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Mary Christina Wood

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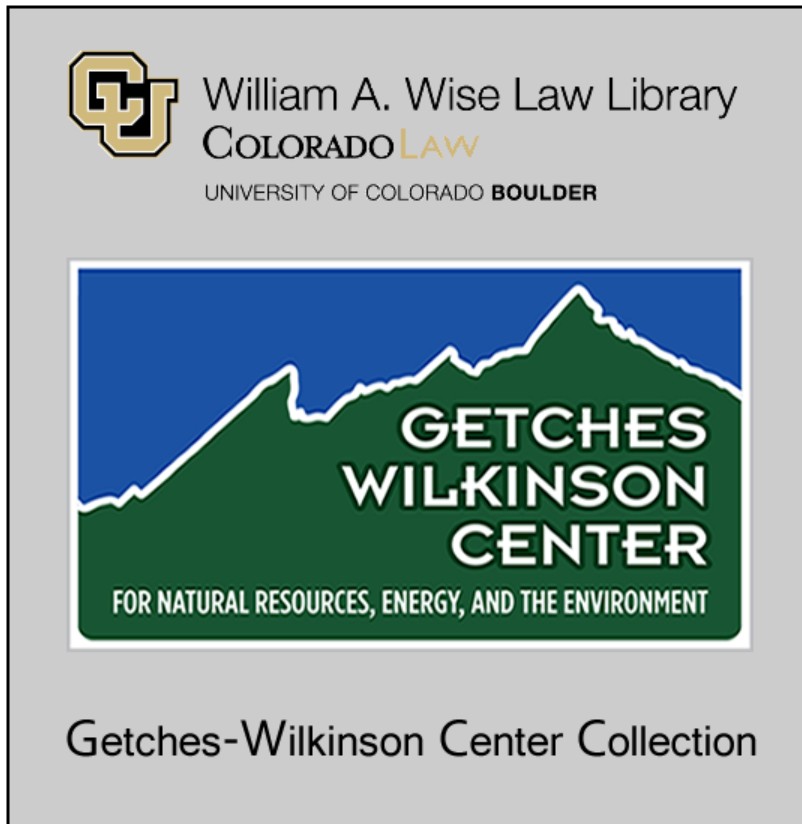
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**A Comparison: Lessons From the Columbia Basin and the  
Upper Colorado Basin Fish Recovery Efforts**

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**BIODIVERSITY PROTECTION:  
IMPLEMENTATION AND REFORM OF THE  
ENDANGERED SPECIES ACT**

Natural Resources Law Center  
University of Colorado  
School of Law  
Boulder, Colorado

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**A Comparison: Lessons From the Columbia Basin and the  
Upper Colorado Basin Fish Recovery Efforts**

by

Mary Christina Wood

**I. Introduction: The Value of a Comparison in  
Assessing the Effectiveness of the Endangered  
Species Act (ESA)**

**A. Introduction**

The Endangered Species Act (ESA) of 1973 is perhaps more politically charged than any other environmental law. Critics from private business and corporate quarters characterize the ESA as unyielding and a hindrance to economic activity. Current Congressional initiatives are aimed at significantly weakening the act's protective mandates. At the same time, environmental advocates point out that, aside from a few isolated instances, the record of the ESA has not been successful in preventing a massive decline of wildlife. Specific criticism is leveled at the Act's focus on individual species rather than ecosystems, and its "deathbed" approach which provides protection only when the species is already seriously imperiled. A coalition of environmental groups just recently released a proposed "Endangered Ecosystems Act" which would address broad-scale ecosystem protection beyond the individual species approach of the ESA.

Reauthorization of the ESA has prompted scrutiny of the Act's implementation record. In this time of increased focus on the ESA, differing conceptions about endangered species protection and the act itself become more divergent. Against this context, it is particularly useful to analyze case-

studies of the Act's implementation to fairly evaluate strengths and weaknesses and possible areas of reform.

**B. The Comparison: A Focus on Section 7 and Section 4 in Two Basins**

This outline compares the Act's implementation in two of America's most environmentally degraded river basin ecosystems: the Colorado and Columbia River Basins. The Columbia River Basin has three species of listed Snake River salmon, and the Colorado Basin has four listed species of fish. The National Marine Fisheries Service (NMFS) administers the Act as it applies to the endangered salmon in the Columbia River Basin, and the U.S. Fish and Wildlife Service (USFWS) implements the act as it applies to the endangered fish of the Colorado Basin.

The comparison below focuses on the implementation of two provisions of the act, section 7 (consultation) and section 4 (recovery). Both basins are largely dominated by federal agencies which have transformed the natural hydrology of the rivers through water and hydroelectricity projects, precipitating the loss of native species. Federal agency operations in both the Colorado and Columbia River Basins are subject to consultation under section 7, which prohibits federal agencies from taking actions which may "jeopardize" a listed species. 16 U.S.C. 1536(a)(2). Moreover, both basins are the subject of recovery efforts under section 4 of the ESA, which requires the Service to develop recovery plans for the conservation of the species. 16 U.S.C. 1533(f).

Comparing the Act's implementation in the two basins is instructive, because in both cases the ESA applies to natural resource management over vast geographic areas. This application of the ESA is far different from the more project-specific application of the ESA which is more

characteristic of the section 9 take provisions. Any comparison of the two basins must necessarily sweep broadly, due to substantial individual differences between them. Nevertheless the comparison offers insights regarding the effectiveness of the ESA.

### C. ESA Implementation Generally

A comparison of the recovery efforts in the Columbia and Colorado River basins must be framed against the overall context of ESA implementation over the last 20 years. A thorough review of the Act's implementation was conducted by Professor Oliver Houck in 1993 (Houck, supra). Professor Houck concluded that, while the Act has been criticized as inflexible, the implementation record reveals quite the opposite -- that "the ESA has accommodated the overwhelming majority of human activity without impediment." (Houck, at 279).

Indeed, Professor Houck concludes that USFWS and NMFS have, in practical terms, converted the mandatory provisions of the act into a "more discretionary permit system." (Houck at 358). With respect to section 7 alone -- the overriding regulatory handle in both the Colorado and Columbia River Basins -- less than .02% of the consultations (73,560 formal and informal combined) resulted in terminating projects over the last 5 years. (Houck at 318). With respect to western water development projects, of the 3,200 consultations reviewed in a GAO study, none led to termination of a project, and only 68 forced any project alterations at all. (Houck at 318).

Professor Houck's analysis of section 7 implementation concludes that "the biological agencies are bending over backward to identify alternatives that send the project forward in the face of potential jeopardy -- at some risk to

the species. This suspicion is not allayed by recurring evidence that -- whatever the law -- the alternatives found for controversial projects have been strongly influenced by local and national politics." (Houck at 319). A more recent study of recovery planning under the ESA, by Professor Federico Cheever, notes that while the ESA prevents species from "disappearing entirely," it has done "relatively little to bring species back from the brink of extinction and ensure their continued survival." (Cheever at 4).

#### **D. The National Wildlife Crisis**

Despite the fact that the ESA has been in effect for over two decades, wildlife losses in this country have mounted dramatically. The primary cause of wildlife decline is loss of habitat. (Houck at 296). As of 1991, a total of 651 species were listed as threatened or endangered under the ESA. (Houck at 285). In 1990, the Council on Environmental Quality released its annual report which underscored the severity of the current wildlife crisis. Based on a survey of all 50 states, the Council concluded that a total of 9,000 U.S. plant and animal species may currently be at risk of threatened extinction. The report noted:

The problem is national in scope, with every region of the country reporting losses of native species ... more than species are being lost. Whole plant and animal communities -- integrated, resilient systems -- are threatened. (cited in Houck, at n. 13).

## **II. The Setting: Magnificent Basins of the West**

### **A. Environmental History of the Basins: Human-Induced Transformation of the Columbia and Colorado Rivers**



In his book, Northwest Passage, author William Dietrich presents the history of the Columbia River over the past two hundred years as a series of physical and conceptual transformations. (Dietrich). The same characterizations are apt for the Colorado River system as well.

### **1. The Aboriginal Rivers**

Both of these great rivers can be thought of in their historic natural form as the "Aboriginal Rivers," supporting a rich diversity of species and human life, a product of finely balanced evolution over thousands of years.

The Columbia River flows 1,200 miles from its headwaters in the Canadian Rockies to the Port of Astoria on the Pacific Ocean. (Cone at 118). It pours more water into the Pacific Ocean than any other river in the Western Hemisphere. Its average annual streamflow is twice that of the Nile River and more than 10 times that of the Colorado River. It produces an average annual runoff of 198 million acre-feet. Its major tributary, the Snake River, has an average flow of 50,000 - 130,000 cubic feet per second.

The Colorado River system has its headwaters in the Rocky Mountains of northeast Colorado and flows 1700 miles to the Gulf of California in Mexico, draining a basin of 244,000 square miles and producing an average yield of between 13 and 14 million acre-feet. (McDonnell & Getches at 6). Historically, flows varied dramatically from year to year, ranging from a few thousand cubic feet per second to nearly 400,000. (Swimming Upstream).

Both rivers ecosystems supported dominant species of fish that are now on the brink of extinction. In the Colorado River system, the Colorado squawfish was the reigning predator. (Swimming Upstream). Called the "white salmon" by

early settlers, it grew to nearly 6 feet long, and is considered North America's largest fish predator. It, and another endangered fish, the razorback sucker, evolved more than three million years ago. (Swimming Upstream). The Basin also supported the bonytail chub, which can live nearly 50 years, and the humpback chub, which can survive more than 30 years.

The Columbia River system provided habitat for numerous species of anadromous salmon. The basin supported historic runs of 10-16 million fish. The wild fish spawn in the tributary streams, and the smolts journey long distances to the sea, spending 2-4 years in the ocean before returning to spawn. A Snake River salmon will journey nearly a thousand miles and climb 6,400 feet back to its natal waters to spawn.

The native people of both basins depended on these fish for subsistence. In the Colorado River Basin the Native Americans ate razorbacks and squawfish (Bolin at 2). In the Columbia River Basin the salmon was the primary staple of subsistence. The dependence of tribal people on the natural environment spawned a cultural mandate to respect and comply with the natural laws of the river, and this in turn promoted human activity which was consistent with ecological sustainability. The carefully controlled harvest of salmon by the Columbia River Basin Tribes which endured for millennia was inspired not by a detailed set of written laws, but by an all-encompassing reverence for the creature that sustained life in the basin. Tribal ceremonies today keep alive that traditional respect for the aboriginal river and its dependent creatures.

## **2. The Pioneer Rivers**

In what can be thought of as a conceptual transformation of the rivers in both basins, the Colorado and Columbia

Rivers became the "Pioneer Rivers," formidable and daunting waters to the first white explorers. (Dietrich). The Lewis and Clark expedition encountered the rapids of the Columbia River on October 16, 1805. (Journals of Lewis and Clark, 250). The first white voyage of the Colorado came much later in the century, by John Wesley Powell, in 1869. The elements of danger and the unknown which permeated both expeditions inevitably spawned a sense of conquest at their ultimate conclusion. As William Dietrich observes with regard to the Columbia, "If the natives had adapted to the river as it was, the newcomers mused about adapting the river to themselves." This thinking, perhaps, was to be the precursor of the next transformation.

### 3. The "Developed" Rivers

In the next historical period, the natural rivers were "developed" by two powerful federal agencies, the Bureau of Reclamation and the Army Corps of Engineers, both hastening industrialization of the West. In 1934 construction of Grand Coulee Dam began on the Columbia, and in 1935, construction of Hoover Dam was completed on the Colorado. Both monolithic structures represented achievements of human engineering that had been nearly unfathomable for that era. Both were part of a dam-building frenzy that spared few river systems in the Nation.

The destruction of the aboriginal rivers in both basins left haunting symbols which persist in the public's imagination. Celilo Falls, the center of a thriving native fishing economy and a place of great spiritual significance to the Columbia River tribes, was drowned by the Dalles Dam in 1957. The Indian fishing community at the falls dated back eight millennia and was the oldest continuously inhabited community on the continent. (Dietrich at 52). Glen Canyon, a place of unparalleled beauty and mystique in

the West, was inundated by Lake Powell upon completion of the Glen Canyon Dam in 1963. (For commentary see Farmer).

Eight monolithic dams blocks the Columbia and Snake Rivers' course and pose lethal conditions to migrating fish. Throughout the basin there are over 500 dams, which gives the basin the dubious distinction of being the most dammed watershed in the world. Several hundred miles of the once free-flowing Columbia and Snake Rivers consist now of a series of stagnant reservoirs, computer-controlled by Army Corps of Engineers operators. The dams provide electricity, transportation, and some recreational benefits. Still other projects in the basin offer water for irrigation.

The Upper Colorado River Basin has nine major projects on the Colorado and major tributaries, the Green River, the Dolores River, and the San Juan River. The Colorado holds the dubious distinction of being the most controlled water system in the world, resembling less of a river than a giant faucet controlled by the Bureau of Reclamation to meet consumer demands of the moment. (See MacDonnell and Getches at 40, describing operations of Glen Canyon Dam). The maze of tunnels, ditches, aqueducts and dams enable the basin states to capture and divert water out of the rivers to serve more than 15 million people in a basin which receives less precipitation per kilometer than any other major watershed in the United States. (Bolin).

The scale of project development in both river basins has led some commentators to note the sheer arrogance of human intervention in natural processes. (Dietrich at 23). Moreover, critical economic analysis has revealed that some of the projects are not cost-effective and are heavily subsidized by taxpayers. Many have questioned whether some of the projects would have been built today. (See generally, Dietrich, Worster, Reisner).

Indeed, the projects of both basins admit of extravagance. The Columbia River hydrosystem provides Northwest residents with the cheapest electricity in the nation, and subsidized navigation facilities allow the small town of Lewiston, Idaho, to serve as a deep water sea port despite its location 450 miles inland. (Dietrich at 312). The Colorado River Basin supplies water for Los Angeles, Denver, Salt lake City, Albuquerque, and Phoenix. (Hanson, note 11). While the total appropriation leaves the river ecosystem essentially dewatered in its lowest reaches, municipal appropriators of the Southwest receive ample supplies to support golf courses, swimming pools, casinos, and water playgrounds. (MacDonnell and Getches at 11, noting "100 percent depletion of Colorado River water except in very high flow years").

As author William Dietrich says of the dam-building era:

This romance could not last. In a frenzied burst of construction after World War II, the dam builders overreached themselves. In a generation America went from too many floods to too many flooded reservoirs. Hydroelectricity went from miracle to status quo. Undeveloped rivers went from something useless to something precious in their rarity. Irrigation projects struggled to justify their rising costs to farmers and taxpayers. It has been two decades now since Congress last authorized a major reclamation project. (Dietrich at 23).

#### **4. The Endangered Rivers**

The "Developed Rivers" are now more accurately described as the "Endangered Rivers." Human destruction through dam-building and other activities in the basins have pushed the

dominant species to the brink of extinction. In both basins, some species have already passed into extinction.

The imminence of extinction is, as expressed by commentators in both basins, unfathomable when compared to the duration these species have survived and evolved in the basins. The Colorado squawfish and razorback suckers evolved more than 3 million years ago. (Swimming Upstream). Salmon have inhabited the Columbia River Basin for 5 million years. (Cone at 55) Native fish of both basins face possible extinction in 5-10 years. (Bolin at WL1, Wood at 764). In both cases, the threatened extinction is precipitated by human activities spanning less than a century.

The Columbia River Basin once boasted the world's largest commercial fishery. Runs of 10-16 million wild fish have now fallen to approximately 500,000 wild fish. (Tribal Plan Summary). The Snake River coho has passed into extinction. Two Snake River chinook stocks and the Snake River sockeye are listed under the ESA. Scientists believe that, throughout the Basin, 59 salmon stocks have gone extinct, and another fifty are at high or moderate risk of extinction. (Wood, at 765 and sources cited therein). While up to 5,000 Snake River sockeye returned to Redfish Lake (located in the Sawtooth Mountains of Idaho) in the 1950s, only one returned in 1992, and none returned in 1996. (Id.). The year 1995 witnessed a record low number of wild salmon returning to spawn in the Snake River Basin. (Swisher).

In the Colorado Basin, four species of indigenous basin fish are listed as endangered: The Colorado squawfish, the humpback chub, the bonytail chub, and the razorback sucker. All are reduced to a few remnant populations. (Bolin, WL2). The Colorado squawfish is totally extirpated in the Lower Basin area. (MacDonnell and Getches at 39). Wild bonytail chubs are nearly extinct, or as one commentator puts it,

"functionally extinct; only a few rare individuals exist." (Bolin at WL 2, citing Battle Against Extinction). Few if any young razorback suckers are left in the wild. (Swimming Upstream). These four species represent roughly one-third of the native fish in the entire Colorado River ecosystem. (Hamill at 1).

In both basins, the fish species are indicators of greater ecosystem health. Federal water projects have radically altered and simplified the natural hydrology of both river systems, posing a threat to the greater biodiversity of the region. (See MacDonnell and Getches, at 38-39, discussing hydrological changes caused by dam operations). In the Columbia River Basin, NMFS has concluded that habitat degradation is so extensive that "[f]ew examples of naturally functioning aquatic systems (watersheds) now remain in the Pacific Northwest." (Snake River Salmon Draft Recovery Plan at 148).

##### **5. The Normative Rivers**

As a result of the ESA process in both basins, independent scientists have suggested a paradigm shift in river management to recreate natural conditions under which the fish evolved. (Stanford; NWPPC Press Release). The new vision of river management "emphasizes natural processes that shape rivers and provide the environment required to rebuild fish and wildlife populations." (NPPC Press Release) While the paradigm shift necessarily draws upon the aboriginal rivers as reference points for species' needs, it does not call for a return of the rivers in their pristine aboriginal form, or the transformation of all projects. Rather, the vision calls for re-establishing "normative" features of the river deemed essential to fish and habitat. (NWPPC Press Release).

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## **B. The Species**

### **1. Role in Regional Economy and Culture**

The Columbia Basin salmon and the Colorado native fish species differ markedly in their role in the economy and culture of their respective regions. In juxtaposition, they serve as fitting symbols of the widely divergent public sentiment towards species.

The Columbia River salmon are viewed as the icon of the Northwest, a powerful symbol of the rich ecological and cultural heritage of the region. (Wilkinson and Conner at 21). As one author describes the relationship between salmon and the human inhabitants of the Pacific Northwest: "Indeed the salmon is at least the soul of this biome . . . The salmon is a kind of current between the forest and sea . . . . The salmon travels in our heart . . . The deep resonance between the salmon of the heart and the salmon of the world is the note of our dwelling here." (Tom Jay, Salmon of the Heart).

The salmon have played a vital role in native culture for thousands of years. Prior to white settlement of the region, tribes harvested up to 5 million fish annually. (Tribal Plan Summary). Tribes have treaty rights, interpreted in the landmark cases *Washington v. Washington Passenger Fishing Vessel* and *Schappy v. Smith*, to take up to 50% of the harvestable quantities of salmon.

The non-Indian economic interest in the fishery is also substantial. Prior to destruction of the runs, the Basin's salmon fishery was the largest commercial fishery in the world. In 1985 the combined commercial and sport Pacific Salmon fishery was valued at \$1 billion (annually) and 60,000 jobs. (Save Our Wild Salmon Report).

Salmon recovery efforts are supported by the four Columbia River Basin Tribes (Yakama, Warm Springs, Nez Perce, Umatilla), the states, and a broad-based coalition of environmental and fishing groups known as the Save Our Wild Salmon Coalition, which has 47 member organizations.

The Colorado fishes do not enjoy such a central position in the culture and economy of the region. As one commentator notes, "They are neither majestic nor cuddly." (Bolin at WL2). While some species were used by Native Americans of the region and commercially fished until the 1940s, today none of the fish are sought by anglers. Widely considered "trash fish" until recently, native Colorado fish were poisoned in the mid-1960s to make way for non-native sport fish.

While salmon protection efforts in the Pacific Northwest draw upon the exalted and sacred status of the fish, native fish protection efforts in the Colorado Basin typically appeal to the philosophy of Aldo Leopold: "If the land mechanism as a whole is good, then every part is good, whether we understand it or not . . ." (Swimming Upstream). The contrast reflects the full scale of benefits Congress attached to species in passing the ESA, as expressed in the findings of the statute: "Congress finds and declares that . . . species of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." 16 U.S.C. 1531 (a) (3).

## **2. Life Cycle and Biological Needs**

Both the Columbia Basin salmon and the Colorado fish species face multiple threats at various points throughout their life cycle. In both cases, recovery must address

threats to the species originating from throughout the entire basin. And in both cases, while the species face multiple threats, an overriding cause of decline is the river operations which have transformed the free-flowing rivers in which the species evolved to a series of slack, lake-like environments. (MacDonnell and Getches at 38; Cone at 32).

The Columbia River species face threats from four human categories of mortality: hydropower operations, habitat degradation (such as logging, mining, and grazing), hatchery operations and harvest. The salmon also face a relatively unknown set of threats in their ocean environment, in which they spend up to four years. Of the human-caused threats, the hydrosystem accounts for the overriding source of mortality. Dams can kill over 90% of the juvenile smolts which migrate downstream. Federal river managers prefer to barge the baby salmon around the dams so that transportation and electricity production are not disrupted. However, after over 20 years of operation, the barging program has not halted the decline of the salmon, and it is highly controversial as a recovery measure. (See Wood, section IV.A.1).

Colorado fishes also face multiple threats throughout the basin. Like the Columbia River salmon, their habitat has been radically altered by project construction and operation. As one commentator notes, "The alteration of the Colorado River Basin rivers' hydrographs has . . . disrupted almost every phase of the fishes' life cycle." (Bolin at WL 2) Dams and reservoirs have blocked fish migration routes, altered the rivers' natural temperature and sedimentation characteristics, and changed the natural food webs upon which the fish depend. (Stanford). Non-native fish prey on the native fish, also posing a significant threat. (Bolin).

### 3. Regulatory Time Frame and Present Status

Both the Colorado Basin and Columbia Basin species have received regulatory attention under the ESA or other statutes for approximately two decades. In neither case has regulatory protection recovered the species from their imperiled status.

In the case of the Colorado species, the ESA has applied to three out of four of the fish species since it was first enacted in 1973. The razorback sucker was not listed initially with the other three endangered native species. The recovery goals of the Recovery Implementation Program, established in 1987, were designed to manage the razorback sucker so that listing would not be needed (Lochhead at 8). The program was unsuccessful in that respect, and the razorback sucker was listed in 1991. (Hamill at 1).

In the case of the Snake River salmon, citizens petitioned for listing wild salmon runs under the ESA in 1978, and NMFS initiated a status review of the species at that time. NMFS deferred listing, however, when Congress passed the Northwest Power Act of 1980, in which it devised a new river management planning structure which would achieve "parity" between hydroelectric operations and fish protection goals. The listing process which had been commenced under the ESA was consequently terminated upon the assumption that the prescriptions for recovering Columbia Basin fish would be carried out faithfully under the new mandates of the Northwest Power Act.

Since initiation of the first status review in the late 1970s, one species, the Snake River coho, has passed into extinction, and the Snake River sockeye species (listed as endangered under the ESA) has dwindled to a return of just 14 individuals over the past five years. Two species of Snake

River chinook (spring/summer and fall runs) were initially listed as "threatened" but due to collapsing numbers in 1994, underwent an emergency "endangered" listing. (see Volkman). ESA listing status has done nothing to reverse the downward spiral of fish populations. In 1991 just prior to listing under the ESA, adult returns of wild Snake River spring/summer chinook populations were 9,000. By 1996, they had dropped to fewer than 1,000. (Swisher).

### **III. The Political/Legal Framework Underlying the ESA**

#### **A. Introduction**

In both the Columbia and Colorado River basins, the ESA amounts to a statutory overlay on an already complex and entrenched legal regime of natural resource management. Both river basins encompass several states and Indian reservations. River management in both basins is partially affected by international obligations pursuant to treaties negotiated with Canada (in the case of the Columbia River Basin) and Mexico (in the case of the Colorado River Basin). In both contexts the statutory mandates of the ESA challenge vested economic interests which have enjoyed a legal regime designed to allocate the benefits of a "developed" river without due regard to ecosystem protection. Finally, in both basins there are pressing, yet unresolved, issues of Indian treaty rights as established by caselaw. These rights have not been squarely addressed in the implementation of the ESA in either basin.

The established system of state laws, court cases, federal statutes, compacts, and treaties which govern river management in both basins poses a difficult and complex undercurrent to ESA implementation.

## B. The Columbia River

Until the listing of the Snake River species, inland harvest management of the Columbia River fishery resource was governed exclusively pursuant to an interstate compact and a court decree. In 1918, the states of Oregon and Washington entered into a compact for the allocation of Columbia River Basin salmon. In 1969, the tribes gained a ruling in the federal district court of Oregon allocating them a "fair share" of fish, later interpreted to mean a share of up to 50% of the harvestable runs. (Sohappy v. Smith; Washington v. Washington Passenger Fishing Vessel). To ensure fair implementation of the tribal right, the court retained jurisdiction over the case. (United States v. Oregon).

The litigation resulted in the Columbia River Fish Management Plan (CRFMP), which sets forth a co-management regime for tribes and state fisheries officials over the salmon harvest. (United States v. Oregon). Because the harvest of hatchery fish involves an incidental take of the imperiled Snake River stocks, the CRFMP included measures for protecting these weaker stocks. Through the CRFMP process the states and tribes gained considerable experience in managing the fisheries and understanding, though not controlling, the river operations. The CRFMP is widely deemed a model arrangement for implementing a judicial decree in a manner responsive to the complexities of modern management challenges.

The other leading source of law governing river management in the basin prior to the ESA listings was the Northwest Power Act, passed by Congress in 1980. That statute created an interstate body (the Council) consisting of state appointed representatives from the Columbia River Basin states and charged it with developing a plan to accommodate hydropower needs while providing for the recovery

of fish. (Blumm, Parity 1). The statute created a significant role for state and tribal fisheries managers in providing recommendations to the Council in developing the program.

The Council's program, known as the Strategy for Salmon, was overturned by the Ninth Circuit in 1994 partially on the basis that the Council had failed to give adequate deference to state and tribal fisheries managers in developing recommendations. (Northwest Resource Information Center v. Northwest Power Planning Council). Shortly after the ruling the Council issued an amended program which substantially drew from recommendations on river operations submitted by tribal and state fisheries managers. (Colloquium, Blumm at 360-364).

Both the CRFMP and the Northwest Power Act create for the states and tribal agencies a significant role in harvest management and river operations planning. These agencies have recommended dramatic changes in river management to benefit fisheries, and such changes are to a great extent reflected in the most recent Council program. Yet the federal river operators which maintain control of the hydrofacilities have resisted altering their operations as urged by state and tribal fisheries managers. (See Colloquium, Blumm at 351-360). With the listing of the species under the ESA, NMFS has assumed a leading role in determining appropriate river operations. Significantly, the determinations of NMFS made within the framework of the ESA differ markedly from the recommendations of the states and tribes. The ESA, then, imposes a statutory overlay which in effect may conflict with the existing scheme of tribal and state management established through the CRFMP and the Northwest Power Act.

### C. The Colorado Basin

The Colorado River Basin fisheries issues focus largely on the delivery of water through federal projects. Water allocation issues among the several states in the basin have been resolved according to a complex set of interstate compacts, state laws, federal statutes and court cases known as "The Law of the River." A central agreement is the Colorado River Compact, negotiated in 1922, which divided the Colorado River into an Upper and Lower Basin, delineated at Lee Ferry in northern Arizona. (MacDonnell and Getches, at 15). The compact allocated 7,5 million acre-feet of the river system a year each to the Upper Basin and the Lower Basin. Water allocations within each state are determined according to state law which generally follows the prior appropriation system. (MacDonnell). Relying on this system of allocation, states throughout the basin began promoting projects to "develop" their water rights for municipal and agricultural uses.

There are more than 30 Indian reservations located partially or totally within the Colorado River Basin. (MacDonnell and Getches at 24). Such reservations have senior water rights under the Winters doctrine. (See Hansen at 1311). A landmark case, *Arizona v. California*, established the reservation entitlement as an amount of water necessary to serve "practicably irrigable acreage." While Congress authorized multiple projects in the basin to develop non-Indian water, projects for Indian water development came late in the process, typically following settlements of the Indian water right. (Hansen at 1317).

The ESA forms an overlay to this complex set of water allocation agreements and Indian reserved Winters rights to water. While many have stated that the ESA effectively provides a preemptive federal water right to favor endangered



fish, (Bolin at WL 7), the USFWS has been reluctant to disturb the regime established by "Law of the River."

#### **IV. The ESA Recovery Planning Process in Both Basins**

##### **A. Overview**

##### **1. Columbia River Basin Recovery**

Recovery planning in the Columbia River Basin requires a broad, "gravel to gravel" approach addressing the impact of all "four H's" in the full life-cycle of the salmon. Nevertheless, salmon advocates and fisheries managers place particular emphasis on improving migratory conditions for salmon -- a focus which is inescapable, simply because the death toll caused by present hydropower and reservoir operations is so high that altering those conditions becomes a necessary, though perhaps not entirely sufficient, requisite to recovery.

Various migration enhancement strategies distill to iterations of two basic options: 1) altering in-river conditions to restore the river to a more natural flow regime; or 2) maintaining the present dam and reservoir conditions and transporting juvenile smolts to the ocean by barge or truck (the "transportation" option). Much of the present controversy over the recovery of the salmon boils down to fundamental disagreements over the scientific and economic merits of these two options.

The first option of restoring in-river migration is firmly supported by tribal and state biologists and by environmental groups. This option would necessarily cause economic impacts affecting hydropower production and river transportation. The second option, the transportation program, was developed nearly 20 years ago as an experimental

program to respond to fish mortality associated with dams. Implemented by the U.S. Army Corps of Engineers, the program involves collecting juvenile fish and loading them onto barges or trucks for transportation around the dams. The program is heavily criticized by environmentalists and state and tribal fisheries managers who contend that it has offered no promise of improved survival after over 20 years of operation. The transportation option leads to less disruption in current river practices, and is supported by industrial and power groups as well as federal river managers.

Recovery planning in the Columbia River Basin is not limited to the ESA framework. Instead, in 1995 three plans emerged from various authorities within the basin, and the plans differ fundamentally over the issue of in-river operations. Wa-Kan-Ish-Mi-Wa-Kish-Wit, the plan issued by the four tribal governments with treaty rights in the Basin, calls for an aggressive change in dam operations that will mimic natural flows to assist juvenile migration to the sea. The plan sets long-term recovery levels to restore the fishery resource to harvestable quantities sufficient to fulfill tribal treaty rights. (Tribal Recovery Plan).

An amended plan issued by the Northwest Power Planning Council, called the Strategy for Salmon, also suggests less reliance on transportation and bold changes in in-river conditions. The plan reflects the recommendations of the state and tribal fisheries agencies and was issued after the Ninth Circuit overturned an earlier plan and severely criticized the Council in dicta, stating its recovery planning had been too heavily geared towards protecting the status quo. (Northwest Resource Information Center).

NMFS issued a proposed recovery plan for the Snake River salmon in March, 1995. The recovery plan allows for continued reliance on artificial transportation methods and

has been criticized for not requiring alterations in in-river conditions to the extent deemed necessary by state and tribal fisheries managers. (NMFS Recovery Plan; see also Tribal Comments to Recovery Plan).

## 2. Upper Colorado Basin Recovery

The Colorado Recovery program is a consensus-based program produced in the wake of intense conflict over USFWS's regulatory actions in the 1970s which limited the states and water users' ability to fully use and develop Compact guaranteed water. In 1983 the USFWS issued recovery plans for the species which set forth a coordinated approach to section 7 consultations on water projects in the basin. (See Lochhead at 4). Controversial elements included flow recommendations which would have prevented the Upper Basin from fully depleting the river of its compact-guaranteed water. (Id.).

In response to political outcry over the draft conservation plan, the USFWS agreed to enter into a negotiated settlement process to develop a recovery plan. (Hamill at 2). The USFWS formed a coordinating committee in 1984 which consisted of the USFWS, the Bureau of Reclamation, the states of Colorado, Utah and Wyoming, organizations of water users from Colorado, Utah and Wyoming, and two representatives from national environmental groups. (Hamill at 2). The Committee ultimately developed a plan, known as the Recovery Implementation Program For Endangered Fish Species in the Upper Colorado River Basin (RIP), adopted in 1988 as part of a cooperative agreement among the three states, the Secretary of Interior, and the Administrator of the Western Area Power Administration. (Hamill at 2).

The RIP combines five principle elements: habitat management (flows), habitat development, native fish

stocking, nonnative species management, and research. (RIP 1994). Not surprisingly, the most controversial aspect of the RIP involves flows which are deemed critical to fish survival. The RIP generally allows new projects to continue depleting the Colorado River Basin but contains measures to offset the water loss by seeking instream appropriations through state water appropriation laws. (See Lochhead at 9). Depletion charges are assessed against new projects. (RIP, 1994). A Recovery Implementation Committee consisting of federal, state, water development and environmental representatives was established to implement the RIP. (See Hamill at 2) (see also Lochhead at 13). The RIP is supplemented by a Recovery Action Plan (RAP) which establishes specific action plans to achieve the five RIP program elements in each of the major sub-basins of the Colorado River. (Lochhead at 10).

## **B. Comparison of the Recovery Processes**

While a detailed comparison of the recovery processes in each basin is beyond the scope of this project, several striking contrasts and commonalties are readily observable and may provide insights into the nature of ESA implementation.

### **1. Pluralistic Versus Consensus-based Government Decision-Making**

The most apparent contrast between the two recovery efforts is the institutional and legal structure within which each takes place. In the Colorado Basin the USFWS's unilateral federal authority under the ESA to force protective measures for fish has fallen sway to a consensus-based process in which states, water users, and environmental interests all participate to some degree. While USFWS has been careful to make clear that it maintains regulatory

authority under the ESA -- authority which may trump the RIP if measures are not implemented according to plan -- nevertheless the agency has seemingly abdicated, as a practical and political matter, much of its regulatory role in the Basin. Most significantly, no other federal or state agencies have a legal mandate to ensure protection of the Colorado native fish species. Indeed, state water agencies are motivated primarily by a desire to deplete the river to the extent of their entitlement under the Law of the River, and in that sense have interests directly adverse to fish.

As a consequence of the consensus-based administrative framework, there are no government-sponsored recovery plans which compete with the RIP/RAP. No other federal or state laws pose equivalent competing mandates for fish recovery or ecosystem protection. Accordingly, the USFWS approach in implementing the ESA throughout the RIP/RAP has been largely to adapt the recovery process to the mandates of state law. Rather than asserting federal preemptive water rights under the ESA, the ESA has instead produced a procedural structure to gain fish protection efforts through the very legal system and river management structure that produced the extinction crisis in the first place.

In the Columbia River Basin, an opposite paradigm of competing authority prevails over the recovery process. NMFS, claiming authority under the ESA, is actually the last agency to gain regulatory authority over river management in the basin. Two other governmental bodies have substantial potential authority over recovery under different sets of laws, and both have issued plans which would call for changes in river operations much different from, and more aggressive than, those envisioned by NMFS.

The Columbia River tribes claim the oldest rights under their treaties, which guarantee a fair share of the fish.

The overwhelming legal commentary suggests that the treaties carry with them a right of environmental protection of the fish. (Meyers). The tribes already enjoy a co-management role in the harvest of fish within the framework of the Columbia River Fish Management Plan under the supervision of the federal district court in U.S. v. Oregon. The tribes, having developed substantial expertise in all phases of the fish life cycle, have recently issued a recovery plan for the fish which would call for modification of river operations to reflect the more natural regime in which fish evolved. As a legal matter, the recovery plan could pose a competing mandate to NMFS' Snake River salmon recovery plan if a court determines that tribal treaty rights are not satisfied by the measures offered by NMFS in the context of the ESA recovery process.

Moreover, the Northwest Power Planning Council is directed to establish a basin-wide recovery plan under the Northwest Power Act. (See Volkman). Its most recent plan calls for substantial changes in river operations and identifies measures beyond what NMFS proposes in its own recovery plan.

The existence of these other governmental bodies -- tribes, states, and the Council -- with judicially and statutorily created roles in fish and river management, arguably creates a more pluralistic process governing species recovery. While recovery planning often appears dead-locked due to divergent scientific approaches, nevertheless, the competing visions of the various authorities may do more to ensure protective outcomes for the listed species. Unlike the Colorado River Basin, states and tribes have strong interests in ensuring a viable salmon fishery into the future due to the salmon's historic role as the cultural icon and economic mainstay of the Pacific Northwest.

Despite the broader context in which Columbia River salmon recovery issues are addressed, there are more specific observations, listed below, which focus more narrowly on the ESA recovery process in the two basins, particularly as it pertains to river operations.

## **2. Template for section 7 consultation**

In both basins, the ESA-driven recovery programs serve as a template for section 7 determinations. In the Columbia River Basin, section 7 determinations are linked measures specified in the draft Recovery Plan. (Wood at 770). NMFS recently issued a section 7 jeopardy opinion on hydrosystem operations through 1988, but identified reasonable and prudent alternatives that are closely tailored to measures identified in the draft Recovery Plan. (Wood at 787 and accompanying notes). In the Colorado River Basin, the RIP serves as a broad "reasonable and prudent alternative" to jeopardy caused by water projects in the Upper Basin. (Lochhead at 7, Cheever at 70). If the recovery implementation process identified in the RIP/RAP is progressing at a reasonable pace, the project for which consultation is sought may go forward. (Cheever at 70).

## **3. Political Framework**

In both basins, the ESA recovery process has confronted enormous political resistance mounted by vested interests in the basins. The recovery process, as implemented by NMFS and USFWS, appears to be very much a product of that political influence.

In the Colorado Basin, political resistance to recovery efforts peaked in the early 1980s when states and water users were faced with possible curtailments of their water in favor of a de-facto instream federal right for fish. They sought

an amendment of the Act to exclude the Colorado River fish from the provisions of the ESA (Hamill at 2). The Program Director for the Colorado fish recovery program has stated that the Service lacked the political support and adequate funding at that time to achieve fish recovery. (Hamill at 2). The consensus-based recovery strategy in the RIP was born of that conflict.

Similarly, in the Columbia River Basin, powerful river interests have sought outright exemptions from the act. The position of high-ranking Senators from the region on the Appropriations Committee and other key Senate committees has further politicized the context in which the ESA is implemented. In 1995, three Northwest Republican Senators pushed legislation through Congress which establishes a cost cap on annual BPA spending for fish recovery. (Swisher). The bill initially contained a provision which would have exempted river operations from the ESA. Ranking Republicans from the Northwest are now seeking ESA reform bills that could de-list the salmon; earlier this year Senator Gorton initiated an industry-funded public relations program to influence public perceptions of salmon recovery. (Swisher)

#### **4. The Status Quo and Deferral of In-River Changes**

In both basins, the Services have largely accommodated the status quo in the recovery process. In the Columbia River Basin, NMFS's recovery plan does little to require alterations in the hydrosystem and continues a heavy reliance on transportation as the leading method to assist in juvenile migration. (See Blumm, Symposium at 362, Wood at 777 and CRITFC Comments on Recovery Plan). Rather than mandating a return to more natural river conditions, NMFS continues to favor taking fish out of their critical habitat during peak periods of migration. Moreover, the most recent biological



opinion for the hydrosystem, developed to be consistent with the draft recovery plan, actually allows the dams to kill, through incidental take provisions, up to 100 percent of the fall chinook juveniles and 39 percent of the returning fall chinook adults. (1995 Hydrosystem Biological Opinion; Tribal Comments to Recovery plan at 3).

In the Colorado River Basin, the RIP/RAP has as its express purpose to allow water projects to continue depleting the basin water. (Hamill at 2). Beyond protecting existing projects on the river system, the plan actually allows *further* depletion in the form of new water projects, with the overall goal of allowing full diversion and use of the Compact entitlement. (Lochhead at 13; Hamill at 2). Indeed, through FY 1995, the Service issued biological opinions under the RIP for depletions totaling 209,000 acre feet of water. (Id.).

Generally, in both basins, achieving actual in-river reform (through changes to the hydrosystem in the Columbia/Snake, and increased flows in the Colorado) is deferred either until scientific study is more conclusive, or until the consensual framework yields the desired result.

## 5. Scientific Uncertainty

Recovery efforts in both basins are embroiled in scientific uncertainty as to the needs of the fish and the probability of success in recovery efforts. Generally, scientific uncertainty is asserted as a justification against changing in-river operations to favor a more natural river regime. (Wright, Symposium at 403; Hopfl at 6). In the Columbia River Basin, critics frequently allege that NMFS masks essentially political decisions behind a "facade" of science. NMFS's scientific assumptions are routinely challenged by tribal and state agencies, both of which have

developed a substantial amount of scientific expertise as to fishery needs. (See Wood, at 788). Because the Northwest Power Act provides for deference to tribal and state technical recommendations, there is arguably a more pluralistic scientific process at work in the Columbia River Basin than in the Colorado Basin.

In both basins, scientific uncertainty is crippling fish recovery efforts. The amount of scientific study necessary to definitively identify recovery measures with a 100% likelihood of success simply cannot be developed (if at all) in the time remaining before extinction occurs. See (Hopfl 6). In both basins, then, a critical issue involves risk assessment of various recovery alternatives. In light of the inherent risks associated with any alternative, independent scientists are increasingly recommending a return to more natural conditions in both basins. (Stanford; NPPC Press Release).

## **6. Tribal Issues**

In both basins, tribal issues remain unresolved and not well integrated into the ESA recovery process. Tribes in the Columbia River Basin have treaty rights to fish, and both the Columbia River tribes and Colorado Basin tribes have Winters water rights affected by fish recovery. Tribes in both basins correctly allege that the Service is placing a disproportionate burden of conservation on their activities. In the Columbia River Basin, NMFS is forcing severe curtailments of tribal harvest while at the same time allowing hydro-operations to continue much as they have in the past. See Tribal Comments; See also Wood at 785). In the Colorado Basin the USFWS has restricted depletions of water provided by the Animas-LaPlata project -- a project designed to provide water to tribes with interests in the San Juan River -- while allowing other non-Indian federal

projects to continue depletions, treating them essentially as part of the environmental "baseline" from which jeopardy is assessed. (Hansen).

The ESA makes no mention of Indian treaty rights, and also contains no direction as to how the Services should allocate the burden of conservation responsibility among the various sources of mortality. Where Indian treaty rights are involved, judicially developed principles and the federal trust responsibility add another layer of legal mandate to the Service's otherwise open discretion. (Wood at 747). Arguably in both basins, the conservation responsibility may not disproportionately fall on tribal interests without violating treaty rights or the government's trust responsibility. (See Wood at 785). Moreover, in the Columbia River basin, the treaty rights require restoration of salmon to levels far beyond "survival" levels contemplated by the ESA. (Wood at 783, Rohlf, Symposium at 413). Treaty rights in the Columbia River Basin also provide tribal authorities with a fisheries co-management role.

## 7. The Judicial Role

Since the ESA was first passed, courts have played a leading role in enforcing its requirements. In the landmark case, *TVA v. Hill*, the Supreme Court held that the Act's clear requirements precluded completing the Tellico Dam because of harm to the snail darter. (*Tennessee Valley Authority v. Hill*). Courts have enforced the requirements of the ESA and other environmental laws in several politically visible, regional natural resource contexts such as those involving millions of acres of public forest land in the Northwest and the Southwest.

Citizens have turned to the courts to enforce the act's requirements in both the Columbia River and Colorado River

Basins. In *Colorado Wildlife Federation v. Turner*, the federal district court of Colorado ordered USFWS to designate critical habitat for the razorback sucker. (For discussion, see Bolin, WL 18). In the Columbia River Basin, the district court of Oregon found invalid NMFS's biological opinion which had concluded that the hydrosystem posed no jeopardy to the fish. (*Idaho v. NMFS*). The federal district courts have also enforced the consultation requirements of section 7 against land management agencies affecting eastside basin habitat. (see *Pacific Rivers Council v. Thomas*). And, in a related area, the Ninth Circuit found invalid the Council's "Strategy for Salmon" Program issued under the Northwest Power Act. (*Northwest Information Center v. Northwest Power Planning Council*).

A striking similarity emerged in two court opinions issued in the Columbia River context. Both the Ninth Circuit and the federal district court of Oregon sharply criticized the recovery measures taken thus far as too modest. Both expressed a view of the defendant agencies as being too protective of the status quo to the detriment of the fish. In *Northwest Information Center*, the Ninth Circuit said of the Northwest Power Planning Council:

The Council's approach seems largely to have been from the premise that only small steps are possible, in light of entrenched river user claims of economic hardship. Rather than asserting its role as a regional leader, the Council has assumed the role of a consensus builder, sometimes sacrificing the Act's fish and wildlife goals for what is, in essence, the lowest common denominator acceptable to power interests and [industry].

And in *Idaho v. NMFS*, the federal district court of Oregon concluded that NMFS's section 7 opinion, which

found that the hydrosystem posed no jeopardy to the fish, was "seriously, significantly flawed, because it is too heavily geared towards a status quo that has allowed all forms of river activity to proceed in a deficit situation." The court concluded that NMFS had required "relatively small steps, minor improvements and adjustments -- when the situation literally cries out for a major overhaul." (Idaho v. NMFS, at 900).

#### **8. Implementation and Outcome**

Resistance to in-river changes in both basins appears to be hindering planned recovery implementation. In both basins, as implementation flounders, the extinction crisis becomes more imminent.

In the Colorado River Basin, the pace of implementation under the RIP/RAP has been far slower than originally projected. (Cheever at 71; see also Bolin). Critics maintain that the Recovery Program has done little to improve the well-being of fish, and that fish populations have decreased since the RIP was developed. States have resisted gaining instream flows as contemplated by the RIP (see Lochhead at 13), and consequently planned instream flows have not been gained. (Hopfl at 5). Several RIPRAP items of high priority, including actions to provide flows in critical reaches, are behind schedule. (Lochhead at 15) The Regional Director of USFWS has indicated some doubt as to whether the RIP could continue to serve as a reasonable and prudent alternative. (Lochhead at 15).

In the Columbia River Basin, the reasonable and prudent alternatives contained in the hydrosystem biological opinion are not being adhered to by federal river managers. (Swisher). Citizens recently filed suit to force the Army Corps of Engineers to comply with the terms of the recently

issued biological opinion for the hydrosystem. At the same time, federal river operators are contesting the applicability of the Council's plan issued under the Northwest Power Act, a plan which calls for more in-river changes than the NMFS recovery plan. (Spigal, symposium at 410). The Council is in the process of seeking an executive order directing these river management agencies to act consistently with its program. (Brandt).

### **C. Lessons Gained From Recovery Process**

The ESA, through section 7, is the first federal statutory law which forces sustained scrutiny of the river management system by another federal agency -- NMFS in the Columbia River Basin and USFWS in the Colorado River Basin. Yet in both basins, the ESA's application came after most of the offending projects were completed. While the mandate of the Act is clear -- that no federal agency will take action to jeopardize a listed species -- the political current against which the Act applies is swift and powerful. In both basins, the ESA forms a statutory overlay to a complex system of state compacts and Congressional authorization statutes which favor federal and commercial interests with vested economic stakes in the "developed" river system. Outright exemptions from the ESA have been sought by state water agencies and municipal and agricultural water appropriators in the Colorado River Basin, and by hydropower interests and transportation interests in the Columbia River Basin.

The intense political pressure mounted by these vested interests has weakened application of the ESA in the basins. Tension in the Colorado River Basin led to a consensus-based recovery program, while it has led to a continuing stale-mate in the Columbia River Basin. In neither basin has the Service enjoyed the political autonomy necessary to fully implement the act's mandate. Not at all surprisingly, the

ESA has not been effective in achieving recovery in either basin. Both the Snake River salmon and the Colorado native fish now hover just 5-10 years from extinction.

An overriding lesson gained from comparing recovery efforts in both basins is a broad one concerning the role of federal regulatory agencies in implementing environmental mandates. Agencies such as USFWS and NMFS are vested with broad discretion under section 7 on the assumption that they will exercise their professional judgment according to the criteria set by Congress, not according to political persuasion exerted by special interests. The faith in agency neutrality -- however idealistic -- underlies the federal system of administrative law, and excessive politicization of agency decisions threatens that integrity of the entire process. Intense pressure from powerful interest groups is likely to produce a recovery process which simply perpetuates the status quo.

The role of courts in ESA implementation is a vital one because courts, while not able to substitute their judgment for that of the agency, can and do set parameters which force agencies to more faithfully carry out their mandates. In the case of both river basins, citizens have called upon the courts to force the Services to carry out their mandatory obligations under the ESA. In the Columbia River context, courts addressing salmon recovery under both the ESA and the Northwest Power Act have suggested an increased role for state and tribal agencies in determining river management. Courts have severely criticized both NMFS and the Council for making decisions which perpetuate the status quo.

The recovery plan process offers promise of a broad-based, ecosystem approach to basin-wide threats to species, and it undoubtedly creates economic flexibility in devising strategies for conserving species. (Cheever). It may also

offer a regulatory means to more fairly allocate the conservation burden among the many sources of mortality. At the same time, the breadth and long-term nature of recovery planning renders the process even more vulnerable to undue political influence. The challenge ahead in both the Colorado and Columbia River basins will be to ensure that the recovery process is not co-opted by the same vested interests that precipitated the extinction crisis in the first place.

Recent judicial opinions from the Columbia River Basin reflect a sense of the scope of recovery measures necessary to restore fish populations. The district court of Oregon underscored the need for a "major overhaul" of the Columbia River hydrosystem. (Idaho v. NMFS). In light of the very short survival time-frame facing both the Colorado native fish and the Snake River salmon, only the sweeping and bold remedies offered by courts may provide the relief necessary to save the species from extinction. Recent commentary has explored the availability of judicial review for recovery plans under the ESA, but this judicial terrain remains largely untested in practice. (Cheever).

Judicial enforcement of the ESA often invokes criticism that court-ordered relief is abrupt and all-encompassing, bringing an unanticipated halt to all activity in certain economic sectors. Courts asked to enforce the consultation requirements of section 7 may issue broad injunctions against agency actions pending compliance with the ESA's requirements. Shutdowns of entire forests in the Pacific Northwest and the Southwest in the last five years demonstrate the powerful effect of such judicial remedies. Yet at the same time, such environmental victories have fueled unprecedented antagonism towards the ESA and its purposes, and has precipitated a set of back-door Congressional attempts to weaken the implementation of the



act through exemption riders attached to appropriations bills.

One largely unexplored direction is to create a meaningful judicial enforcement role in the broad recovery planning process while using the flexibility of a court's equitable relief powers to fashion a remedy which both carries out the mandates of the ESA but is workable in practice. Experience with Columbia River Basin salmon harvest management offers some promise in this area. The Columbia River harvest allocation scheme which derives from the landmark treaty fishing cases, *Sohappy v. Smith* and *United States v. Oregon*, provides a model co-management framework in which multiple state and tribal governments implement the judicial mandate in a complex natural setting. The court maintains a continuing role in supervising the scheme, which ensures that the process maintains more integrity than it would if left to the political processes of the basin. The participation of several state, tribal and federal agencies ensures a pluralistic approach to scientific determinations. In the broad context of recovery planning under the ESA, a court could set firm mandates establishing recovery levels and mileposts for projected tasks, but the implementation process could incorporate an element of consensus-building similar to the Colorado experiment.

#### **V. Conclusion: Towards the Normative River**

The recovery programs in the Colorado and Columbia River Basins, while operating in vastly different biological, economic, and cultural contexts, do provide lessons for the ESA generally. In neither context has the ESA process produced adequate in-river changes necessary to recover the fish, quite likely due to the intense political conflicts surrounding the agencies' implementation of the Act.

In general, the ESA can be fairly evaluated only if it has been fully implemented according to Congressional design. As other scholars have demonstrated well, the ESA has suffered from a lack of implementation and enforcement by both NMFS and USFWS since its original enactment over 20 years ago. (Houck). The current debate over ESA reauthorization should confront this systemic failure, because it is doubtful that any statutory replacement for the ESA would provide any greater species protection if underlying problems of administrative accountability are not resolved.

A persistent theme in ESA implementation generally is the resistance towards disturbing the status quo. In the Colorado and Columbia River Basins, the ESA confronts perhaps a more entrenched system of natural resource management than anywhere else in the country -- a system which produced the "developed rivers" so lethal to fish survival. Yet Congress anticipated that bold changes to ecosystem management would be necessary to recover imperiled species such as the Colorado native fish and the Columbia Basin salmon. The ESA begins with an admission of the kind of short-term decision-making which led to the biodiversity crisis in both basins: "Congress finds and declares that -- various species of fish, wildlife and plants in the United States have been rendered extinct as a consequence of economic growth and development *untempered by adequate concern and conservation.*" 16 U.S.C. 1531(a) (1) (emphasis added).

To recover the species, management of the rivers must enter a new era of restoration, perhaps best expressed by the new "normative river" paradigm. The ESA provides, in its recovery planning process, ample regulatory tools for engaging in region-wide planning to effectuate the paradigm shift in a way which fairly allocates the conservation responsibility among all contributing sources of mortality.

Not only is the broad ecosystem focus imperative to protect species throughout their life-cycle, but it also offers new opportunities for economic reform to benefit a broader public in the two basins. Accomplishing any success in this process, however, will likely require a continued judicial role.

In the final analysis, the ESA is designed to force a necessary, but difficult transition. The focus on endangered species and their ecosystems necessarily creates renewed attention to the aboriginal river conditions as they once existed in the basins just two human generations ago. In that sense, the ESA inevitably pits the "endangered river" against the "developed river," because restoring a more natural, sustainable environment will entail undoing some of the "progress" of the past, reallocating economic benefits from river operations, and trimming some of the human excesses encouraged by the water projects. (Garner and Ouellette).

And yet, the ESA confronts an entrenched mindset of river operators and the Services which regards the projects as an intractable part of the status quo -- so much so that existing projects are treated as part of the environmental baseline of the "developed river." (Idaho v. NMFS; Hansen). As the author William Dietrich notes, the dams are "so monumental as to seem immovable, so permanent as to make us prisoners of our own logic." (Dietrich at 399).

But the imminence, finality, and sweeping reach of pending extinctions in both basins forces a reflection on the relative timeframes bearing upon the existence of humans and species alike, and this in turn may inspire a new vision. Native fish species have existed for 3 million years in the Colorado Basin and 5 million in the Columbia Basin. They are facing perhaps their last 5-10 years on earth. The projects

are less than a century old. Viewed against these time frames, the transition back to more normative conditions appears within the rivers' reach.

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