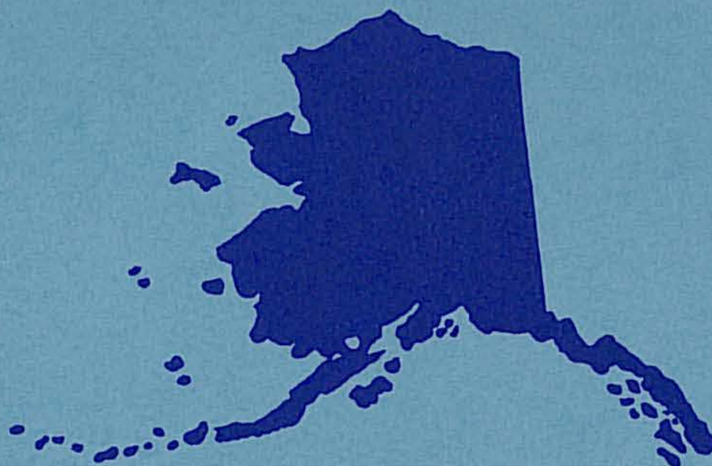
University of Alaska

INSTITUTE OF WATER RESOURCES



ANALYSIS OF ALASKA'S WATER USE ACT AND ITS INTERACTION WITH FEDERAL RESERVED WATER RIGHTS

Analysis of Alaska's Water Use Act and its interaction with Federal Reserved Water Rights
Harold J. Curran
Linda Perry Dwight

by

Harold J. Curran

and

Linda Perry Dwight

Report IWR-98 February, 1979

ANALYSIS OF ALASKA'S WATER USE ACT

INSTITUTE OF WATER RESOURCES

University of Alaska

Fairbanks, Alaska 99701

ANALYSIS OF ALASKA'S WATER USE ACT AND ITS INTERACTION WITH FEDERAL RESERVED WATER RIGHTS

Harold J. Curran

Arctic Environmental Information and Data Center
University of Alaska

Linda Perry Dwight

Arctic Environmental Information and Data Center
and
Institute of Water Resources
University of Alaska

Institute of Water Resources
University of Alaska
Fairbanks, Alaska 99701

Report IWR 98

February, 1979

ACKNOWLEDGEMENTS

The work upon which this report is based was supported by funds (Project A-059-ALAS) provided by the U.S. Department of Interior, Office of Water Research and Technology, as authorized under the Water Resources Research Act of 1964, as amended.

The authors wish to thank the following individuals for reviewing the report: Ann Prezyna, Water Management Section, Alaska Department of Natural Resources; Robert Mintz, Trustees for Alaska; Douglas Kane, Institute of Water Resources, University of Alaska; and Michael White, Yegge, Hall, and Evans.

TABLE OF CONTENTS

ABSTRACT i
PREFACE ii
INTRODUCTION 1
    Background 1
    Historical Development of the Water Use Act 4
WATER USE ACT AND ITS PRESENT REGULATIONS 4
    Existing Rights 4
    New Rights 5
    The Past Twelve Years 8
    Reorganization 9
    Special Appropriation 9
    Overlapping Jurisdiction of State Agencies 10
    Environmental Procedures Coordination Act 13
    New Regulations 14
    Defunct Exemption 15
    Conditions and Certificates of Appropriation 16
    Public Comment 17
    Maintenance of Minimum Stream Flow 17
FEDERAL RESERVATION OF WATER 18
    Background 18
    Military Reservations 19
    Quantification of Federal Reserved Rights 20
    Alaska Constitution's General Reservation for
        Fish and Wildlife 22
    State Proprietary Power over Water 22
    State Management of Water on Public Lands 24
    State Management of Water on Reserved Lands 26
    Minimum Stream Flows and the General Reservation for
        Fish and Wildlife 27
    Summary 29
BIBLIOGRAPHY 31

ABSTRACT

Since the passage of Alaska's Water Use Act in 1966, the amount of water required by Alaska's growing population and resource development has increased very rapidly. The need to review the adequacy of existing water use laws and their administration has been expressed both by those trying to comply with regulations and by those attempting to enforce standards and permit requirements. This report summarizes the historical development of the doctrine of prior appropriation in Alaska. The statutory authority, regulations, and administration of Alaska's Water Use Act by the Alaska Department of Natural Resources are presented. Overlapping state agency authorities are discussed, and existing and proposed regulations are analyzed. The application of federal reserved water rights to Alaska and the status of quantification of these rights is explained. The report presents options for the State of Alaska to manage water use on federal lands, and for preserving minimum stream flows for maintenance of fish and wildlife habitats.

PREFACE

The objectives of this research project, a review of Alaska's water law and administration, were to examine present water rights legislation, regulations, and administration; to identify potential conflicts and gaps in existing legislation and administrative procedures; and to recommend legislative and regulatory alternatives.

The investigators collected pertinent statutes, administrative codes, and permit requirements. They met with agency officials in Anchorage, Fairbanks, Juneau, and Soldotna. Staff from the Alaska Departments of Environmental Conservation, Fish and Game, Law, and Natural Resources provided information on administrative practices and problems. Case law was reviewed to trace the historical development of Alaska's doctrine of prior appropriation.

The investigators attended hearings conducted by the Alaska Department of Natural Resources on proposed changes to the water use regulations. Staff in the Water Management Section have already acted on recommendations which clarify some sections of the proposed regulations. This report contains additional recommendations for the State of Alaska to administer appropriation of water.

INTRODUCTION

Alaska's Water Use Act is a legislative embodiment of the doctrine of prior appropriation. A review of the historical development of water law and the appropriation doctrine is helpful in understanding the act.

Background

In the United States two legal systems for the allocation of surface water have evolved, the riparian doctrine and the doctrine of prior appropriation. The eastern states originally adopted the riparian doctrine from English common law (law based on court decisions as opposed to legislative enactment). Since then, the doctrine has evolved and now allows all riparian proprietors (those who own land bordering a river, stream, or lake) on the same waterbody to share the use of its water. No one can use the water to an unreasonable extent.

The concept of prior appropriation was used extensively by the gold miners who flocked to California in 1849, where the water supply was limited relative to the amount required for mining. The doctrine held that "a prior appropriator of water (one who _first_ puts water to _use_) from a stream for the purpose of working a mining claim was protected against later appropriations" (Powell, 1949, Vol. 5, p. 442). This doctrine was soon expanded to include economic uses other than mining. In 1885 the California Supreme Court made this the common law of California. The riparian doctrine could not apply because the miners were trespassers on public land (land which was owned by the United States), and a necessary element of riparian rights was _ownership_ of land contiguous to a waterway (_Irwin v. Phillips_, 5 Cal. 140 (1885)).

> In both riparian and appropriative doctrines, a water right is regarded as "usufructuary", a right to use and not an interest in the corpus (body) of the water supply. But riparian rights originate from landownership and are dependent upon physical location, i.e., contiguity of land to a body of water. Appropriative rights do not depend upon landownership. They are acquired

> by actual use of the supply and do not exist without such utilization. Riparian rights, in contrast, remain "vested" (fixed, accrued) though unexercised . . . (For appropriation) "first in time, first in legal right" governs. Riparians are "correlative co-sharers in uncertain quantities" (Clark, 1967a, Vol. 1, p. 299).

Prior appropriation was sanctioned by the United States on public lands in an act of 1866 which provided:

> That whenever, by priority of possession, rights to water for use of mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of the courts, the possessors and owners of such vested rights shall be maintained and protected in the same (Trelease, 1967a, p. 7 citing Ch. 262, Section 9, 14 Stat. 251, 253 (1866), 43 USC Section 661).

The doctrine of prior appropriation spread throughout the West and came to Alaska via Oregon, whose laws relating to real estate were made applicable to the District of Alaska (Revenue Mining Co. v. Balderston, 2 Alaska 363 (1905)).

Riparian and appropriative rights coexist in many western states, and only a few states have an appropriation doctrine with no provision for riparian rights. In the early twentieth century, it appeared that both the riparian and prior appropriation doctrines would be applied in Alaska. The U.S. Ninth Circuit Court of Appeals determined that the riparian doctrine did not apply (Van Dyke v. Midnight Sun Mining & Pitch Co. 177 Fed. 85 (9th Cir. 1910)). After Alaska became a territory in 1912, one aspect of the riparian doctrine was recognized by the territorial legislature. In 1917 it enacted a statute which gave the locator of any mining claim that included both banks of a stream the right to use as much water as necessary for working the claim.

The doctrine of prior appropriation did not cover groundwater use in all western states, and several jurisdictional variations developed. In 1953 the English rule of "absolute ownership" of groundwater was applied to Alaska by a federal district judge (Trillingham v. Alaska

Housing Authority 14 Alaska 202, 203, 109 F. Supp 924, 925 (1953)). Therefore a party had no cause of action against another for diminishing a supply of underground water "because percolating waters, being a part of a freehold, may generally speaking, be used by the owner as he sees fit" (Trillingham v. Alaska Housing Authority, supra).

The doctrine of prior appropriation, the limited riparian right for miners who owned both banks of a stream within their claim, and "absolute ownership" of groundwater constitute the legacy of water use law left by the Territory of Alaska to the State of Alaska. This legacy was modified as explained below by the constitution of Alaska and the Water Use Act. The modification eliminated the vestiges of the riparian and "absolute ownership" rules and added a permit system to the doctrine of prior appropriation.

A majority of Alaskans were anxious to be admitted to the Union, and so prior to admission, a constitution was adopted on February 1, 1956. It was ratified by the people of the Territory on April 24, 1956, and became law when Alaska was admitted to the Union in 1959. The Alaska Constitution contained the following sections in Article VIII.

> Section 3. Common Use. Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use.
>
> Section 13. Water Rights. All surface and subsurface waters reserved to the people for common use, except mineral and medicinal waters, are subject to appropriation. Priority of appropriation shall give prior right. Except for public water supply, an appropriation of water shall be limited to stated purposes and subject to preferences among beneficial uses, concurrent or otherwise, as prescribed by law, and to the general reservation of fish and wildlife.

Common use was to be implemented through the doctrine of prior appropriation. This doctrine, as explained above, bestowed upon the first appropriator of water a priority of right over subsequent appropriators.

Historical Development of the Water Use Act

In 1961 Governor William A. Egan called for a comprehensive water code covering all aspects of water problems, before the problems arose. The commissioners of the Alaska Departments of Health and Welfare, Natural Resources, Fish and Game, and Public Works employed Frank J. Trelease as a consultant to draft a comprehensive water code to fit the state's needs. On January 12, 1962, the final report, A Water Code for Alaska, a Report to the State of Alaska, was submitted. It contained six articles: 1) Organization, Administration, and Coordination, 2) Appropriation and Use of Water, 3) Water Pollution and Quality Control, 4) Conservation of Public Waters, 5) Drainage and Flood Control, and 6) Water Conservancy Service Areas.

The Code was immediately reframed as a bill and introduced to the legislature. It failed to pass. A scaled down bill finally emerged in 1966 covering appropriation and use of water. The Water Use Act, AS 46.15.010-270, gave statutory definition to the doctrine of prior appropriation mandated by the constitution.

WATER USE ACT AND ITS PRESENT REGULATIONS

The Act applied to all waters of the state, ground and surface, not subject to superior federal rights. It established a procedure for maintaining existing rights and obtaining new rights. The power to determine and adjudicate rights in the waters of the state and to administer the act was delegated to the Alaska Department of Natural Resources (DNR) (AS 46.15.010). The commissioner's authority and duties included the mandate to adopt regulations to carry out the provisions of the act (AS 46.15.030(b)(1)). Regulations were adopted by the commissioner and became effective on February 8, 1967.

Existing Rights

Existing rights were defined by the act and regulations. Rights recognized as of July 1, 1966, included the following:

1. the use of water by the holder of a mining claim that included within the claim boundaries both banks of a stream from which the water was taken;

2. the use of water following the posting of a notice of appropriation at the point of diversion, the construction of a means of diversion, and the recording of a notice of appropriation;

3. the beneficial use of water during the period from July 1, 1961, to July 1, 1966;

4. the construction of a means for diverting water to a beneficial use if the construction was in progress on July 1, 1966 (11 AAC 72.010).

The final dates for filing declarations of appropriation with the recording districts were March 27, 1967, for Kodiak; May 31, 1967, for Seldovia, Homer, Kenai, and Seward; July 31, 1967, for Anchorage, Palmer, and Whittier; October 31, 1969, for all Southeast Alaska; and April 30, 1968, for Cordova, Nome, Fairbanks, and the remainder of the state. The procedure to create existing rights was as follows. Anyone claiming existing rights filed a declaration of appropriation with the commissioner of DNR. A preliminary determination as to the validity of the right was made by the commissioner. Notice was sent to each person who filed within a specified area of the determination. Any person aggrieved by the determination had 20 days to request a hearing. Either after the 20-day period expired or, if a hearing was requested, after the hearing, the commissioner issued or denied the certificate of appropriation (AS 46.15.135).

All declarations received subsequent to the final cutoff dates were treated as an application for a permit. Many of the filed declarations have still not been adjudicated.

New Rights

The statutory procedure for obtaining new rights is similar to that for existing rights. Application for a permit to appropriate is made with the commissioner of DNR. Appropriation is defined as the diversion, impounding, or withdrawal of a quantity of water from a water source for

a beneficial use (AS 46.15.260(2)). After an application is received, the commissioner gives notice to all pertinent parties and gives them the opportunity to file objection and have a hearing on their objection, if appropriate (AS 46.15.070). Within 30 days after receipt of the last objection (or after conclusion of the hearing) the commissioner denies or grants the permit. If the permit is granted, the commissioner may attach conditions. A person aggrieved by the commissioner's decision may appeal to superior court (AS 46.15.080).

In the regulations, the powers and duties of the commissioner are delegated to the director of the Division of Forest, Land, and Water Management (AS 46.15.020(3)). Two more steps are required before review by superior court is allowed. Any person aggrieved by the director's initial decision has 30 days after date of mailing the decision to request that the director reconsider (11 AAC 72.250). If the director's final decision is unfavorable, the aggrieved person may appeal to the commissioner of DNR within 30 days after the mailing of the decision. After the commissioner makes a decision, the aggrieved party may appeal to superior court.

For the sake of clarification, it should be pointed out that the decisions handed down by the director and the commissioner are administrative decisions by an executive agency with judicial effect. The executive agencies are directly limited by their enabling legislation and the state constitution. They cannot legally exceed this authority. Their regulations must be authorized by the enabling legislation and, in theory, cannot expand the power of the agency.

Another important maxim of administrative law is that all administrative remedies must be exhausted before any administrative decisions may be reviewed by the judiciary. Therefore, not only is an aggrieved party required to make objection to the director, appeal to the director, and appeal to the commissioner before appeal to the judiciary is allowed; but also, if any of the 30-day time limits are exceeded, all further appeals will be denied.

After a permit is issued, a party may begin whatever construction is necessary to appropriate water (AS 46.15.100). The right to appropriate water is perfected (free from any valid legal objections and defensible against all parties) once the water has been put to beneficial use, the commissioner of DNR has been notified in writing, and a certificate of appropriation has been issued (AS 46.15.120).

The certificate must be filed for record in the office of the commissioner and recorded at the appropriate recorder's office (AS 46.15.160). The appropriative right is "appurtenant" to the land, which means that if the land is sold, then title to the right transfers with the land. Also, the right may be abandoned or forfeited only upon declaration by the commissioner. Abandonment is the intentional failure to beneficially use the water, and forfeiture is the voluntary failure to use the water for five successive years (AS 46.15.140).

The actual procedure for obtaining a permit is not set out in the act or the regulations. Application is made on a four-page form developed by the Water Management Section of the Division of Forest, Land, and Water Management. The Division's district offices in Fairbanks, Anchorage, and Juneau take applications for permits.

The application may be mailed, but personal contact provides the opportunity to clear up any questions that might arise concerning the application. Application for 5000 gal/day or less requires a $10 fee. If more than 5000 gal/day is requested, the filing fee is $20. The application is assigned a serial number and recorded on land status plats.

The district office notifies prior appropriators by certified mail and prepares an advertisement for public notice in one issue of a local paper. The applicant must deliver the advertisement to the newspaper by a specified date, or the file will be closed. The ad is paid for by the applicant and the newspaper furnishes the district office with a copy of the published notice and an affidavit of publication. Once the notice period has expired, any objections or hearings have run their

course, and other considerations such as public interest have been addressed, a permit is issued. At this time the applicant may legally begin construction to divert water. Actually, because of the delay in issuing permits, the construction is often completed and the water is being used prior to issuance of a permit. If the water is already being used, the permit and certificate are issued as one document.

The Past Twelve Years

Frank J. Trelease envisioned the Water Use Act as an effective tool to manage the waters of Alaska and avoid many of the problems confronting the states in the Lower 48 (Trelease, 1967a, p. 2). Although the act itself provided sufficient tools, there has never been adequate funding or staff to manage the use of water in the state.

Initially, a Water Resources Section with three people was established in the Division of Lands. They were inundated with declarations of appropriation, some of which have still not been processed. On top of this, the number of pending applications has continued to grow. With this tremendous backlog it was difficult, if not impossible, to determine how much water was being appropriated, how much was available for appropriation, or what effect an appropriation would have on water or other resources.

Oil development and the resulting population growth aggravated these problems. The effects of limited management began to manifest themselves. Groundwater sources in Anchorage and Kenai and near Fairbanks have become critical. In 1975 there was a temporary water crisis on the North Slope, when a water source for Prudhoe Bay was possibly overpumped and its fish endangered.

DNR's Planning and Research Section hired Frank J. Trelease to do a report on water resources planning and administration. The report, Recommendations for Water Resources Planning and Administration, was completed in February of 1977. It listed some of the present and future problems in water resource management. At the time the report

was published, the Water Resources Section of the Division of Lands was still undermanned, resulting in a large backlog of applications for permits and declarations of existing rights. Other problems included overlapping jurisdictions of other state agencies and out-of-date regulations. There have been legislative and administrative efforts to address these problems.

Reorganization

The Water Resources Section of the Division of Lands was reorganized in January, 1978, when the Water Management Section was established in the Division of Forest, Land, and Water Management. Permit applications are made at one of the Division's three district offices, where the permit is processed. The permits are issued after review by the Water Management Section in the Division's central office. Standard operating procedures are being developed so that actions in each district will be more uniform and coordinated.

Special Appropriation

The 1978 Alaska Legislature provided a special appropriation of $1,200,000 to the Division of Forest, Land and Water Management for one year. Approximately 25 percent of the funds have been used to hire additional staff to clear the 12-year backlog of water cases. In the Southeast and Northcentral Districts, the backlog is being reduced so that all permits will be processed within 12 months of receipt. In the Southcentral District, reduction will not be as complete; the aim is to process all declarations of appropriation. Once this extremely time-consuming procedure is finished, the expanded staff can probably bring the permit backlog under control. Despite expanded staffing, the number of backlogged permits is growing in the Southcentral District (Mary Lu Harle, Alaska Department of Natural Resources, Personal Communication, November 13, 1978).

Overlapping Jurisdiction of State Agencies

The Alaska Department of Fish and Game (ADF&G) was established in 1959 and its authority is described in Title 16 of the Alaska Statutes. AS 16.05.870, protection of fish and game, states that the commissioner shall "specify the various rivers, lakes, and streams or parts of them that are important for the spawning or migration of anadromous fish" (AS 16.05.870(a)), and that "if a person or governmental agency desires to construct a hydraulic project, or use, divert, obstruct, pollute, or change the natural flow or bed of a specified river, lake, or stream, or use wheeled, tracked, or excavating equipment or log-dragging equipment in the bed of a specified river, lake, or stream, the person or governmental agency shall notify the commissioner of this intention before the beginning of the construction or use" (AS 16.05.870(b)). The commissioner can require the person or governmental agency to submit plans, including plans for the protection of fish and game during construction or use. The commissioner can further require that written approval be obtained from him on the adequacy of the plans before construction or use begins (AS 16.05. 870(c)).

The regulations to administer Title 16 of the Alaska Statutes are contained in Title 5 of the Alaska Administrative Code. Waters important to anadromous fish, 5 AAC 95.010, states that "waters included on this list are brought within the conservation and protection provisions of AS 16.05.870-16.05.900." This regulation is carried out by means of an Anadromous Fish Protection Permit, which must be obtained prior to commencing certain activities in a designated anadromous fish stream. Those activities are listed in AS 16.05.890(b). An applicant must notify the appropriate ADF&G Regional Habitat Supervisor on a Waterway/Waterbody Use Request form. The applicant must also submit: plans and specifications for the proper protection of fish and game; the project schedule; a list of materials, methods, and equipment proposed for use; and a map of the project site and its description. ADF&G will act on the application within 30 days of its receipt, and the permit is issued on an annual basis. Renewals are made by specific request only.

The Alaska Department of Environmental Conservation (DEC) was established in 1971 and its authority is described in Title 46, Chapter 3, of the Alaska Statutes. DEC is authorized to adopt pollution standards (AS 46.03.070) and water quality standards (AS 46.03. 080). Any person who "conducts a commercial or industrial operation which results in the disposal of solid or liquid waste material into the waters of the state must procure a permit from the department before disposing of the waste material" (AS 46.03.100). The procedures for obtaining the discharge permit are described, and "no permit may be effective for a period in excess of five years from the date of issuance" (AS 46.03.110). Furthermore, DEC may "terminate a permit upon 30 days written notice if the department finds (1) that the permit was procured by misrepresentation of material fact or by failure of the applicant to disclose fully the facts relating to its issuance; (2) that there has been a violation of the conditions of the permit; (3) that there has been a material change in the quantity or type of waste disposed of" (AS 46.03.120(a)). Finally, DEC may "modify a permit if the department finds that a material change in the quality or classification of waters of the state has occurred" (AS 46.03.120(b)). Two other sections reinforcing DEC's authority are AS 46.03.710, pollution prohibited, and AS 46.03.800, water nuisances.

The administrative procedures are detailed in a number of chapters under Title 18 of the Alaska Administrative Code. The water quality standards are in the process of being revised, but at present, the water quality that must be maintained in a particular surface water body is designated by its use (18 AAC 70.020). However, the only surface waters in the state which have been classified by use are Ship Creek in Anchorage, and the Chena River near Fairbanks. Thus all other surface waters are "suitable to serve all classifications established" (18 AAC 70.050). But, "if the waters have more than one classification, the most stringent water quality criterion of all the classifications shall apply" (18 AAC 70.030(1)). The regulations do note that "waters may have natural characteristics which would place them outside the criteria established by this chapter", however, the criteria established "apply to man-made alterations to the waters of the state" (18 AAC 70.040).

To obtain the Waste Water Disposal Permit, an applicant must submit a completed form with descriptions of the treatment used, the operations, and the disposal site. Additional data on the environment and the facility may be required. Applications are to be submitted 60 days prior to the commencement of operations, and after receiving the application, DEC will issue public notices. Public hearings are not necessary but they may be held if demanded by public interest. DEC notifies the Alaska Departments of Fish and Game, Health and Social Services, Commerce and Economic Development, and Natural Resources for their review and comment. The permit may be issued for a period not to exceed five years. Renewal of the permit must be on request by the permittee 30 days prior to the permit expiration. Waste Water Disposal Permit renewal applications must be submitted in the same manner as an initial application.

Since the U.S. Environmental Protection Agency must issue the National Pollutant Discharge Elimination System (NPDES) Permit for wastewater discharge, DEC may waive the procedural requirements for issuing a Waste Water Disposal Permit and may adopt the NPDES Permit as the required state permit. This is the current practice, but DEC will soon process all NPDES permits (Robert Flint, Alaska Department of Environmental Conservation, Personal Communication, October 24, 1978).

A developer who wishes to divert water from an anadromous fish stream, use it in such a manner that its quality is altered, and return it to the stream must obtain a water use permit from DNR, an anadromous fish protection permit from ADF&G, and a wastewater discharge permit or NPDES permit from DEC or EPA respectively.

The problem of overlapping jurisdiction of the water permits from DNR, DEC, and ADF&G has two legislative solutions. The Water Use Act provides that application with the commissioner of DNR for a water use permit is to be considered as simultaneous application with DEC and ADF&G for a wastewater discharge permit and an anadromous fish protection permit (AS 46.15.040). Under AS 46.15.080(b), the commissioner of DNR, prior to issuing a permit to appropriate water, is to consider the

public interest including the effect on fish, game, recreation, navigation, and public health. Also, DNR permits may include conditions, terms, restrictions, and limitations to protect the public interest. This legislation could have been administered to turn the application for the three permits into a single-permit procedure. The condition(s) of ADF&G and possibly DEC could have been included in a DNR water use permit and subsequent certificate of appropriation. Unfortunately, these agencies have not worked well together in the past. This, coupled with the varying length of time each agency spends in processing permits, has undermined a single-permit procedure. DNR is currently in the process of negotiating a Memorandum of Understanding with DEC and ADF&G to address these deficiencies (Ann Prezyna, Alaska Department of Natural Resources, Personal Communication, January 26, 1979).

Environmental Procedures Coordination Act

In 1977, the Alaska Legislature recognized that the multiplicity of permits puts an undue burden on the public. The Environmental Procedures Coordination Act, AS 46.35.010-210, was passed to establish a simplified procedure to assist the public in obtaining state permits. A master application may be submitted to DEC requesting the issuance of all air, land, and water permits necessary to construct and operate a project (AS 46.35.030(a)). DEC forwards it to appropriate state agencies with a date by which the agency must respond (AS 46.35.030(b)), not exceeding 15 days from receipt (AS 46.35.030(c)). If the agency is interested, it informs DEC which of its permit programs are pertinent to the project described in the master application (AS 35.030(c)(2)). DEC then sends the applications for the permits to the applicant, who must return them to DEC for transmittal back to the state agency (AS 46.35.030(e),(f)). In most cases, the state agencies must send their final decision on the application to DEC within 90 days of the last published notice of the project or within 90 days of the public hearing (AS 46.35.070).

As of January, 1979, a master application form has not yet been developed, and there are no regulations for administering the act.

However, DEC has established permit information centers in Anchorage and Juneau and informs applicants of required permits as well as coordinating the application process (Robert Flint, Alaska Department Environmental Conservation, Personal Communication, January 25, 1979).

AS 46.35.040, Withholding Final Permit, may expedite DNR's adjudication process.

> When it appears that the applicant does not own or control the land or water necessary for the siting of the project in the master application, the department (DEC) shall continue the proceedings under this chapter but may withhold the final permit until the applicant has obtained ownership or control of the land or water necessary for the site of the project. If the applicant has applied for land or water necessary for the siting of the project from the state or a municipality of the state, the state agency or municipality shall promptly adjudicate the application for the land or water filed by applicant.

However, it is possible for DNR to avoid adjudication and for the project to proceed. Any agency not responding to DEC with an expression of interest in the master application by the specified date may not subsequently require a permit (AS 46.35.030(d)). Since DEC may withhold the final permit until the applicant obtains the certificate of appropriation, and since the certificate will not be issued by DNR until a water use permit is granted, there is a potential conflict in the act.

New Regulations

The present regulations exempt domestic uses of 1000 gallons/day or less and, as discussed above, establish a cumbersome appellate (appeal) process. They fail to create construction standards for wells, dams, or other structural means of obtaining water approved under an appropriation. Nor do they require well drillers to file well logs with DNR or one of its divisions. Furthermore, the cutoff date for declarations of appropriation is not specified.

DNR's Division of Forest, Land, and Water Management is presently going through the process of adopting new regulations that address most

of the above deficiencies (11 AAC 93.010-370). These new regulations eliminate the 1000-gallon/day exemption (11 AAC 93.320), establish a simplified appellate procedure for persons aggrieved by the decision on their application (11 AAC 93.300), create construction standards for dams (11 AAC 93.150-200), require well contractors to file well logs with DNR (11 AAC 93.140), and establish the cutoff date for declarations of appropriation (11 AAC 93.020). Also, regulations allowing conditions to be attached to permits and certificates of appropriation are proposed. One of the reasons specifically stated in the regulations for this management tool is to guarantee minimum stream flows for the protection of fish and wildlife, recreation, navigation, water quality, and any other purpose of substantial public interest.

These new regulations do raise some interesting questions. When the exemption for domestic use of 1000 gallons or less per day becomes defunct, what will be the status of those who have used the exemption? Is there statutory authority to attach conditions to the certificate of appropriation? Shall minimum stream flows continue to be maintained on a case-by-case basis or shall a minimum flow be established which, when encroached upon, triggers a further inquiry as to whether or not a permit is to be issued?

Defunct Exemption

The Water Use Act and the new regulations continue the two-step procedure for perfection of water rights. First, an application for a water use permit must be submitted to a district office of the Divison of Forest, Land, and Water Management. A permit is issued only if appropriations meet the requirements of AS 46.15.080 (AS 46.15.040(b), 11 AAC 93.120). Then, once the water is put to actual beneficial use and the permit holder makes a written request to obtain a certificate, a certificate of appropriation will be issued upon notification to DNR that: the structures necessary for taking the water are completed; the water to be certified is being beneficially used; and the permit conditions are met (AS 46.15.120, 11 AAC 93.130).

The elimination of the 1000-gal/day domestic exemption from this procedure is necessary. Those using the exemption under the present regulations do not have a perfected water right (AS 46.15.040, 11 AAC 72.210). Therefore, if their water source is decreased or depleted by subsequent appropriators with perfected water rights (i.e., appropriators with a permit or certificate of appropriation), then they do not have a legal right to decrease or stop the subsequent appropriations. One problem with the way DNR proposed to eliminate the exemption is that those losing this exemption are subject to prosecution for a misdemeanor until they obtain a permit or certificate of appropriation (AS 46.15.180). Another problem in complying with AS 46.15.180 and the proposed regulations is that a permit must be obtained prior to construction of any water development project. DNR is presently attempting to reduce the time required to process an application to one year. If it takes a year to issue a permit, then all projects will be without water for at least one year. Beginning work without a permit could lead to prosecution for a misdemeanor.

Conditions and Certificates of Appropriation

Although the Water Use Act explicitly provides that conditions may be attached to permits, it is not clear that this authority extends to certificates of appropriation. AS 46.15.100 provides that "the certificate shall set out such information as the commissioner of DNR may prescribe by regulation." Alaska Statutes also state that "words and phrases shall be construed according to the rules of grammar and according to their common and approved usage. Technical words and phrases and those which have acquired a peculiar and appropriate meaning, whether by legislative definition or otherwise, shall be construed according to the peculiar and appropriate meaning" (AS 01.10.040). The common and approved usage of information does not include "condition", and it was not so defined in the act. Therefore, it does not appear that the act grants this authority to DNR. The Water Management Section is presently attaching conditions to the certificates of appropriation. Yet DNR's authority to do this is suspect because the Water Use Act does not empower DNR to condition certificates (Rogers, 1977, p. 12). An amend-

ment to AS 46.15.120, Certificates, which would grant this authority has recently been submitted (Ann Prezyna, Alaska Department of Natural Resources, Personal Communication, January 26, 1979). This is an essential management tool which will allow DNR to guarantee the public interest and still maximize development. The other alternatives for DNR are to continue to condition certificates under questionable authority, or manage the water resources through the limited tool of discretionary denials of water permits.

Public Comment

Individual applicants and holders of permits or certificates of appropriation that might be affected and pertinent federal, state, and local agencies, and Native corporations are notified when a new application is received. The public must rely on a published newspaper notice (AS 46.15.070). However, if DNR, in addition to the above notice, establishes a mailing list which includes all parties who wish to be notified of permit applications, then there will be adequate notice to obtain public comment for case-by-case review. If a statewide plan is used, then a procedure for public comment on the plan must be incorporated. The reasons for this are numerous. A list of some of the interested parties includes Natives, miners, and fishermen. Without the input of these parties, the political viability of any plan is questionable. The practical needs of competing interests must be dealt with and the forum of public comment is a good method for itemizing and managing those needs. If the needs of the competing parties are dealt with, then the potential for litigation is decreased. Finally, the information base is expanded to include all parties interested enough to make comments.

Maintenance of Minimum Stream Flow

The maintenance of the flow or level of water in a river, stream, or lake bed is an essential management tool to preserve fish populations and to maintain water quality, navigation, and recreational values (Alaska Water Study Committee, 1976a, pp. 187-196). Presently in

Alaska, minimum stream flows are maintained via a case-by-case determination. With each permit that is granted, determination is made as to the effect on fish, wildlife, recreation, water quality, and navigation. Theoretically, if a determination is made that the issuance of a permit will be excessively detrimental to fish, wildlife, recreation, water quality, or navigation, then the permit can be denied or conditions attached to protect the appropriate categories.

DNR is seeking an amendment to the Water Use Act for the maintenance of minimum stream flows. The act now requires that there be a diversion, withdrawal, or impounding of water before water can be appropriated. Therefore, minimum stream flows cannot be appropriated. DNR wants the authority to allow the proper government agency to appropriate water for minimum stream flows. Under this method, ADF&G could appropriate minimum flows for fish and wildlife purposes, DEC could appropriate for water quality purposes, and so forth. Enforcement of the flows could then become the responsibility of the appropriating agency, thus relieving DNR of a significant administrative burden. Even though DNR's responsibility to manage water through the use of minimum flows will be delegated to the agency with the most expertise, DNR will continue to balance the public interest, rights of prior appropriators, adequacy of construction and diversion, and beneficial use of the water prior to issuing a permit (AS 46.15.080). DNR's options will be discussed further in the following section.

FEDERAL RESERVATION OF WATER

Background

As explained by Ranquist (1975, pp. 92-96), federal reservation of water, known as the Winters doctrine, was originally applied by the United States Supreme Court in Winters v. United States 207 U.S. 564 (1908). The Supreme Court held that the right to use the nonnavigable waters of the Milk River, which flowed through and bordered on the Fort Belknap Indian Reservation in Montana, was implicitly reserved by the federal government and the Indians in the treaty establishing the reser-

vation. In Arizona v. California 373 U.S. 546 (1963) the Supreme Court extended the application of the Winters doctrine from Indian reservations to other federally reserved lands including wildlife refuges, waterfowl management areas, and recreation areas. The Supreme Court finally indicated that reserved water rights may be implied for any federal lands withdrawn from the public domain (United States v. District Court for Eagle County 401 U.S. 520 (1971)).

Federal reserved water rights are created when federal lands are withdrawn from entry (by Congress or other lawful means) for federal use. Sufficient water is either explicitly or implicitly withdrawn simultaneously to accomplish the intent of the withdrawal. Characteristics of a federal reserved water right include the following: 1) it may be created without diversion or beneficial use, 2) it is not lost by nonuse, 3) its priority dates from the time of the land withdrawal, and 4) the measure of the right is the amount of water reasonably necessary to satisfy the purposes for which the land has been withdrawn (National Water Commission, 1973, p. 464). Statements 1 and 2 above mean the federal government does not have to quantify its reserved water rights as required by the doctrine of prior appropriation. In statement 4, "purposes" is a broad term which makes quantification difficult. The reluctance of the federal government to quantify its reserved rights inhibits the water management efforts of federal, state, and local governments. The high percentage of Alaska land in federal reserves and their location magnifies this problem, as is shown in the following situation.

Military Reservations

The two largest communities in Alaska, Anchorage and Fairbanks, are adjacent to military reservations. In the Municipality of Anchorage, the major water source for the Elmendorf/Fort Richardson Military Reservations and the metropolitan area is the Ship Creek watershed. Ship Creek has its headwaters in the Chugach mountains and flows through the Fort Richardson Military Reservation and the Municipality of Anchorage. A reservoir on Ship Creek, built by the U.S. Army Corps of Engi-

neers and the Municipality in 1952, supplies surface water to Elmendorf Air Force Base and Fort Richardson, and to the Municipality through the Anchorage Water Utility (AWU). This supply is augmented by city and military production wells in the watershed.

Presently, Fort Richardson has rights, recognized by DNR, to 7.5 million gallons per day (mgd) from Ship Creek, and their treatment plant is rated at 7 mgd (U.S. Army, Corps of Engineers, 1978b, pp. 52,56). Their present and projected use through the year 2025 is 4 mgd, and the military foresees exceeding 4 mgd only upon mobilization (Transcript of Metropolitan Anchorage Urban Study Meeting on Water Supply, p. 34, September 20, 1978 (R&R Court Reporting, 509 W. 3rd Avenue, Anchorage, AK.)). Therefore, the military may exercise its federal reserved water rights only under extreme conditions. The possibility of mobilization and increased water use is not even considered in the U.S. Army Corps of Engineers' Metropolitan Anchorage Urban Study (MAUS) report (1978b) on the Anchorage area's water supply and sources to the year 2025.

Furthermore, the summary report (U.S. Army, Corps of Engineers, 1978a, p. 3) states "for purposes of the study the military demand was not included. Their water system is fully developed with no forseeable need for future increase. In fact, since 1974, military water use has declined about 20 percent." Part of the reason for the MAUS study is the military has refused to consider the recommendations of a 1973 report (Tryck Nyman and Hayes, Dames and Moore, and Leeds Hill and Jewett) which advocated off-stream or recharge-withdrawal ponds for Ship Creek, because of significant potential for conflict with "military purpose" (U.S. Army, Corps of Engineers, 1978b, p. 9). An examination of this potential conflict should not have been omitted from the MAUS study. Anchorage has been close to exhausting its present water supply and needs a plan to expand its immediate and future water sources, which includes quantification of military reserved rights.

Quantification of Federal Reserved Rights

The National Water Commission, established in 1965, has made

several recommendations to the President and the Congress of the United States concerning this planning and management problem (National Water Commission, 1973, pp. 461-466). These have included the following: 1) that the United States utilize the laws of the state relating to creation, administration, and protection of water rights; 2) that the United States be joined as a party in adjudication of non-Indian water rights; and 3) that federal reserved water rights be quantified and recorded pursuant to state procedures.

President Carter, perceiving the need to cooperate with the states, issued a message to Congress on June 6, 1978. Policy initiatives concerning water were proposed to enhance federal-state cooperation and improve state planning for water resources. Following his message, the President issued a memorandum to the Attorney General, the Chairman of the Tennessee Valley Authority, and the Secretaries of Interior, Agriculture, Housing and Urban Development, and Defense requiring them to resolve reserved rights controversies in a timely and fair manner. They must identify federal reserved water rights, expedite establishment and quantification of the rights, and utilize a reasonable standard when asserting these rights.

An interagency task force (headed by Leo M. Krulitz, solicitor for the U.S. Department of Interior) has been established to implement the President's directive. Ten questions from Cecil Andrus, Secretary of Interior, have been directed to the governors of all states affected by federal reserved water rights. The questions seek each state administration's opinion on the following: the purposes for which reserved rights can be claimed; whether such use or purposes are recognizable under state law; which river basins (in which reserved rights might be claimed) are over-appropriated; whether instream flows are recognized under state law; how the federal government can use the state law to recognize federal reserved rights; whether the federal government is subject to state jurisdiction in water adjudication proceedings; what practical considerations lie in the way of expediting quantification and adjudication of federal reserved rights; how feasible are out-of-court settlements for adjudication of federal reserved rights; and what

administrative or legislative proposals will quickly define, inventory, and develop a methodology to quantify federal reserved rights.

The administrative procedure of quantifying federal reserved water rights while cooperating with the states is progressing. Which reserved rights will be quantified and the effect quantification might have is unknown. The State of Alaska had not answered these questions as of January 31, 1979.

Alaska Constitution's General Reservation for Fish and Wildlife

Whether or not federal reserved water rights are quantified, the State may significantly increase the amount of water resources over which it could have management control. The Alaska Constitution in Article VIII, Section 13, subjects the appropriation of water to the general reservation of fish and wildlife. At a minimum this enables the Alaska Legislature to pass an act authorizing the reservation of water for fish and wildlife. At a maximum the constitutional reservation is a mandate that requires reservations for fish and wildlife. The Alaska Supreme Court has made no determination to date as to whether the constitution requires or only enables the Alaska Legislature to reserve water for fish and wildlife.

Under these parameters there are several options. One option is for the State to assert that minimum flows were reserved for fish and wildlife in 1959, when the Alaska's constitution became law. The State would then have a priority date of 1959. Such a date would give the State of Alaska senior rights over waters for fish and wildlife purposes on all federal lands reserved since statehood (U.S. v. Alaska 423 F. 2d 764, 768 (D.C. Alaska, 1970)).

State Proprietary Power over Water

Federal reserved water rights are based on the power of the United States over its territory and other property (Clark, 1967b, p. 77).

> The Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States; and nothing in this Constitution shall be so construed as to Prejudice any Claims of the United States, or of Any Particular State (U.S. Constitution, Article IV, Section 3, Clause 2).

On public land, the United States may reserve land and water because of this proprietary power. Although federal reserved water rights have arisen only in conjunction with federal land reserves, there is no logical reason why Congress cannot withdraw or reserve the water alone (Clark, 1967b, Vol. 2, p. 81, ftn. 11).

The western states have advanced two theories to support state control of water, as described by Clark (1967b, pp. 100-152). One is based on the constitutional mandate of "equal footing", which requires that new states be admitted equally with the original 13 colonies. The colonies had sovereign control over water. Therefore, when a western state is admitted, the United States passes sovereignity to that state and relinquishes control of the water. However, the federal courts limit equal footing to political rights, as opposed to property rights. The rationale is that the property rights of the 13 original states vis-a-vis the United States varied, so each entered the Union on different footing. If the original states did not have equal footing, the subsequent states cannot claim it. Under this theory, the right to manage water is classified as a property right and not as the right of a sovereign (a political right).

The second theory accepts the proprietary classification of water and claims that the United States passed or conveyed this property right to the western states by a series of legislative acts. This conveyance theory is the one advocated by the State of Alaska. It is the State's position that the United States has transferred or conveyed such authority to the State (Brief for Appellee at 26, 33-34, Paug-Vik, Ltd. v. Martin, appeal docketed C.A. No. 77-17158, (Alaska Superior Court, July, 1977) citing Alaska Public Easement Defense Fund v. Andrus 435 F. Supp. 664, 677 (D.C. Alaska, 1977)). The State of Alaska bases its position

on the following: 43 USC Section 661 supra, the Organic Acts of 1884 (23 Stat. 26, Section 8) and 1900 (31 Stat. 330, Section 26) which extended 43 USC Section 661 to Alaska, and the Alaska Statehood Act (act of July 7, 1958, P.L. 85-508, 72 Stat. 339). Its position is also based on the Alaska Constitution, Article VIII, Sections 3 and 8 supra and the Submerged Land Act, which provides at 43 USC Section 311(e) that ". . . the control, appropriation, use, and distribution of waters shall continue to be in accordance with the laws of (Western) States" (Brief for Appellee, Paug-Vik, Ltd. v. Martin, supra, pp. 22-27).

Though the State's position is arguable and possibly supported by the U.S. Supreme Court's most recent decision on state management of unappropriated waters located on public lands (California v. U.S., 572 L. Ed. 2d 1018, 1030, 1040-1041, 98 S. Ct. _____ (July, 1978)), the question is not settled (Paug-Vik, Ltd. v. Martin No. 77-17158 at 16, (Sup. C. Alaska, October, 1977); Alaska Public Easement Fund v. Andrus, supra 677, ftn. 14a).

State Management of Water on Public Lands

Although the State of Alaska may not have proprietary power over unappropriated, nonnavigable waters located on public lands, it is fairly clear that the State has managerial authority over those waters as provided by 43 USC Sections 661 and 1131(e) (California Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 154-155 (1935)). As set out in 43 USC Section 661, the limit of this managerial authority is the "local custom, laws and the decisions of courts" of the state. Alaska's constitution is a local law of the state which subjects appropriations of water to a reservation for fish and wildlife. The federal government's recognition of Alaska's constitution through 43 USC Section 661 and subsequent legislation provides the State with authority to reserve waters from appropriation on public lands. Recognition by Congress is not the conveyance of proprietary power or the passing of sovereign power. It is the establishment of a mechanism to manage waters. The states are an essential element in this mechanism

and their authority will continue until Congress clearly expresses otherwise.

Presently all federal lands in Alaska are withdrawn from public entry under 43 USC Section 1616(d)(1) and (2). The withdrawals, when issued, were not meant to be permanent. They provide time for Congress to enact legislation to classify appropriate federal lands as units of National Parks, Forests, Wildlife Refuges, and Wild and Scenic River Systems (National Interest Lands). On December 3, 1978, President Carter used executive authority under the Antiquities Act to create 56 million acres of National Monuments. Once the National Interest Lands question is settled, some federal lands shall again become public and open to limited entry.

The U.S. Supreme Court in California v. U.S., supra has enhanced state managerial authority over water on public lands. Section 8 of the Reclamation Act of 1902 states that:

> "Nothing in this Act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any States or Territory relating to the control, appropriation, use or distribution of water used in irrigation, or any vested rights acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this Act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal Government or of any landowner, appropriator, or user of water in, to or from any interstate stream or the waters thereof: Provided, that the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right" (43 USC Section 383).

The court interprets this section to require the United States to apply for a permit to use unappropriated water in reclamation projects. A state may also condition these permits, as long as the conditions do not contravene the expressed intent of Congress. Prior to this case, Supreme Court decisions required the federal government to appropriate water according to state procedures for federal projects on public lands, but conditioning the use of that water was beyond the power of the states.

Even though the Reclamation Act does not apply to Alaska, there is similar language in other federal acts which could give Alaska permit and condition authority over federal uses of water on public land.

State Management of Water on Reserved Lands

Even if the State of Alaska should pursue a state reserved water right for fish and wildlife purposes, the problem of water rights on federal reservations will continue to persist. Besides the military reservation situation discussed above, another problem is now being litigated in Paug-Vik, Ltd. v. Martin, supra. In this case Paug-Vik, Ltd., the Native village corporation for the village of Naknek, is contesting DNR's authority to issue a certificate of appropriation to Ward's Cove Packing Co., Inc. to perfect an alleged existing right on Seagull Lake. Seagull Lake is located near Naknek and is surrounded by lands selected by Paug-Vik pursuant to the Alaska Native Claims Settlement Act (ANCSA) of 1971, 43 USC Sections 1601 et seq. Paug-Vik claims that pursuant to its aboriginal (Native) rights and ANSCA it owns all the water of Seagull Lake and DNR has no power to manage the appropriation. DNR, as discussed above, contends it owns the water or at least has the power to manage its use. The Tentative Decision on Appeal by Superior Court Judge James K. Singleton says that DNR has the authority to issue a certificate of appropriation. Singleton went on to say that he did not consider the effect of a possible reservation of water rights established by ANSCA for Natives (Paug-Vik, Ltd. v. Martin, supra, 17).

It is not clear whether ANSCA makes such a federal reservation of water, but it is clear Congress has the authority to settle the question. One of the major purposes of ANSCA is to quickly settle title disputes to aboriginal land claims (43 USC Section 1601). The interrelationship of land and water and the failure of Congress to deal adequately with water means the purpose of ANCSA may be somewhat undermined.

The handling of non-Indian reserved rights via President Carter's directives holds some potential for solving state difficulties in managing the use of water. A presidential directive is good only as long as the president or his successors do not change the directive. There are no specific appropriations by Congress to execute the directive; only legislation will guarantee the continuity needed for successful implementation.

Minimum Stream Flows and the General Reservation for Fish and Wildlife

DNR is still attempting to get legislation passed that will allow state agencies to appropriate water for minimum stream flows (Alaska Water Study Committee, 1976b, p. 187, also see Statutory Amendments above). This legislation has been opposed by such groups as Alaska Miner's Association, even though all valid rights (including mining claims) would continue to have priority over minimum stream flow appropriations (Presentation of Brent Petrie, Alaska Department of Natural Resources, at Instream Flow Group Seminar, Anchorage, AK., October, 1978). However, if the 1959 reservation date is adopted by the State, the reservation rights for fish and wildlife would be prior and therefore senior to some valid claims, although these valid claims would not be extinguished or withdrawn.

Such legislation would probably be opposed, but reservations for stream flows already exist. DNR reserves stream flows for fish and wildlife purposes on a case-by-case basis pursuant to AS 46.15.080 and the constitution. This is unlikely to change in the future. The maintenance of minimum flows for fish and wildlife is considered to be a good management practice of a renewable resource. Also, if the present or future administration should decide that mineral development or some other development will take precedence over maintenance of fish and wildlife habitats, then the Water Use Act, or any other act dealing with water and maintenance of fish habitats, may have to be administered in an unconstitutional manner.

"Wherever occurring in a natural state, the waters are reserved to the people for common use and are subject to appropriation and beneficial use as provided in this chapter" (AS 46.15.030). This wording is taken directly from Article VIII, Sections 3 and 13 of the Alaska Constitution supra. Section 13 also subjects appropriation of water to a general reservation for fish and wildlife. AS 46.15.080 gives the commissioner authority to issue a permit to appropriate if he finds that a proposed appropriation is in the public interest. The public interest as set out by AS 46.15.080(b)(2) includes the effect on fish and game resources. The chapter provides that the general reservation for fish and wildlife will be considered by the commissioner. It is not difficult to show that minimum flows are essential to maintenance of fish and wildlife habitat, migration, and reproduction. The location of the reservation in the constitution (in the section governing appropriation) indicates that the intent of the framers was to reserve minimum stream flows for fish and wildlife. If the commissioner fails to administer the Water Use Act so as to provide for minimum flows, his actions may be contrary to the Constitution of Alaska.

Even if the state chooses to forego the reservation of stream flows, the President's federal water policy statement of June 6, 1978, has directed federal agencies to cooperate with state governments and to take the lead in maintaining stream flows. State inactivity in reserving flows for fish and wildlife will only result in the federal government reserving them pursuant to its federal reserved water rights. The question to ask is not whether there will be minimum flows for fish and wildlife purposes, but who will manage those flows.

In August of 1977 ADF&G and DNR received a report from A.G. Ott and K.E. Tarbok on "Instream Flow"; Applicability of Existing Methodologies for Alaskan Waters. The report analyzes eleven separate methods for determining appropriate minimum flows to guarantee the habitat, migration, and spawning of fish in Alaska. It recommends that, for the short term and for select streams, a method be implemented which reserves as an optimum 60 percent of the mean annual flow from July through April, and 100 percent of that flow during May and June. This method is

designed to adequately protect the fish and make water available for appropriation. It may not be applicable to all the streams and rivers of Alaska, and it may reserve more water than is necessary for optimum protection, or more water than is seasonally available.

A significant amount of water might have to be reserved to maintain minimum flows. Under a multiple use philosophy, much of this reserved water may be diverted, used, cleaned and returned so as not to affect minimum flow. This management philosophy has become feasible in the past few years with the implementation of the Federal Water Pollution Control Act of 1972 as amended (33 USCA Section 1250 et seq.), and the water quality standards proposed by the Alaska Department of Environmental Conservation (18 AAC 70.010-110). Most water that is appropriated is not actually consumed. It may be returned in adequate quantity and quality at the diversion site so as not to affect the instream flow.

Summary

Title to land is of paramount importance and controversy in Alaska. Once the title questions are settled and development proceeds, the need for water shall become more pressing. All major economic activities including oil and mineral development, fisheries, and recreation require water for production. DNR has made considerable progress in addressing Alaska's water management problems. The need to maintain this momentum by adequate funding of the Water Management Section of the Division of Forest, Land, and Water Management and proper coordination with other state agencies is essential to avoid the problems faced by other states.

The problems inherent in the Winters doctrine may be addressed several ways: 1) The State may join the United States in adjudication of water rights to watersheds. Also, the State may cooperate with federal agencies in their attempt to comply with the President's doctrine to quantify federal reserved rights. Problems with these approaches exist because adjudication is extremely time consuming and expensive, and the presidential directive may lack the continuity and

funds essential to execute it. Both solutions are retrospective and do not address future reservations. 2) The State may attempt to decrease the amount of unappropriated water within its boundries by developing its own reserved right, but this is only a partial solution at best. The State must first obtain federal recognition of this right. Even if recognized, state waters which are unreserved by the State or unappropriated will still be subject to future federal reservations. 3) The federal government may modify the Winters doctrine through legislation to require that federal water rights be quantified. The doctrine is based on the federal government's proprietary power and only Congress may modify by legislation the federal government's exercise of that power. Of the three solutions to the problems, only the third solution has the potential to cure the deficiency of the doctrine so it will not arise in the future.

The National Water Commission makes a similar recommendation (1973, pp. 465-466). The Commission suggests that legislation be enacted requiring the federal government to record and quantify their rights with state governments through state procedures. This compliance by the United States with state procedures, while not forfeiting other federal rights, will decrease the management and planning problems and will comply with the available mechanisms for managing water.

BIBLIOGRAPHY

Alaska Dept. of Natural Resources, Div. of Lands. 1967. Appropriation of water under the Alaska water use act. 13 pp.

Alaska Water Study Committee. 1975. Alaska water assessment - problem identification. Juneau. 203 pp.

_____. 1976a. Alaska water assessment; problem information. Juneau. 85 pp.

_____. 1976b. Alaska water assessment; state-regional future water and related land problems. Juneau. 401 pp.

_____. 1977a. Alaska region; specific problem analysis summary report; 1975 national assessment of water and related land resources. Juneau. 184 pp.

_____. 1977b. Alaska water assessment; appendix G of summary report. Juneau. 1 vol.

Capito, G., and L.S. Parker. 1976. State of Alaska state-regional futures; Alaska water assessment. Alaska Dept. of Environmental Conservation, Juneau. 40 pp.

Carlson, R.F., and J.G. Butler, eds. 1973. Alaska water resources research needs for the 70's - a seminar. Institute of Water Resources, University of Alaska, Fairbanks. Report 39. 155 pp.

Clark, R.E. 1967a. Waters and water rights, Vol. 1, Sec. 1-90. Allen Smith Co., Indianapolis, IN. 598 pp.

_____. 1967b. Waters and water rights, Vol. 2., Sec. 77, 81, 100-152. Allen Smith Co., Indianapolis, IN. 504 pp.

_____. 1972. Waters and water rights, Vol. 5, Sec. 400-459. Allen Smith Co., Indianapolis, IN. 655 pp.

_____. 1976. Waters and water rights, Vol. 7, Sec. 600-657. Allen Smith Co., Indianapolis, IN. 582 pp.

deWeerdt, J.L., and P.M. Glick, eds. 1975. A summary digest of the federal water laws and programs. National Water Commission, Arlington, VA. 205 pp.

Dewsnup, R.L., and D.W. Jensen, eds. 1973. A summary digest of state water laws. National Water Commission, Arlington, VA. pp. 1-73, 87-101.

Dewsnup, R.L., and D.W. Jensen, eds. 1977a. Promising strategies for reserving instream flows. Western Energy and Land Use Team, Office of Biological Services, U.S. Fish and Wildlife Service, Ft. Collins, CO. Report FWS/OBS-77/29. 63 pp.

_____. 1977b. State laws and instream flows. Western Energy and Land Use Team, Office of Biological Services, U.S. Fish and Wildlife Service, Ft. Collins, CO. Report FWS/OBS-77/27. 72 pp.

Eames, H.C., Jr. 1977. The jurisdictions of the federal and state governments over the construction of the trans-Alaska pipeline. Unpublished. Institute for Social and Economic Research, University of Alaska, Anchorage. 1 vol.

Hutchins, W.A. 1974. Water rights laws in the nineteen western states, Vol. 2. Natural Resource Economics Div., Economic Research Service, U.S. Dept. of Agriculture, Washington, DC. Miscellaneous Publication 1206. 756 pp.

_____. 1977. Water rights laws in the nineteen western states, Vol. 3. Natural Resource Economics Div., Economic Research Service, U.S. Dept. of Agriculture, Washington, DC. Miscellaneous Publication 1206. 793 pp.

Lamb, B.L., ed. 1977. Protecting instream flows under western water laws: selected papers. Cooperative Instream Flow Service Group, Western Energy and Land Use Team, Office of Biological Services, U.S. Fish and Wildlife Service, Ft. Collins, CO. Report FWS/OBS-77/47. 61 pp.

MacDonald, J.B., and J.H. Beuscher. 1973. Water rights. 2d ed. American Printing and Publishing, Inc., Madison, WI. 662 pp.

National Water Commission. 1973. Water policies for the future. Water Information Center, Inc., Pt. Washington, NY. 579 pp.

Ott, A.G., and K.E. Tarbox. 1977. "Instream flow"; applicability of existing methodologies for Alaska water. Woodward-Clyde Consultants, Inc., Anchorage, AK. Report for Alaska Dept. of Fish and Game and Alaska Dept. of Natural Resources. 70 pp.

Powell, R.R. 1949. The law of real property, Vol. 5. Revised in 1977 by P.J. Rohan. Matthew Bender, NY. 1129 pp.

Ranquist, H.A. 1975. The Winters doctrine and how it grew: federal reservation of rights to the use of water. Brigham Young University Law Review. 1975(4):639-724.

Rogers, P.L. 1977. Coastal zone management authorities as administered by Alaska Department of Natural Resources. Chapter 10, Water permit. Div. of Lands, Alaska Dept. of Natural Resources, Anchorage. Report for Alaska Coastal Management Program. 14 pp.

Trelease, F.J. 1962. A water code for Alaska; a report to the state of Alaska. 149 pp.

______. 1967a. Alaska's new water use act. Land and Water Law Review. 2(1):1-49.

______. 1967b. Cases and materials on water law. West Publishing Co., St. Paul, MN. 364 pp.

______. 1977. Recommendations for water resources planning and administration. Alaska Dept. of Natural Resources, Anchorage. 60 pp.

Tryck Nyman and Hayes, Dames and Moore, and Leeds Hill and Jewett. 1973. Anchorage water sources. Report for Anchorage Water Utility and Central Alaska Utilities. 307 pp.

U.S. Army, Corps of Engineers, Alaska District. 1978a. Metropolitan Anchorage urban study summary water supply report. Anchorage, AK. 24 pp.

______. 1978b. Part V - water supply. Incomplete final draft report. Anchorage, AK. 373 pp.

Wolf, S. 1975. Water regulation and planning. Unpublished. Paper for presentation at Interagency Technical Committee for Alaska Fall Meeting, Juneau. Alaska Dept. of Community and Regional Affairs, Juneau. 12 pp.