File: Mining, Document #19.
- Tuan, Yi-fu. *Topophilia : A Study of Environmental Perception, Attitudes, and Values*. New York: Columbia University Press, 1990.
- User's Guide. Index to Articles on California Mines in the Mining and Scientific Press*. Sacramento: California State Library Foundation, 1986.
- Wagner, Jack Russell. *Gold Mines of California; an Illustrated History of the Most Productive Mines with Descriptions of the Interesting People Who Owned and Operated Them*. Berkeley, Calif.,: Howell-North Books, 1970.
- Wallerstein, Immanuel Maurice. *The Modern World-System : Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. Text ed. Studies in Social Discontinuity. New York: Academic Press, 1976.
- Walsh, Jane MacLaren. *John Peabody Harrington: The Man and His California Indian Fieldnotes*. Ramona, CA.: Ballena Pres, 1976.
- Walton, John. *Western Times and Water Wars: State, Culture and Rebellion in California*. Berkeley: University of California Press, 1992.
- Waterman, T. T. “Yurok Geography.” *University of California Publications in American Archaeology and Ethnology* 16 (1920).
- _____, and Alfred L. Kroeber, “The Kepel Fish Dam.” *University of California Publications in American Archaeology and Ethnology* vol 35, no. 6 (1938).
- Weber, David J. *The Spanish Frontier in North America*. New Haven: Yale University Press, 1992.
- Wells, Harry L. *History of Siskiyou County, California*. Oakland, CA.: D. J. Stewart & Co., 1881.

- Wheat, Carl I. *The Maps of the California Gold Region, 1848-1857: A Biblio-Cartography of an Important Decade*. San Francisco: The Grabhorn Press, 1942.
- White, Richard. *Land Use, Environment, and Social Change : The Shaping of Island County, Washington*. Seattle: University of Washington Press, 1980.
- White, Richard. *"It's Your Misfortune and None of My Own" : A History of the American West*. 1st ed. Norman: University of Oklahoma Press, 1991.
- _____. *The Organic Machine*. New York: Hill and Wang, 1995.
- Williams, James C. *Energy and the Making of Modern California*. Akron, Ohio: University of Akron Press, 1997.
- Willis, Richard G. *The Labor Movement in Humboldt County, 1883-1910: Its Origins, Character and Impact*. Arcata, California: Humboldt State University Library, 1970.
- Wilson, E. B. *Hydraulic and Placer Mining*. 3d rev. ed. New York,: Wiley, 1918.
- Wilutis, Richard. "The Development of Humboldt County Transportation: Linking Humboldt Bay to Weaverville." Arcata CA.: Humboldt State University Library, 1990.
- Wishart, David J. *The Fur Trade of the American West, 1807-1840*. Lincoln: University of Nebraska Press, 1979.
- Woodruff, C. E. "Dances of the Hupa Indians." *American Anthropologist* no. 5 (1892): 53-61.
- Worster, Donald. *Rivers of Empire : Water, Aridity, and the Growth of the American West*. 1st ed. New York: Pantheon Books, 1985.
- Wright, Jon Edward. "Now Entering Weitspus, Weitchpec, Weitspek, Wait'spek, Weithspek, Weits-Pek, Wish-Pooke, Titsch-Pik, Weitchpeck: Population 150, Elevation 250." Arcata, CA.: Humboldt State University, 1986.

Yale, Charles C.. *Pacific Coast Harbors: A Description of the Harbors, Landings, Roadsteads and Chutes on the Coast Line of California, Oregon and Washington.* San Francisco, [n.p.], 1879.

Yale, Gregory. *Legal Titles to Mining Claims and Water Rights in California under the Mining Law of Congress, of July, 1866.* San Francisco: A. Roman, 1867.