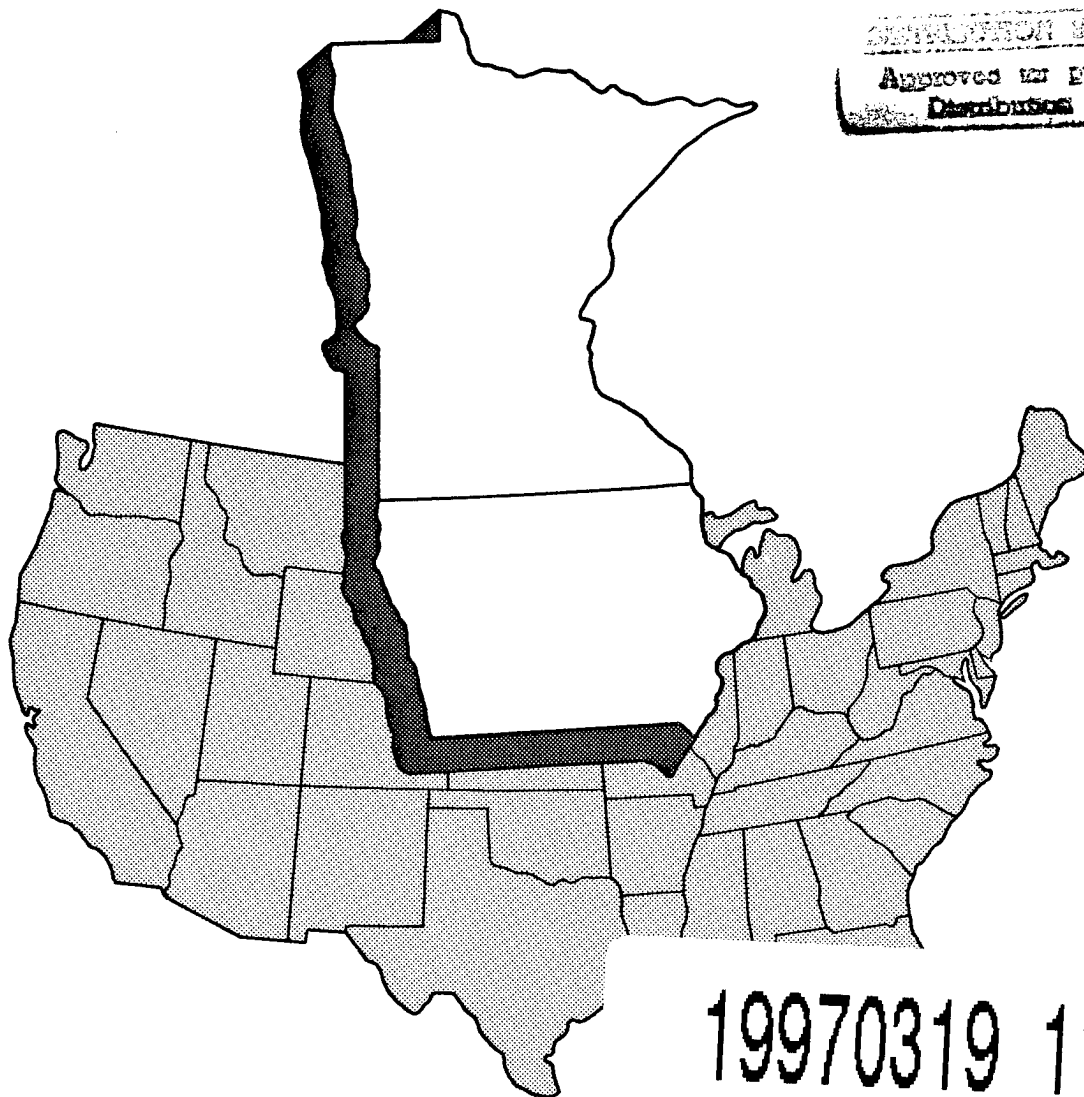


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OPPORTUNITIES TO PROTECT INSTREAM FLOWS IN MINNESOTA AND IOWA



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OPPORTUNITIES TO PROTECT INSTREAM
FLOWS IN MINNESOTA AND IOWA

by

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FOREWORD

In Opportunities to Protect Instream Flows in Minnesota and Iowa, Mr. Aiken provides the reader with a basic survey of State prerogatives and programs that may be used to protect the instream uses of water. Because of the interest and responsibilities of State fish and wildlife agencies and other conservation organizations, most of these opportunities are related to fish and wildlife habitat. However, there are many other instream uses considered, including hydroelectric power production, recreation, navigation, downstream delivery, and waste load assimilation. The purpose of this document is to illustrate methods to protect these instream uses within the context of existing rules and regulations.

The Western Energy and Land Use Team, Division of Biological Services, U.S. Fish and Wildlife Service, has published a number of similar documents in the past. Information is now available for 25 western and midwestern States (Table 1).

Even though Mr. Aiken paid close attention to statutes, this document is not intended as a legal reference. It is designed to be a planning tool to survey current State programs, compare approaches to instream use protection, and index a preliminary evaluation of the costs and benefits of a wide range of programs. Where appropriate, a letter from the State water administration agency concerning the State's perspective on instream uses of water is included.

Mr. Aiken has provided a summary table for each State, which serves as an index to available opportunities. We anticipate that these tables will be the reader's most valuable guide to these reports.

In some reports, opportunities in each State are presented in a single document, but, in several publications, reports on States from the same geographical region are combined. The complete list of reports in this series is displayed in Table 1. The combination of State reports presents an opportunity for easy comparison of specific programs. This is particularly useful because of the wide variety of instream flow protection programs or possibilities.

The primary purpose of this series of documents is to point out the opportunities in instream flow management which currently exist so that planners and managers can anticipate development, plan appropriate programs, and evaluate the costs and benefits of certain courses of action. In addition, the reports are brief histories of the level of success of various State programs. The use of this information can be a significant cost saving to planners and managers.

In summary, each document has an Executive Summary which discusses its purpose, uses, and limitations. Each document also has separate information tables which summarize the contents for each State. It is hoped that the research represented in these documents will provide the kind of overview and preliminary evaluation that will ease the burden of State, local, or Federal planners and managers as they seek to meet their increasingly complex responsibilities.

Table 1. Publications in the opportunity series.

Title	Publication Number
Instream Flow Strategies for Arizona	FWS/OBS-78/35
Instream Flow Strategies for California	FWS/OBS-78/36
Instream Flow Strategies for Colorado	FWS/OBS-78/37
Instream Flow Strategies for Idaho	FWS/OBS-78/38
Instream Flow Strategies for Montana	FWS/OBS-78/39
Instream Flow Strategies for Nevada	FWS/OBS-78/40
Instream Flow Strategies for New Mexico	FWS/OBS-78/41
Instream Flow Strategies for North Dakota	FWS/OBS-78/42
Instream Flow Strategies for Oregon	FWS/OBS-78/43
Instream Flow Strategies for South Dakota	FWS/OBS-78/44
Instream Flow Strategies for Utah	FWS/OBS-78/45
Instream Flow Strategies for Washington	FWS/OBS-78/46
Instream Flow Strategies for Wyoming	FWS/OBS-78/47
Opportunities to Protect Instream Flows in Alaska	FWS/OBS-82/33
Opportunities to Protect Instream Flows in Nebraska and Kansas	FWS/OBS-83/02
Opportunities to Protect Instream Flows in Michigan and Wisconsin	in preparation
Opportunities to Protect Instream Flows in Minnesota and Iowa	FWS/OBS-83/07
Opportunities to Protect Instream Flows in Texas, Oklahoma, and Arkansas	in preparation
Opportunities to Protect Instream Flows in Missouri	IFG Working Paper 308.16
Hawaiian Water Rights and Instream Flows	IFG Working Paper 308.3

EXECUTIVE SUMMARY

OBJECTIVES

This document combines the efforts of several individuals, agencies, and organizations toward a common objective: the identification; description; and preliminary evaluation of promising opportunities for protecting instream uses of water under existing law in Minnesota and Iowa.

This report is intended for the use of planning and management personnel who need an overview of potential opportunities for preserving instream flows. It is not intended to replace or challenge the advice of agency counsel and it is not written to provide legal advice. Instead, it is designed as a guide for the person trying to find his way among sometimes bewildering Federal and State statutes and administrative practices. This report is not, and should not be taken as, official policy or prediction of future actions by any agency. It is simply a summary of some potential opportunities for protecting instream flows.

Toward these objectives, the U.S. Fish and Wildlife Service, through its Water Resources Analysis Project, contracted with Dr. Mary Ray White to identify and describe these opportunities under State laws and current State administrative practice. The project had two phases. In Phase I, Dr. White identified potential opportunities in each State being considered. These descriptions were reviewed for accuracy and utility by a wide range of State and Federal personnel. In Phase II, Dr. White and her associate, J. David Aiken, prepared a report for each State. Each document has undergone extensive review by State and Federal personnel.

BACKGROUND CONSIDERATIONS

Both State and Federal agencies have important roles to play in water management, particularly in instream flow preservation. The summaries offered here are not intended to suggest that Federal instream flow decisions will or should replace current State water management systems. It is very important for Federal employees to recognize that Federal water policy requires deferral to State water management policy and statutes. In addition, U.S. Department of the Interior employees should recognize that they are required to follow the water policies of the Secretary of the Interior.

Federal employees should recognize that a close working relationship with State agencies is often the most practical way of getting things done. Resources are almost always limited and, in some cases, gathering and developing information, as required by these opportunities, may be beyond the

financial power of the agency most concerned. As a result, agencies and individuals should learn to cooperate with similarly oriented private, State, and Federal organizations to ensure success.

Many of the opportunities described in this booklet are frequently used and will be familiar to the reader. Some of them include activities that are required of U.S. Fish and Wildlife Service field personnel. Examples of these activities may be given, while no examples are necessary for others.

Federal employees should be particularly cautious when using unusual or untried approaches and should refer legal questions to the office of their Regional Solicitor or general counsel. Close cooperation with the office of the Solicitor or agency counsel will result in fewer lawsuits and more successful results overall.

The reader who wishes to protect or augment an instream flow should begin by looking at the physical and legal circumstances of the whole stream. A planner or manager should consider all types of land and water interests involved. The stream should be examined both up and downstream of the reach of interest. Downstream interests should be considered because often they have statutory or contractual power to hold water instream. This survey should include ownership, possession, and control of lands and waters, and the types of use to which the lands and waters are presently being put, such as agriculture, planned development, wilderness, or industry. It is important to remember that contracts or leases may be held by other organizations and individuals. In addition, government agencies may have authority over the land and water. Potential governing agencies are many and diverse, ranging from the Federal government to special districts and municipal bodies.

Often there is more than one way to solve an instream flow problem. When given a choice, the planner or manager should seek the least expensive, least disruptive, and simplest solution to the problem. In some cases, this may mean having a conversation with a landowner or local administrator, sending a letter to the owner or lessee of land and water, or simply arranging a meeting between two water users who could stagger their withdrawals or in some other way provide for a stream.

Offering information on instream flow needs to other agencies of State or Federal government is complex and often provided for by specific statutes. The most risky, complex, and expensive approach to protecting streams is the use of lawsuits. In some cases, litigation may be a necessary part of protecting a right and cannot be avoided; however, lawsuits are expensive, and their outcome is often unpredictable.

In using this report, the reader should be aware of its purpose and limitations. First, only a few of many possible opportunities are described herein. The user should exercise initiative, judgment, and creativity in dealing with any specific situation. Second, this report should be used only as a starting point. In any situation related to the acquisition of water rights, legal advice should be sought. This report should in no way be construed as a substitute for the opinion of a private attorney, attorney general, or agency counsel. Third, this report is neither a policy nor a decision

document; it is simply a collection of opportunities which appear to have utility in a variety of situations.

The purpose of this booklet is to encourage cooperative and innovative thinking by all persons interested in instream flows for fish and wildlife, recreation, and watershed management at Federal, State, or local levels of government, as well as private individuals and wildlife organizations. Many talented people want to protect instream flows; their cooperation in a variety of approaches will be necessary to solve the problem.

Table 2. Opportunities for protecting instream flows in Minnesota.

Title	Identification		Application		
	General description	Applicable situations	Initiation		Implementation
			Parties	Actions	
Protected Flows (see page 3)	Minn. Dept. of Natural Resources may designate protected streamflows to which water rights are subject. M.S.A. 105.41, 105.417.	Where instream values may be disrupted by surface water withdrawals.	Minn. Dept. of Natural Resources (individuals may request DNR action).	DNR evaluation of USGS streamflow data and identification of instream uses needs (Fish and Wildlife ...)	Minn. Dept. of Natural Resources. Administrative designation of protected streamflows.
State Water Planning (see page 7)	Instream flow requirements can be identified in water planning studies. M.S.A. 105.39, 105.41.	Where instream flow needs have not been identified or protected.	Minn. Dept. of Natural Resources (individuals may request DNR action).	Begin instream flow requirement identification in water planning studies.	Minn. Dept. of Natural Resources. Prepares plan which includes identification of instream flow requirements.
State Water Permit Discretionary Authority (see page 9)	Instream flows could be protected in water appropriation administrative proceedings. M.S.A. 105.41-105.45.	When instream flows are threatened by groundwater withdrawals, dam construction, stream channel modification, and change of appropriation.	Minn. Dept. of Natural Resources (individuals can intervene in administrative proceedings).	Evaluation of impact of proposed activity on instream values.	Minn. Dept. of Natural Resources. Approval, disapproval, or conditioned approval of appropriation application.
					Administrative costs of evaluating proposal (cost of intervention).

Table 2. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Streamflow Augmentation (see page 11)	Streamflows may be augmented with impounded water, groundwater, or by denying water withdrawals. M.S.A. 105.41, 105.42.	During low flow periods or on streams with insufficient streamflow.	Public or private entity wishing to augment streamflow.	Acquire DNR approval for proposed water use.	Public or private entity wishing to augment streamflow.	Acquire water supply and DNR approval.
Wild and Scenic Rivers (see page 13)	Minn. Dept. of Natural Resources may designate rivers as wild, scenic, or recreational. M.S.A. 104.31-104.40.	Where rivers and reserve areas have retained their scenic, recreational, or natural values.	Minn. Dept. of Natural Resources (individuals may request DNR action).	DNR evaluation of whether area meets designation criteria.	Minn. Dept. of Natural Resources.	Administrative designation of wild, scenic, or recreational rivers.
Critical Area Designation (see page 17)	Governor may designate area as critical upon recommendation of Minn. Environmental Quality Board. M.S.A. 1160.01-1160.14.	Where areas with historical, natural, scientific, or cultural values may be adversely impacted by publicly financed activities.	Minn. Environmental Quality Board (individuals may request EQB action).	EQB evaluation of whether area should be designated critical.	Governor.	Designation of critical areas.
						Study costs.
						Study costs, cost of administering wild, scenic, or recreational area.

Table 2. (Continued)

Title	Identification		Application		
	General description	Applicable situations	Initiation		Implementation
			Parties	Actions	
State Wildlife and Recreational Land Acquisition (see page 19)	Minn. Dept. of Natural Resources may acquire property for fish, wildlife, and recreation-al purposes. M.S.A. 97.48-448; 84.027-033.	Where the Department desires to protect in-stream uses through land acquisition.	Public or private entity wishing to augment stream-flow.	Petition DNR to purchase appropriate property.	Public or private entity wishing to augment stream-flow. Acquire land; adopt management plans. Purchase costs, study costs, management costs.
Conservation Easements (see page 21)	Public agencies may acquire conservation easements to legally prevent the disruption of a property's natural state. M.S.A. 84.64, 84.65.	Where property owner is willing to sell or give conservation easement; where property cannot be acquired by DNR.	Minn. Dept. of Natural Resources or nonprofit organizations; property owner.	Evaluation of property's natural characteristics and whether conservation easement can be obtained.	Negotiation of conservation easement. Evaluation, negotiation, and acquisition costs.
Environmental Policy Act (see page 23)	Environmental impact of public activities must be reviewed. M.S.A. 1160.01-1160.07.	Where public activities would interfere with instream values.	Private individuals.	Challenge adequacy of assessment or demonstrate that less disruptive alternative exists that is prudent, feasible.	Review impact statement; challenge statement in court. Litigation costs.

Table 2. (Concluded)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Environmental Rights Act (see page 26)	Actions adversely affecting environmental values may be challenged in court. M.S.A. 1168.01-1168.13.	Where public or private action would interfere with instream values.	Private individuals.	Initiate law-suit challenging interfering with instream values.	Private individuals.	Prosecute lawsuit challenging activity interfering with instream values.
The Public Trust Doctrine (see page 56)	State actions adversely affecting public instream values may be challenged in administrative or court proceedings.	When State actions threaten public instream values.	Any individual, group, or organization; Minn. Atty. Gen.	Intervene in administrative proceedings to protest actions threatening public instream values.	Any individual, group, or organization; Minn. Atty. Gen.	Challenge in court State actions threatening public instream values. Cost of intervening in administrative proceedings; litigation costs.

Table 3. Opportunities for protecting instream flows in Iowa.

Title	Identification			Application		
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Protected Flow Requirements (see page 30)	All, e.g., water use permits are subject to protected flow requirements. Iowa Code Ann. 455A.22.	When surface or groundwater withdrawals for consumptive purposes may interfere with instream uses.	Any individual, group, or agency.	Inform Iowa Natural Resources Council that surface water permit withdrawals for consumptive purposes are interfering with instream use.	Iowa Natural Resources Council; consumers permit holders.	Iowa Natural Resources Council orders permit holders to stop withdrawals until streamflows increase.
Scenic River System (see page 35)	Iowa Conservation Comm'n may designate river as a scenic river, and may encourage cities and counties to adopt a scenic river zoning ordinance. Iowa Code Ann. 108A.2, 108A.6.	Where a river or river segment possesses outstanding water conservation, scenic, fish, wildlife, historic, or recreational values which should be preserved.	Any individual, group, or agency. Iowa Conservation Comm'n.	Nominate a river or river segment for designation as a scenic or natural river. Evaluate whether the river should be included in the Iowa scenic river system.	Iowa Conservation Comm'n; city or county.	Designate or decline to designate river as a scenic or natural river. Iowa Conservation Comm'n attempts to persuade the city and/or county to adopt a scenic river zoning ordinance.

Table 3. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
State Water Planning (see page 40)	Iowa Natural Resources Council could identify in-stream uses in the State water plan and protect those instream uses in its regulatory programs. Iowa Code Ann. 455A.17.	Where surface or groundwater withdrawals, impoundments, or stream channelization could interfere with instream use.	Iowa Natural Resources Council.	Identifies instream water uses in State water plan.	Iowa Natural Resources Council.	Conditions or denies grant of permit for surface or groundwater withdrawals, impoundments, or stream channelization for the protection of instream uses.
State Purchase of Reservoir Space (see page 42)	Iowa Natural Resources Council is authorized to negotiate low flow releases from Federal reservoirs and to purchase stored water from Federal reservoirs. Iowa Code Ann. 455A.17.	Where Federal reservoirs are to be constructed or have already been constructed.	Iowa Natural Resources Council.	Negotiate Federal low flow releases; negotiate purchase of stored water.	U.S. Army Corps of Engineers. Iowa Natural Resources Council.	Monitor stream-flow conditions and make low flow releases. Request stored water releases from Corps during low flow periods.
						Negotiation expenses; streamflow monitoring expenses.

Table 3. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Streamflow Augmentation (see page 44)	Instream uses may be maintained by augmenting natural streamflow with stored water or groundwater.	When natural streamflow is insufficient to maintain instream uses.	Any person, group, or agency. Iowa Natural Resources Council.	Acquire water use permits for groundwater withdrawals or surface water impoundment for flow augmentation purposes.	Water use permit holders.	Augment streamflow during low flow periods; inform Iowa Natural Resources Council of flow augmentation plans.
Protected Stream Designation (see page 46)	Permits are required from Iowa Natural Resources Council to modify a stream channel (to channelize a stream). 580 Iowa Adm. Code 5.95, 5.96.	Where stream channelization or other channel modification would interfere with instream uses.	Iowa Natural Resources Council. Iowa Conservation Commission.	Evaluate stream modification permit application. Advise Iowa Natural Resources Council on impact of proposed channel modification on fish and wildlife resources.	Iowa Natural Resources Council.	Grant, deny, or condition channel modification permit. Permit evaluation and administrative expenses.

Table 3. (Continued)

Title	Identification		Application		
	General description	Applicable situations	Initiation		Implementation
			Parties	Actions	
Protected Water Areas (see page 48)	Iowa Conservation Comm'n is authorized to protect natural water areas through land acquisition.	Where water areas, including lakes, wetlands, and river corridors exist in a natural state.	Iowa Conservation Comm'n.	Evaluate whether land accompanying natural water area can and should be acquired through the protected water areas program.	Negotiate acquisition of land for inclusion in protected water area. Protected water area evaluation and acquisition costs.
Conservation Easements (see page 52)	Iowa Conservation Comm'n, Iowa Natural Resources Council, County conservation boards, and cities are authorized to acquire by purchase, lease or gift a conservation easement. Iowa Code Ann. 11D.1	When the conservation easement would preserve scenic beauty, wildlife habitat, river corridors, wetlands, or forests, or promote outdoor recreation.	Public entity authorized to accept conservation easement; landowner.	Evaluate whether land is suitable for conservation easement and whether landowner and public entity are interested in pursuing acquisition of conservation easement.	Public entity authorized to accept conservation easement; landowner. Negotiate terms of conservation easement. Conservation easement evaluation and acquisition costs.

Table 3. (Concluded)

Title	Identification				Application		
	General description	Applicable situations	Initiation		Implementation		Expenditures
			Parties	Actions	Parties	Actions	
State Preserves (see page 54)	Public or private land and/or water areas may be dedicated as State preservation when they are in natural condition or possess unusual natural, cultural, or scenic values of scientific or educational value. Iowa Code Ann. 111B.10.	When land and/or water areas that would qualify for State preserve are sought to be protected not only from private development, but also from public development, such as roads or utility lines.	Any individual, group, or agency. State Advisory Board for Preserves.	Nominate land and water areas for inclusion in State preserve system. Evaluate whether land and/or water area qualifies for inclusion in the State preserve system.	State Advisory Board for Landowner. Governor.	Land or water area Preserve is designated as a preserve when State Advisory Board for Preserves approves the dedication, when articles of declaration have been completed by landowner, and when Governor dedicates preserve.	Land or water area Preserve is designated as a preserve when State Advisory Board for Preserves approves the dedication, when articles of declaration have been completed by landowner, and when Governor dedicates preserve.
The Public Trust Doctrine (see page 56)	State actions adversely affecting public instream uses may be challenged administratively or in court.	When State actions may interfere with public instream uses.	Any individual, group, or organization. Iowa Attorney General.	Intervene in or participate in administrative proceedings to protest actions threatening instream uses as violating State's public trusts responsibilities.	Any individual or organization. Iowa Attorney General.	Challenge in court State actions interfering with instream values as violating the State's public trust responsibilities.	Costs of intervening or participating in administrative proceedings; litigation costs.

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PART I: MINNESOTA

INTRODUCTION

Minnesota is well known for its lakes, streams, natural areas, fish and wildlife, and scenic beauty. To preserve the State's natural heritage, Minnesota laws are among the most protective of natural resources in the Nation. Minnesota law affords many opportunities for protecting instream uses, including:

1. Protected flow requirements where water withdrawals threaten instream uses;
2. Protection of river corridors through wild and scenic river and critical area programs;
3. Review of public and private activities affecting the environment through an environmental impact review process; and
4. Recognition of the right of all citizens to go to court to protect natural resources and environmental values.

State natural resource programs are administered by the Minnesota Department of Natural Resources. These include the water rights and the wild and scenic rivers programs. The Minnesota Environmental Quality Board is responsible for administering the critical areas program and the environmental impact review process.

PROTECTED FLOWS

OPPORTUNITY

Where data are available, permits issued by the Minnesota Department of Natural Resources to divert water from a stream must be limited in order to maintain instream uses; withdrawals for consumptive purposes are not made during low flow periods [Minn. Stat. Ann. 105.417(2) (1981 Supplement)].

BACKGROUND

Minnesota has established a system which requires a water use permit from the Minnesota Department of Natural Resources before surface or groundwater may be withdrawn [Minn. Stat. Ann. 105.41(c) (1981 Supplement)]. Domestic and other low volume uses are exempted [6 Minn. Code of Agency Rules § 1.5050(c) (1), (c) (4 August 1980)]. Permit holders are referred to as "appropriators". However, conflicts between appropriators are not resolved on the basis of "first-in-time is first-in-right", as is true under the appropriation doctrine in the West. Instead, Minnesota law has established a schedule of "priorities" as follows: (1) domestic use; (2) other low volume uses; (3) irrigation and agricultural processing; (4) power production; and (5) any other high volume uses, including commercial and industrial uses supplied by a municipality [Minn. Stat. Ann. 105.41(1)(a) (1981 Supplement)]. Appropriators with a lower priority may be required to curtail withdrawals for the benefit of higher priority appropriators [6 Minn. Code of Agency Rules, § 1.5055(b)(4)(b), (4 August 1980)].

If sufficient data are available to the Department of Natural Resources, a protected flow level may be established. Since 1977, permits to appropriate (that is, to withdraw) streamflow have been conditioned so that streamflow appropriations for consumptive uses cannot be made during low flow periods, if the protected flow level would be violated [Minn. Stat. Ann. 105.417(2) (1981 Supplement)]. The Department has defined "protected flow" as the quantity of streamflow necessary to accommodate instream uses, such as water-based recreation, navigation, aesthetics, fish and wildlife habitat, water quality maintenance, and needs of downstream higher priority users [6 Minn. Code of Agency Rules, § 1.5050(d) (4 August 1980)]. "Consumptive use" is also defined as water withdrawn and not directly returned to the source of supply for immediate use locally. As a practical matter, most of the consumptive withdrawals of streamflow in Minnesota are for irrigation.

EXAMPLE

Protected flow levels have been established for over thirty Minnesota rivers and streams, primarily where a large number of surface water appropriators exist and where, during dry years, natural streamflows are insufficient to accommodate instream flow uses and appropriative withdrawals. Rivers with protected flow levels include the Vermillion, Long Prairie, and Otter Tail Rivers. Protected flow levels are based on U.S. Geological Survey historic streamflow records; where stream gaging information is not available, estimates based on available information on the watershed, climatic factors, runoff, and other information are used. Recommendations from Department of Natural Resources fish and wildlife field personnel are also considered when establishing a protected flow level [6 Minn. Agency Rules, § 1.5052(A)(2) (4 August 1980)]. A method for determining protected flow levels for different types of streams based on biological data is being developed. This method would be a more scientific basis for establishing protected flow levels than field observations alone.

Protected flow requirements may be established on a case-by-case basis. As new permit applications are made on streams with no established flow levels, a protected flow level will be established if the Department of Natural Resources determines that a protected flow level is needed and that adequate data are available to establish a protected flow level. Other State agencies may petition the Department to establish protected flow levels if that agency submits data justifying the protected flow designation and the agency agrees to pay the costs of any necessary public hearing [6 Minn. Code of Agency Rules, § 1.5052(B)(2)(f) (4 August 1980)].

Protected flow requirements may apply to both existing and new appropriations. When protected flow requirements are first established, any existing appropriators are notified of the protected flow designation and may request a public hearing before their permits are modified. Permit applications for streams with protected flow levels are evaluated taking the protected flow into account [6 Minn. Code of Agency Rules, § 1.5052(B)(2)(f) (4 August 1980)].

Regulation of surface water appropriations to maintain the protected flow is an annual occurrence in Minnesota. When a surface water appropriation is granted, the Department of Natural Resources explains the protected streamflow requirements to the appropriator so that the latter understands that appropriators could be curtailed when streamflow falls below the protected flow level [6 Minn. Code of Agency Rules, § 1.5051(B)(7)(a) (4 August 1980)].

When streamflow, as measured at gaging stations, drops below or to the protected flow level, the Department will order surface water appropriators to stop withdrawals to ensure that the protected flow is maintained. Appropriators may reduce or rotate their diversions, or may release substitute water, in order to maintain the protected flow, if the appropriators have adopted a water use contingency plan approved by the Department [6 Minn. Code of Agency Rules, § 1.5055(B)(4)(a) (4 August 1980)].

Enforcement, surveillance, and conservation is informally assisted by Department of Natural Resources fish and wildlife officers and the general public. If an appropriator has been notified to cease withdrawals and he

notices that his neighbor is continuing to divert surface water, the appropriators may so notify the Department.

Groundwater uses may also be subject to maintenance of protected flow levels. If the Department of Natural Resources determines, based on substantial evidence, that a direct relationship between ground and surface water exists such that protected flows would be adversely affected, the amount and timing of the proposed groundwater appropriation must be limited [6 Minn. Code of Agency Rules, § 1.5052(B)(3) (4 August 1980)].

EVALUATION

The Minnesota protected flows program is reasonably effective in protecting instream uses. Some limitations exist, however, regarding the data base for establishing protected flow levels.

Data Base for Protected Flows Designation

The principal bases for establishing protected flow levels is U.S. Geological Survey streamflow records. Historical low flows may or may not be a good indicator of what quantity of water is needed for particular instream uses. If the protected flow level is too high, appropriators may be denied water they need with no corresponding public benefit. If the protected flow level is too low, instream uses will not be protected during low flow periods.

The Minnesota Department of Natural Resources has recognized that estimates of fish needs based on biological factors would be a more precise method for defining instream uses for that purpose. The Department is attempting to develop methods for estimating fishery needs to address this problem through its fish and wildlife programs and through the State water planning programs.

Drought

During drought, restricting withdrawals by appropriators may not be sufficient to protect instream uses. In these circumstances, natural streamflow will need to be augmented to continue instream uses. This alternative is discussed later in this report.

The Minnesota protected flows program protects instream water use, particularly where those uses are threatened by irrigation withdrawals. While additional data regarding instream uses would allow those needs to be specified with more precision, the existing program seems to protect instream uses to a significant degree.

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STATE WATER PLANNING

OPPORTUNITY

The Minnesota Water Planning Board is required to prepare a State water plan which may be used by the Minnesota Department of Natural Resources in granting water use permits and impoundment permits. The plan could identify instream flow needs which should be protected in granting water appropriation permits [Minn. Stat. Ann. 105.39(1), 105.41 (1977 and 1981 Supplements)].

BACKGROUND

The Department of Natural Resources is required to develop a State water resources conservation program (State water plan) for water conservation, allocation, and development [Minn. Stat. Ann. 105.39(1) (1977)]. In developing the program, the Department is required to consider long-range water needs for fish and wildlife, recreation, and water quality control needs, among others. The Department is to be guided in the program in issuing appropriation permits and the regulation of dams and water control structures.

In 1977, the responsibility for State water planning was given to the Minnesota Water Planning Board [Minn. Stat. Ann. 105.401 (1981)]. The Department of Natural Resources does maintain a water appropriation and use planning program, however [6 Minn. Code of Agency Rules, § 1.5058 (4 August 1980)]. It is unclear whether the Department of Natural Resources is required to follow a State water plan prepared by the Water Planning Board in implementing the Department's water regulation authorities.

EXAMPLE

In 1979, the Water Planning Board prepared the report, Towards Efficient Water Allocation and Management. The report is the State framework study, which inventories water resources availability, uses, and problems in a general manner. The report is policy-oriented and does not provide a blueprint for water development and use. The report concluded that water supplies in Minnesota are generally adequate in quantity and quality, but that management systems are needed to protect the water resource for future generations.

Regarding instream uses, the report recommended: (1) That the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, and the Water Planning Board cooperate in establishing Statewide guidelines for identifying instream flow needs; and (2) that instream flow needs be evaluated in problem areas. The Water Planning Board has contracted with the U.S. Army Corps of Engineers to simulate streamflows in the Mississippi and Minnesota

Rivers to help identify instream flow requirements. These studies are expected to be available in late 1982. This information will be evaluated by the Department of Natural Resources to determine whether the analytical techniques developed to evaluate instream flow requirements can be used by the Department in its protected flows program (discussed above).

EVALUATION

The respective water planning roles of the Department of Natural Resources and the Water Planning Board are unclear. For example, it is unclear whether the framework study is specific enough to be used in guiding the Department in its protected flow program. The development by the Water Planning Board of techniques to analyze instream flow requirements, however, may be a significant contribution to administering the protected flows program.

SOURCES

Ditmore, J. 1981. Research Director. Minnesota Water Planning Board. Personal communication. 21 August.

Minnesota Water Planning Board. 1979. Towards Efficient Water Allocation and Management. St. Paul, Minnesota, Water Planning Board.

Rieke, H. 1981. Supervisor. Water Appropriators Unit, Division of Waters, Minnesota Department of Natural Resources. Personal communication. 28 April.

STATE WATER PERMIT DISCRETIONARY AUTHORITY

OPPORTUNITY

The Minnesota Department of Natural Resources could protect instream values through exercising its administrative discretion in appropriation proceedings by disapproving proposed activities that would interfere with instream values, by conditioning its approval upon the protection of instream uses, or by modifying or cancelling permits granted.

BACKGROUND

A Department of Natural Resources permit is required for surface and groundwater appropriation, dam construction, and stream channel modifications [Minn. Stat. Ann. 105.41, 105.42 (1977 and 1981)]. Permit applications must identify environmental consequences of the proposed activity, including effects on water and related land resources, unavoidable detrimental effects, and alternatives to the proposed activity [Minn. Stat. Ann. 105.44(1) (1981)]. The Department is required to consider the public welfare in permit proceedings, and is authorized to require modifications of the proposed activity as a condition of approval [Minn. Stat. Ann. 105.45, 105.44(2) (1981)]. The Department may also add additional permit conditions after a permit has been issued, and may cancel any permit issued if necessary to protect the public welfare [Minn. Stat. Ann. 105.44(9) (1977)].

EXAMPLE

The Department of Natural Resources has broad discretion to ensure that water appropriations and other water related activities are carried out in a fashion to protect instream uses. An example of how this approach was implemented is the retroactive application of protected flow requirements to existing streamflow appropriations. When protected flow levels are established on a stream, the Department would notify existing appropriators that their permits are now conditioned on maintaining the protected flow level (6 Minn. Code of Agency Rules, § 1.5052(B)(2)(f) (4 August 1980)]. The appropriator can request a public hearing regarding his permit modification.

EVALUATION

The discretionary authority of the Minnesota Department of Natural Resources gives the Department ample authority to condition, modify, or revoke water use permits to protect instream uses. The principal difficulty, discussed earlier in the Protected Flows Program section, is the lack of data to

quantify instream flow requirements. Once this information is available, however, the Department has broad authority to modify existing water use permits to maintain the protected flow levels.

SOURCES

Rieke, H. 1981. Supervisor. Water Appropriation Unit, Division of Waters, Minnesota Department of Natural Resources. Personal communication. 12 March.

Rieke, H. 1981. Supervisor. Water Appropriation Unit, Division of Waters, Minnesota Department of Natural Resources. Personal communication. 28 April.

STREAMFLOW AUGMENTATION

OPPORTUNITY

Streamflow may be augmented with impounded surface water or groundwater to protect instream values.

BACKGROUND

When the protected streamflows program does not protect streamflow to the extent necessary to protect instream values, streamflow may be augmented by stored water or by pumping groundwater into a stream. A Minnesota Department of Natural Resources permit is needed before groundwater can be withdrawn [Minn. Stat. Ann. 105.41(1) (1981)]. Department of Natural Resources approval is needed before water is released from a reservoir for instream purposes, and a permit from the Department is needed to construct a dam [Minn. Stat. Ann. 105.42(1) (1981); Rieke 1982].

EXAMPLE

Impounded surface water has not been used to augment streamflow to protect instream values. If this alternative was attempted, Department of Natural Resources officials should be notified of the plan so that water appropriation officials could prevent appropriators from diverting stored water from the stream before the instream purpose had been accomplished. The Department does protect deliveries to downstream users (Rieke 1982).

Groundwater has not been appropriated in Minnesota to augment streamflow, although appropriators have pumped groundwater into streams to maintain protected flow levels as a condition of their surface water permit (Grant 1981). In addition, groundwater has been appropriated to augment the water in wetlands and lakes. Implementation of this alternative requires applying to the Department of Natural Resources for a groundwater appropriation. In addition, the Department of Natural Resources should be requested to prevent appropriators from diverting the supplemental water until the instream flow objectives have been accomplished.

EVALUATION

The use of supplemental water to augment streamflows may be an effective method to protect instream values where other alternatives are unavailable or do not protect the desired level of streamflow. Augmenting streamflows with stored water or groundwater allows the appropriator to control the quantity of

streamflow. For example, if 20 cubic feet per second of streamflow is desired to protect instream values, enough stored water or groundwater could be used to augment streamflow to achieve the desired level of streamflow.

Department of Natural Resources cooperation is necessary to successfully augment streamflow with stored water or groundwater. If, for example, surface water appropriators are allowed to divert supplemental water from a stream before instream objectives have been achieved, this alternative will be successful only on a random basis.

SOURCES

Grant, H. 1981. Hydrologist. Water Appropriation Unit, Division of Waters, Minnesota Department of Natural Resources. Personal communication. 21 August.

Rieke, H. 1982. Supervisor, Water Appropriation Unit, Division of Waters, Minnesota Department of Natural Resources. Personal Communication. 20 July.

Thomas, L. 1981. Hydrologist. Water Appropriation Unit, Division of Waters, Minnesota Department of Natural Resources. Personal communication. 17 August.

WILD AND SCENIC RIVERS

OPPORTUNITY

The Minnesota Department of Natural Resources is authorized to designate river corridors as wild, scenic, or recreational. Land uses and other activities interfering with the wild, scenic, or recreational character of a designated river corridor may be controlled through land acquisition and land and recreation use control authorities.

BACKGROUND

The purpose of the Minnesota Wild and Scenic Rivers Act (passed in 1973) is aptly described in the legislative preamble to the Act:

The legislature finds that certain of Minnesota's rivers and their adjacent lands possess outstanding scenic, recreational, natural, scientific, and similar values. Because it is in the interest of present and future generations to retain these values, it is hereby declared to be a policy of Minnesota and an authorized public purpose to preserve and protect these rivers. [Minn. Stat. Ann. 104.32 (1977)].

The Minnesota Wild and Scenic Rivers Act authorizes the Department of Natural Resources to designate river corridors as wild, scenic, or recreational to protect and retain their scenic, recreational, natural, historical, scientific, or similar values. Wild rivers must be free flowing (without significant impoundment or channel modification), must have excellent water quality, and must have adjacent lands that are essentially primitive. Scenic rivers must be free flowing with largely undeveloped adjacent lands. Recreational rivers may have undergone significant impoundment or diversion in the past, and may have adjacent lands that are considerably developed, but must be capable of being managed for wild, scenic, or recreational purposes [Minn. Stat. Ann. 104.33 (1977)].

The Department of Natural Resources is responsible for designating rivers or river segments for inclusion in the wild and scenic river system [Minn. Stat. Ann. 104.34(1)]. The Department prepares a plan for management of the proposed designated river corridor [Minn. Stat. Ann. 104.35(1) (1977)]. After a review of the plan by local officials and the general public, the Department may designate the proposed river corridor as wild, scenic, or recreational, and may adopt a management plan for the area [Minn. Stat. Ann. 104.35(3) (1977)]. The Minnesota legislature may alter the Department's designation or

designate additional rivers as wild, scenic, or recreational [Minn. Stat. Ann. 105.35(4) (1977)].

After a river has been designated, any county or municipality containing part of the designated river area must, within six months, adopt land use regulations to conform to the management plan [Minn. Stat. Ann. 104.36(1) (1977)]. If the city or county fails to adopt the appropriate land use controls, the Department is required to adopt them. The validity of land use controls adopted by the Department was upheld in 1979 by the Minnesota Supreme Court [Pine County v. State Dept. of Natural Resources, 280 N.W.2d 625 (Minn. Supreme Court 1979)].

The Department of Natural Resources may also acquire land by purchase, lease, scenic easement, gift, or exchange for management of designated river areas [Minn. Stat. Ann. 104.37(1) (1981)]. The Department may also develop state lands along designated rivers. Administrative rules were promulgated in 1974. These rules (Minnesota Rules NR 78-81) contain Statewide minimum standards for designated rivers.

EXAMPLE

Designated rivers include the Kettle River (Pine County), the Mississippi River (from St. Cloud to Anoka), the North Fork of the Crow River (Meeker County), the Minnesota River (Lac Qui Parle to Franklin), the Rum River (Lake Ogetchi to Mississippi River), and the Cannon River (Fairbault to Mississippi River). The St. Croix River is a Federal Wild and Scenic River, the lower segment from Stillwater to the Mississippi River being jointly administered by the States of Minnesota and Wisconsin. [Applicable Minnesota laws and rules - Minn. Stat. Ch. 104.25 (1973), Minnesota Rules NR 2200-2202.] Other rivers are being studied for inclusion in the wild and scenic river system. Approximately 440 miles of rivers and streams are included in the Minnesota wild and scenic river system.

The Department of Natural Resources has exercised its authority in adopting river zoning ordinances for the Kettle River in Pine County and for the Mississippi River in Sherburne County. The Pine County ordinance was appealed in court. The District Court ruled that the Department's zoning ordinance was unconstitutional to the extent that it was more severe than the county's ordinance. The Department's ordinance affected land approximately one-fourth mile on each side of the river, and required a greater minimum lot size, minimum frontage, and building setback from the water and bluff line, and was more restrictive of timber clear cutting. The Minnesota Supreme Court reversed the District Court opinion and ruled that the Department's ordinance, and the Minnesota Wild and Scenic Rivers Act, were constitutional. The Court ruled that:

The [Department's] Kettle River ordinance merely restricts uses of property which would have harmful spillover effects on a major public resource, the river corridor, and on the property of other landowners near the river. These restrictions operate to the reciprocal advantage of all landowners with property near the river, who will reap the

aesthetic and economic benefits of the preservation of the river corridor in its natural state [Pine County v. State Dept. of Natural Resources, 280 N.W.2d 625 (1979)].

While the zoning authority is the most powerful tool the Department has to protect the river corridor, the Department has also purchased scenic easements in wild and scenic river corridors. These conservation easements are perpetual, and prohibit any building or topographical modifications, drainage or subdivisions, or cutting of native vegetation except pursuant to an approved woodlot management plan. The easements usually run 400 feet on each side of the river.

Easements can be purchased where land development pressure is low. Where development pressure is high, the Department has found it difficult to compete with the private market for land rights. The Department attempts to anticipate where development is likely to occur and to acquire easements in those areas before development pressures prevent the Department from purchasing conservation easements.

EVALUATION

The wild and scenic river program is an effective means for protecting instream uses where the river corridors qualify for wild, scenic, or recreational river designation. The land and conservation easement acquisition program and land use control authorities permit the Department of Natural Resources considerable latitude in preventing land uses and other activities that could interfere with instream uses. The Department land use control authority, the part of the program most vulnerable to legal attack, has been upheld by the Minnesota Supreme Court.

While the Department of Natural Resources does have considerable latitude in preventing activities that would interfere with instream values, this alone may not be adequate to ensure adequate streamflow to protect instream uses. Where streamflow is reduced from drought or upstream activities (including groundwater withdrawals), such that instream uses are interfered with, the Department could consider other alternatives, discussed elsewhere in this report, to augment streamflow to protect instream uses.

An additional limitation of this alternative is that areas possessing instream values, but not qualifying as wild, scenic, or recreational, could not be protected through the wild and scenic river program. They could, however, qualify for similar protection under the critical areas program, and shoreland programs discussed later in this report.

SOURCES

Rieke, H. 1981. Supervisor. Water Appropriations Unit, Division of Waters, Minnesota Department of Natural Resources. Personal communication. 28 April.

Swenson, P. 1981. Supervisor. Rivers Section, Minnesota Department of Natural Resources. Personal communication. 21 August.

Bureau of Outdoor Recreation. 1971. Outdoor Recreation Action 43:11-12. U.S. Department of the Interior.

CRITICAL AREA DESIGNATION

OPPORTUNITY

Areas with instream values of Statewide importance may be protected through the designation of critical areas [Minn. Stat. Ann. 1160.06 (1977)].

BACKGROUND

The purpose of the critical areas law is expressed in the legislative preamble to a 1977 act:

The legislature finds that the development of certain areas of the state preserving important historical, cultural, or esthetic values, or natural systems which perform functions of greater than local significance, could result in irreversible damage to these resources, decrease their value and utility for public purposes, or unreasonably endanger life and property. The legislature therefore determines that the state should identify these areas of critical concern and assist and cooperate with local units of government in the preparation of plans and regulations for the wise use of these areas [Minn. Stat. Ann. 1160.01 (1977)].

Developments in designated "critical areas" require a development permit and must be consistent with an approved critical area land use plan [Minn. Stat. Ann. 1160.12 (1977)]. Areas where government financed (directly or indirectly) development may have a significant impact on historical, natural, scientific, or cultural resources of Statewide importance may be designated by the Governor as critical upon the recommendation of the Minnesota Environmental Quality Board [Minn. Stat. Ann. 1160.05-.06 (1977)].

Development is defined to include: building modification or demolition; a change in land use intensity; alteration of the shore or bank of a river, stream, lake, or pond; mining or other excavation; land subdivision or site preparation; or waste disposal [Minn. Stat. Ann. 1160.03(7) (1977)].

Cities and counties are required to adopt land use plans and zoning regulations controlling development in critical areas [Minn. Stat. Ann. 1160.07 (1977)]. Development permits in critical areas can be granted by local units of government only if the development is permitted in the critical area designation order, or is essential to protect the public health, safety, and welfare because of an emergency, and the development would have been granted under local regulations in effect when the critical area was designated

[Minn. Stat. Ann. 1160.11-.12 (1977)]. If, within one year of the critical area designation, a city or county does not adopt a critical area zoning ordinance meeting State guidelines, the Minnesota Environmental Quality Board must adopt a critical area zoning regulation [Minn. Stat. Ann. 1160.09, 1160.06(2)(b) (1977)].

EXAMPLE

A Statewide inventory prepared by the Minnesota Environmental Quality Board identified over 50 areas for potential critical area designation. Many of these areas were in river corridors. The only critical area designated to date is a 40 mile segment of the Upper Mississippi River between the St. Paul-Minneapolis metropolitan area and the Mississippi River confluence with the St. Croix River. The purpose of the designation was to protect the remaining natural areas in the river corridor by keeping development out of sensitive areas, those with steep slopes, wildlife areas, etc. The designation is from bluffline to bluffline in the river corridor. Twenty local governments are in the critical area, six of which have approved land use plans and zoning ordinances. The remaining plans and ordinances are in the review and approval process. Land use regulations include restricting development on steep slopes, minimum lot size, construction site regulations, and soil erosion-runoff controls (Klueger 1981).

EVALUATION

The critical areas program seems to be an effective way to protect the remaining natural river corridors and associated instream uses in developed areas in the face of further land development pressures. The critical area law is a useful complement to the wild and scenic rivers system, discussed earlier in this report. The critical areas program may be used to protect river corridors that do not qualify for wild, scenic, or recreational river designation.

SOURCES

Klueger, R. 1981. Minnesota Environmental Quality Board. Personal communication. 21 August.

STATE WILDLIFE AND RECREATIONAL LAND ACQUISITION

OPPORTUNITY

The Minnesota Department of Natural Resources may acquire property in river corridors for fish, wildlife, and recreational purposes. The acquisition and management of Department wildlife and recreational lands may protect instream uses by preventing land uses and other activities in river corridors that would interfere with instream uses. Eighteen rivers were designated as canoe and boating routes under Minnesota Statute Chapter 85.32. When setting a protected flow, consideration is given to the need for canoeing and boating. This is especially important when dealing with hydropower and the operation flow for dams (Rieke 1982).

BACKGROUND

The Department of Natural Resources is authorized to acquire land by gift, lease, purchase, easement, land exchange, or, under certain circumstances, by condemnation for public hunting grounds, game refuges, wildlife management areas, outdoor recreation areas, game farms, fish hatcheries, and State parks [Minn. Stat. Ann. 97.48(12)-(14) (1977)]. The Department is also authorized to acquire land for the management and protection of endangered and threatened species, and to establish and maintain scientific and natural areas [Minn. Stat. Ann. 97.48-448, 84.033 (1977)]. The Department also manages State lands and public waters [Minn. Stat. Ann. 84.027(2) (1977); Minn. Stat. 85-32].

EXAMPLE

While the Department of Natural Resources enjoys broad land acquisition authority, little land has been acquired in river corridors except in State parks or in designated wild or scenic river areas. Examples include the Banning and St. Croix State parks, both located within the Kettle scenic river area.

EVALUATION

The Department of Natural Resources has a wide variety of authorities to acquire property for purposes that could include protection of instream values. Successful implementation of this alternative requires adequate funding for property acquisition.

While property acquisition is an effective means for preventing land uses or other activities that would interfere with instream values, it may not be enough to protect instream values. Designation of protected streamflows may be necessary to prevent or limit appropriations that could interfere with instream values. When streamflow is reduced because of drought, impoundments, or diversions (including groundwater withdrawals), streamflow augmentation would be necessary to protect instream values. These alternatives are discussed elsewhere in this report.

SOURCES

- Rieke, H. 1982. Supervisor, Water Appropriation Unit, Division of Waters, Minnesota Department of Natural Resources. Personal Communication. 20 July.
- Swenson, P. 1981. Supervisor. Rivers Section, Minnesota Department of Natural Resources. Personal communication. 21 August.

CONSERVATION EASEMENTS

OPPORTUNITY

A variety of public agencies may acquire conservation easements ("conservation restrictions") to preserve natural, scenic, open, or wooded areas. Acquisition of conservation easements can prevent land uses and other activities that would interfere with maintenance of instream uses.

BACKGROUND

The Minnesota Department of Natural Resources and nonprofit charitable corporations, whose purposes include conservation of land or water areas, are authorized to acquire conservation easements by any voluntary means, that is, excluding condemnation [Minn. Stat. Ann. 84.64 (1977, 1981)]. The conservation easement is a legal restriction on the use of land or water areas that are predominantly in their natural, scenic, open, or wooded condition, or that are suitable for fish and wildlife habitat [Minn. Stat. Ann. 84.64(2) (1977)]. The conservation easement can limit or prohibit structures, landfills, destruction of vegetation, mining or other excavation, land uses other than preservation of an area's natural condition, or any other acts detrimental to fish and wildlife habitat preservation. In other words, conservation easement means that a landowner sells or gives to the public agency the landowner's right to develop his land for certain purposes. This, in effect, means that the land cannot be developed for such purposes and that the natural characteristics of the land will not be altered by more intensive land uses. The conservation easement is a legally binding restriction on the use of the particular tract of land involved, and is in force for the period specified in the easement (which may be perpetual), even if the land changes title. The agency holding the easement is authorized to go to court to prevent land use or development inconsistent with the easement [Minn. Stat. Ann. 84.65 (1977, 1981)].

Conservation easements may be donated or purchased. The price of a perpetual conservation easement could be the difference between the market value of the property and its value as restricted by the easement. For example, if land is worth \$5,000 an acre on the open market and \$2,000 if its use is restricted pursuant to a conservation easement, the value of the easement would be \$3,000.

EXAMPLE

Conservation easements have been used extensively in the wild and scenic river program, as described elsewhere in this report. Conservation easements

have not otherwise been used to protect natural areas in river corridors, although conservation easements have been purchased to protect wetlands.

EVALUATION

The conservation easement can be an effective means for preventing land uses incompatible with protection of instream uses. Adequate funding for the purchase of condemnation easements is necessary, however, for this to be an effective means for protecting instream values.

The conservation easement law is ambiguous regarding whether the easement may be condemned for some other public use. Establishing that conservation easements can be acquired by another public agency only under unusual circumstances, if at all, would resolve this ambiguity.

SOURCES

Swenson, P. 1981. Supervisor. Rivers Section, Minnesota Department of Natural Resources. Personal communication. 21 August.

ENVIRONMENTAL POLICY ACT

OPPORTUNITY

The Minnesota Environmental Policy Act requires that the environmental impacts of State and local government actions be analyzed before they are undertaken [Minn. Stat. Ann. 1160.04(2)(a) (1981)]. Environmentally disruptive actions cannot be undertaken for which prudent, feasible alternatives are available [Minn. Stat. Ann. 1161.04(6) (1977)]. State activities interfering with instream values must be reviewed under the Act and must be modified unless no prudent and feasible alternative exists.

BACKGROUND

The objectives of the Minnesota Environmental Policy Act are described in the law's legislative preamble:

[It] is the responsibility of the state government to use all practicable means, consistent with other essential considerations of state policy, to improve and coordinate state plans, functions, programs and resources to the end that the state may:

Fulfill the responsibility of each generation as trustee of the environment for succeeding generations ...

Discourage ecologically unsound aspects of population, economic and technological growth, and development, and implement a policy such that growth occurs only in an environmentally acceptable manner ...

Define, designate, and protect environmentally sensitive areas;

Establish and maintain statewide environmental information systems efficient to gauge environmental conditions ...
[and]

Preserve important existing natural habitats of rare and endangered species of plants, wildlife, and fish, and provide for the wise use of our remaining areas of natural habitation, including necessary protective measures where appropriate [Minn. Stat. Ann. 1160.02(2) (1977)].

These broad objectives are implemented by requiring State or local governmental entities undertaking or authorizing activities significantly affecting the environment to assess the environmental impacts of the proposed activity [Minn. Stat. Ann. 1160.04(2)(a) (1981)]. The Act defines "governmental action" as activities, including projects wholly or partially conducted, permitted, assisted, financed, regulated, or approved by State, local, and Federal government agencies [Minn. Stat. Ann. 1160.04(10)(c)-(d) (1981)]. The adequacy of the environmental impact report may be challenged in court by the public or by the Minnesota Environmental Quality Board [Minn. Stat. Ann. 1160.04(10) (1981)]. No activities may be undertaken or authorized by governmental entities which pollute, impair, or destroy the natural resources in the State, including water, so long as there is a feasible and prudent alternative available that is consistent with protection of natural resources [Minn. Stat. Ann. 1160.04(6) (1977)]. The Minnesota Environmental Quality Board is authorized to prevent or modify the proposed State activity that would pollute, impair, or destroy natural resources in the State [Minn. Stat. Ann. 1160.04(a) (1977)].

EXAMPLE

While the Environmental Policy Act has not been used to protect instream values, it has been used to justify requiring selection of a more expensive highway route to protect a lake [Application of City of White Bear Lake, 247 N.W.2d 901 (Minn. Supreme Court, 1976)]. Most of the impact statements have been prepared regarding real estate development. The environmental concerns raised in this regard have been loss of wildlife habitat rather than loss of fishery resources.

EVALUATION

The Environmental Policy Act gives citizens an opportunity to review and challenge proposed activities, including the grant of a State permit or license, which may threaten instream uses. The environmental impact review can be challenged in court for its adequacy. If a prudent and feasible alternative exists that would be less environmentally disruptive, the Act requires that such alternative be undertaken. The Act also requires State agencies to consider the environmental consequences of their activities, so that activities for which State approval is needed are less likely to cause environmental disruption.

Successful use of the Environmental Policy Act requires scrutiny of and participation in the environmental impact report preparation and approval process, sufficient funds to litigate contested cases, and proof that a prudent and feasible alternative exists that is environmentally preferable to the proposed activity.

SOURCES

Haukedahl, C. 1981. Special Assistant Attorney General. Minnesota Attorney General's office. Personal communication. 21 August.

Rulland, T. 1981. Manager. Policy Analysis and Review Section, Minnesota Environmental Quality Board. Personal communication. 21 August.

Tourville, A. 1981. Special Assistant Attorney General. Minnesota Attorney General's office. Personal communication. 21 August.

ENVIRONMENTAL RIGHTS ACT

OPPORTUNITY

Actions adversely affecting instream uses may be challenged in court by private individuals under the Minnesota Environmental Rights Act.

BACKGROUND

The objectives of the Environmental Rights Act are summarized in its legislative preamble:

The legislature finds and declares that each person is entitled by right to the protection, preservation, and enhancement of air, water, land, and other natural resources located within the state and that each person has the responsibility to contribute to the protection, preservation, and enhancement thereof. The legislature further declares its policy to create and maintain within the state conditions under which man and nature can exist in productive harmony in order that present and future generations may enjoy clean air and water, productive land, and other natural resources with which this state has been endowed. Accordingly, it is in the public interest to provide an adequate civil remedy to protect air, water, land and other natural resources located within the state from pollution, impairment, or destruction [Minn. Stat. Ann. 1168.01 (1971)].

These policy objectives are implemented by giving private individuals the legal right to go to court to protect natural resources, including instream values, from pollution, impairment, or destruction [Minn. Stat. Ann. 1168.03 (1977)]. The person bringing the suit must prove either that the proposed activity would violate a State requirement or license, or would pollute, impair, or destruct air, water, or other natural resources [Minn. Stat. Ann. 1168.04 (1977)]. Activities not subject to the Act include activities pursuant to and within the scope of Department of Natural Resources Council water use permit and activities of family farm owners [Minn. Stat. Ann. 1168.03(1), 1168.02(2), (6) (1977)]. If the person bringing the suit can also prove that there is a feasible and prudent alternative to the proposed activity, a court will stop the environmentally disruptive conduct. The fact that the proposed alternative is more expensive than the contested alternative does not mean that the proposed alternative is not prudent or feasible. In other words, the contested activity will not be allowed simply because it is the least expensive alternative if a prudent and feasible alternative is available. If the court

doubts that the person bringing the suit has the ability to pay any judgment against him, the court may require the person bringing the suit to post a bond up to \$500 [Minn. Stat. Ann. 1168.06 (1977)].

EXAMPLE

While the Environmental Rights Act has not yet been used to protect instream values specifically, it has been used to protect a lake from pollution from inadequate sanitary facilities [Corwine v. Crow Wing County, 244 N.W.2d 482 (Minn. Supreme Court, 1976)]. In another case, the Act was used to protect a marsh from destruction pursuant to highway construction [County of Freeborn by Terveson v. Bryson, 243 N.W.2d 316 (Minn. Supreme Court, 1976)]. In a third case, a marsh was protected from the noise and lead shot pollution (a threat to waterfowl feeding in the marsh) associated with a gun club [Minnesota Public Interest Research Group v. White Bear Rod and Gun Club, 257 N.W.2d 762 (Minn. Supreme Court, 1977)]. While no case under the Act directly relating to instream uses has reached the Minnesota Supreme Court, two cases involving instream uses are being litigated in District Court. One involves alleged degradation of Keene and Miller Creeks from a proposed shopping mall development. The other involves an alleged degradation of Coon Creek by a proposed watershed district drainage project.

EVALUATION

The Minnesota Environmental Rights Act is basically a codification of the public trust doctrine discussed later in this report. The Environmental Rights Act gives individuals a powerful legal tool with which to challenge activities that would interfere with instream values. Successful implementation of this alternative includes adequate funds to finance the litigation, proof that the proposed activity will disrupt instream values, and proof that a feasible, prudent, and less environmentally disruptive alternative is available.

SOURCES

- Hankedahl, C. 1981. Special Assistant Attorney General. Minnesota Attorney General's office. Personal communication. 21 August.
- Tourville, A. 1981. Special Assistant Attorney General. Minnesota Attorney General's office. Personal communication. 21 August.

PART II: IOWA

INTRODUCTION

Iowa has perhaps some of the best statutes and administrative programs for protecting instream water uses in the United States. Rights to withdraw ground and surface water in Iowa are regulated by the Iowa Natural Resources Council, and are conditioned on maintenance of protected flow levels. The protected flow program, while not perfect, does protect instream water uses to a significant degree throughout Iowa. The success of the protected flow program is based in part upon Iowa's relatively humid climate and the related fact that only a few hundred Iowans divert surface water for irrigation purposes. Less precipitation would mean less available streamflow and greater competition for its use. The protected flow program also appears to be effectively administered by the Iowa Natural Resources Council.

Other aspects of Iowa law help protect instream uses, such as the protected water areas program of the Iowa Conservation Commission and the administration of the stream channelization permit program by the Iowa Natural Resources Council. However, the protected flows program is the single most important part of Iowa law for protecting instream uses. The Iowa protected flows program is a good model for eastern and midwestern States interested in administrative programs for protecting instream uses.

PROTECTED FLOW REQUIREMENTS

OPPORTUNITY

Surface and groundwater use permits issued by the Iowa Natural Resources Council are subject to maintenance of the established average minimum flow.

BACKGROUND

The Iowa Natural Resources Council is authorized to issue permits to withdraw streamflow, to impound streamflow, and to withdraw groundwater [Iowa Code Ann. 455A.19 to 455A.21 (1971 and 1980 Supplement)]. Permits issued by the Iowa Natural Resources Council are subject to the established minimum flow requirements [Iowa Code Ann. 455A.22 (1971)]. When surface water or groundwater withdrawals threaten the established minimum streamflows, the Iowa Natural Resources Council will regulate surface or groundwater withdrawals to protect the minimum streamflow.

EXAMPLE

Protected flows have been designated for major Iowa streams where U.S. Geological Survey and U.S. Army Corps of Engineers gaging stations have been established [580 Iowa Adm. Code 3.9(3) (4 October 1978)]. The purposes for which protected flows are established include fish and wildlife use, recreational use, wasteload assimilation, and preservation of aesthetic values [580 Iowa Adm. Code 3.9(1) (4 October 1978)]. The protected flow levels are based on statistical analysis of streamflow characteristics during low-flow periods by the U.S. Geological Survey [580 Iowa Adm. Code 3.9(2) (4 October 1978)].

Surface Water Withdrawals

Permits to withdraw water from streams for a consumptive use are conditioned upon maintenance of the protected flows. When streamflow, as measured at Federal stream gaging stations, reaches twice the protected flow level, consumptive water use permit holders (that is, irrigators) will be notified that restrictions on their withdrawals are likely to occur to maintain the protected flow. When measured streamflow approaches the protected flow level, the Natural Resources Council will order permit holders to cease their withdrawals to ensure that the protected flow is preserved [580 Iowa Adm. Code 3.4(1)(b), 3.4(2)(a) (4 October 1978)]. If the permit holder discharges sufficient replacement water into the stream to offset the withdrawals, however, withdrawals can continue [580 Iowa Adm. Code 3.4(1)(c), 3.4(2)(b)-(d) (4 October 1978)].

Regulation of surface water withdrawals to maintain the protected flow is an annual occurrence in Iowa. When a surface water use permit is granted, the Natural Resources Council will explain that the protected flow condition in the permit means that withdrawals will be stopped to maintain the protected flow. When the flow in a river is approaching the protected flow level, the Council will notify permit holders by telephone that water withdrawals must be curtailed.

During 1977, when streamflow was particularly low Statewide, the Natural Resources Council sent all permit holders a certified letter stating that no withdrawals could be made unless authorized by the Council. Authorization was accomplished by the permit holder calling the Council and was good for seven days only. The Council would monitor streamflow and authorize withdrawals only when the protected flow would not be violated.

A similar approach was used in 1981 when measured streamflow was twice the protected flow level. Permit holders were notified by mail that regulation of withdrawals was likely. Once permit holders were notified that withdrawals must stop, the permit holder could call the Natural Resources Council for a tape recorded message identifying on what streams withdrawals could be resumed. These tape recordings were updated weekly.

Enforcement and surveillance is informally accomplished by Iowa Conservation Commission conservation officers and by the general public. For example, if an irrigator has been notified to cease withdrawals and he notices that his neighbor is continuing his withdrawals, the irrigator will often so notify the NRC.

Groundwater Withdrawals

Water withdrawals from wells located within one-eighth of a mile from a stream will be regulated in the same general manner as surface water withdrawals. Withdrawals from wells are restricted to maintain the protected flow unless the permit holder can prove either that his withdrawals do not affect streamflow, or can provide supplemental water sufficient to offset the withdrawals [580 Iowa Adm. Code 3.5(1)(b)-(c), (e); 3.5(2)(a), (c), and (3) (4 October 1980)]. Withdrawals from wells between one-eighth and one-quarter of a mile from larger streams (that is, those with a drainage area of more than 50 square miles) are restricted when streamflow reaches the seven-day one-in-ten year low flow, unless the permit holder can demonstrate that his withdrawals do not affect streamflow, or provides supplemental water sufficient to compensate for his withdrawals [580 Iowa Adm. Code 3.5(2)(b), (e), and (f) (4 October 1978)]. (The seven-day ten-year low flow condition occurs relatively infrequently.) In addition, other conditions may be imposed on such groundwater users to ensure adequate streamflow to maintain protected instream uses, including fish, wildlife, recreation, and aesthetics [580 Iowa Adm. Code 3.5(1)(d), 3.5(2)(d) (4 October 1978)].

However, there are five significant limitations on the program: (1) the lack of data to establish with some precision the quantity of water necessary for instream fish and wildlife needs; (2) the lack of data regarding the affect of groundwater withdrawals on streams; (3) the lack of stream gaging stations; (4) exempted water uses; and (5) droughts.

Instream Flow Data

The basis for the Iowa Natural Resources Council protected flow levels is statistical rather than biological. Ideally, the protected flow levels would be based on the water needs for specific fish or wildlife species at specific locations during specific periods. The Natural Resources Council protected flow levels, however, are primarily based on historical flows as measured or estimated by the U.S. Geological Society. The protected flow levels may be too high or too low to meet the fish, wildlife, or other instream flow protection objective.

Unfortunately, the instream flow requirements data are difficult and expensive to obtain. If they should become available in the future, however, the protected flow levels established by the Iowa Natural Resources Council could be adjusted accordingly. For example, if such information were developed by the Iowa Conservation Commission, the Commission could formally request the council to modify their protected flow levels accordingly [Iowa Code Ann. 17A.7 (1978)].

Groundwater-Streamflow Effects

Groundwater withdrawals within one-eighth of a mile (660 feet) are regulated as if they were surface water withdrawals. When measured streamflow approaches the protected flow level, permit holders will be required to stop making withdrawals. In addition, on larger streams, groundwater withdrawals from wells located between one-eighth and one-fourth mile from the stream will be ordered to stop when measured streamflow approaches the seven-day ten-year low flow level (which is lower than the protected flow level and which occurs infrequently). However, the precise depletion effect of a well pumping from an alluvial aquifer near a stream is not known. The depletion effect of pumping may not subside for several days or weeks after pumping has stopped. If this were the case, perhaps groundwater withdrawals should be stopped sooner than they are now (for example, when measured streamflow reaches twice the protected flow level). Conversely, if the stream effects of pumping groundwater are less than currently thought, groundwater withdrawals might be continued, perhaps at a reduced rate, rather than being stopped.

Information relating to groundwater-streamflow interrelationships is expensive to obtain and is site specific. If it should become available in the future, however, this information could be used to modify the Natural Resources Council's procedures for regulating groundwater withdrawals in the protected flows program.

Stream Gaging Stations

Stream gaging stations in Iowa are established by the U.S. Geological Survey or the U.S. Army Corps of Engineers. The State of Iowa does not have stream gaging stations. Permanent Federal stream gaging stations are located primarily on the major Iowa streams. Tributaries are gaged on an irregular basis only. This means that flows for the major streams, as measured by the Federal gaging stations, are assumed to be representative of tributary streamflows as well.

A problem with this approach is that streamflow conditions at the gaging stations may not accurately reflect the streamflow conditions on other portions of the river system. For example, low flow conditions at the gaging station may not reflect better flows in the tributaries. Conversely, a local rain may result in good streamflow at a gaging station which would not reflect what could be much lower flows upstream or in the tributaries.

The consequence of this is that stream gaging information may not be detailed enough to allow water use regulations to be imposed only when necessary. A low streamflow reading which does not reflect the better streamflow conditions upstream may result in more water uses being restricted than are needed to maintain the protected flow levels. Conversely, a high streamflow reading which does not reflect lower streamflow conditions in other parts of the stream system may mean that water use permit holders are not ordered to stop withdrawals when they should be.

The Iowa Natural Resources Council has acknowledged in a State water planning report that additional stream gaging stations would improve administration of the protected flows program. This would require additional funding. In addition, the Council has attempted to establish visual indices of streamflow by attaching to a bridge a pole against which streamflow can be measured. By inspecting the streamflow relative to markings on the pole, a fairly accurate local measure of streamflow can be obtained. Over time this method may become unreliable due to changes in channel structure.

Exempted Uses

Many water uses which began before 1957 are not regulated by the Iowa Natural Resources Council because of "grandfather" provisions in its enabling legislation. In addition, the Iowa Natural Resources Council generally has not imposed protected requirements in permits which authorize withdrawals of water by public water supply systems. These water uses could interfere with instream uses that would otherwise be protected by the protected flows program. These permits must be renewed within 10 years of issuance, however. If renewed, these permits could be conditioned to protected flow requirements if the water uses would significantly reduce streamflow.

Drought

When drought occurs, natural streamflow may be inadequate to maintain normal instream uses. In these circumstances, additional water would be needed to supplement natural streamflow. Flow augmentation alternatives are discussed elsewhere in this report.

In spite of these limitations, the Iowa Natural Resources Council protected flows program is an effective program for protecting instream uses.

SOURCES

Iowa Natural Resources Council. 1978. Iowa Water Plan 1978 Framework Study: Main Report. Des Moines: Iowa Natural Resources Council.

Smith, M. H. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communication. 22 April.

Szcodronski, K. 1981. River Planning Specialist. Iowa Conservation Commission. Personal communication. 14 August.

SCENIC RIVER SYSTEM

OPPORTUNITY

The Iowa Conservation Commission may designate a stream or stream segment as a natural river area for inclusion in the Iowa scenic river system [Iowa Code Ann. 108A.1 to 108A.7 (1980 Supplement)].

BACKGROUND

The Iowa Conservation Commission may designate a stream or stream segment as a natural river area if it possesses outstanding scenic, fish, wildlife, historic, or recreational values that should be preserved. The natural river area includes enough land adjacent to the river to protect and manage its natural character [Iowa Code Ann. 108A.2 (1980 Supplement)]. Prior to designating a natural river area as part of the Iowa scenic river system, the Conservation Commission is required to hold a public hearing in the county seat of any county within which the proposed scenic river flows [Iowa Code Ann. 108A.4 (1980 Supplement)]. Upon designation, the river and the adjacent land areas are to be permanently managed for the preservation or enhancement of their natural and cultural resources. However, the Conservation Commission does not have the authority to regulate land uses to implement the scenic river management objectives. Instead, Iowa cities and counties may zone or otherwise regulate land uses adjacent to the river to assist the Conservation Commission in scenic river management [Iowa Code Ann. 108A.6 (1980 Supplement)]. These local land use controls should establish adequate protection of the scenic river area to meet the intent of the scenic river designation. The Conservation Commission is responsible for recommending standards and guidelines for local scenic river area zoning ordinances. The Commission is also required to prepare a Statewide plan for the establishment, management, use, and administration of the scenic rivers system [Iowa Code Ann. 108A.5 (1980 Supplement)]. A River included in the Iowa scenic river system may also be included in the National Wild and Scenic River System [Iowa Code Ann. 108A.7 (1980 Supplement)].

In 1981, the Iowa Conservation Commission prepared the Statewide scenic rivers plan. The report considered protection not only of rivers but also of lakes and marshes. The report noted that the absence of a Statewide scenic rivers plan has hampered development of the scenic river system.

The report, entitled Iowa Protected Water Area: General Plan, evaluated areas for inclusion in the protected waters area program. The criteria for inclusion were: (1) whether the water features were naturally occurring or man-made; (2) whether the adjacent land areas were largely undeveloped; (3) whether the area visually appeared to be in a more natural state as

revealed by aerial surveys; (4) whether each of the seven landform regions in Iowa were represented; (5) whether there was local public support for the protected water program; (6) whether the area was close to major population centers; and (7) whether the proposed protected water area program was compatible with the priorities of both the county conservation board and the Iowa Conservation Commission.

Based on this evaluation, the General Plan recommended that a master plan be prepared for a segment of the Boone River in Webster County. The General Plan also recommended preparation of a master plan for the Upper Iowa River, the State's only designated natural river, if local support could be obtained for the protected waters area.

The master plan preparation process best illustrates how the scenic river/protected waters area program would work. The General Plan recommends a four-step procedure for master plan preparation and implementation:

1. The Iowa Conservation Commission would designate an area on an instream basis for potential inclusion in the scenic river/protected water areas program. The interim designation would identify that the Conservation Commission would begin preparation of a master plan for the area. Landowners would be encouraged to voluntarily maintain land uses compatible with the scenic river/protected water areas program objectives. Interim designation could be recommended by any individual, group, or agency.
2. The Iowa Conservation Commission would, within two years of the interim designation, prepare the scenic river/protected water area master plan. The master plan would document the resources to be protected, identify the area to be protected, and the protection methods to be used, describe any preliminary negotiations with landowners regarding land acquisition, and estimate the staff and funding requirements for permanent designation.
3. The Iowa Conservation Commission would approve the plan and forward it to the Governor and legislature. The Governor would have final authority to designate permanent protected water area, although only Conservation Commission approval is needed for scenic river designation [Iowa Code Ann. 108A.2 (1980 Supplement)].
4. The master plan would be implemented by the Conservation Commission upon receiving the necessary legislative funding authorizations [Iowa Conservation Commission, 1981].

The protected methods that could be used by the Iowa Conservation Commission once a scenic river area has been designated include land acquisition by purchase, donation, or condemnation; acquisition of conservation easements or other leasing arrangements; and, cooperation with local zoning officials. These authorities are not part of the Iowa scenic river law, but a part of the Conservation Commission's general authorities which are discussed elsewhere in this report.

EXAMPLE

One natural river has been designated in Iowa: the Upper Iowa River in Winneshieck and Wamabee counties. Little has been done since that designation, however, in part because no management plan had been prepared to evaluate how the natural river area should be managed and how those management objectives should be implemented.

Apparently, experience with past governmental efforts to protect the Upper Iowa River has led to the formation of the local Upper Iowa Preservation Association to retain private land use control. The reduced local support for the scenic river program stems in part from what the General Plan describes as the forceful attempt of the Federal government to include the Upper Iowa River in the National Wild and Scenic River System. The use of Federal condemnation authorities in developing a navigational lock and dam system and wildlife refuge system in the nearby Upper Mississippi River is another factor cited as contributing to local landowner resistance to the Upper Iowa River scenic river designation. A final concern is that the scenic river system will encourage increased recreational land and water uses that may conflict with local agricultural practices.

The General Plan recommends that a master plan be created for the Upper Iowa River if increased local public support for the protected river program develops. The General Plan estimates that the two-year cost for preparation of a master plan would be approximately \$63,000. No estimates were provided for implementation of the plan. The General Plan has been presented to the Iowa legislature but no legislative action has been taken to implement any of the plan's recommendations.

EVALUATION

The Iowa Protected Water Areas: General Plan recommends seven modifications of the Iowa scenic rivers law:

1. Addition of other water area types. The Iowa Conservation Commission recommended that natural lakes and wetlands be added to scenic and natural river corridors as qualifying for protection under the scenic river/protected water areas program.
2. More defined designation process. The current scenic river designation process is very general. The Iowa Conservation Commission recommended that the master plan preparation process, described above, be formally incorporated into the Iowa scenic river law. The General Plan noted that the requirements for approval by the Governor and legislature may give the program more credibility with the public, and could make the legislature more responsive to Conservation Commission recommendations.
3. Identify protection or management methods. The Iowa scenic rivers law mentions local zoning as the only management method for implementing the scenic river program, although the Iowa Conservation Commission is authorized by other legislation to

acquire property by purchase, gift, condemnation, or lease. The Conservation Commission felt that the scenic river law would be more self explanatory if these other management methods were explicitly included in the scenic rivers law.

4. Emphasize importance of cooperation between the Iowa Conservation Commission and local landowners. The General Plan notes that most of the land to be protected in the scenic rivers/protected water areas program are in private ownership, and that the Iowa Conservation Commission could never afford to acquire all that land itself. The program, therefore, will emphasize coordinating the protection of natural and cultural resources with existing private land uses. The Conservation Commission recommended that the necessity for this cooperation be recognized in the scenic rivers law by encouraging both landowners and the Conservation Commission to cooperate in implementing the scenic rivers/protected water areas.
5. Establish a procedure for amendment of Iowa Conservation Commission - landowner management agreements. The Iowa Conservation Commission anticipates that the scenic rivers/protected water areas program will be implemented by providing financial incentives to local landowners through leases, conservation easements, or (if they are legislatively authorized) tax incentives. Short term landowner agreements implementing these financial incentives probably would be more popular with landowners because they are more flexible. To clarify its authority in this regard, the Conservation Commission requested that the scenic river law be amended to specify a procedure by which landowner agreements could be modified.
6. Local tax reimbursement. When land is acquired by the Iowa Conservation Commission, the land goes off the county tax rolls. Similarly, if the Commission acquires a conservation easement, the property value of the land is likely to be reduced. The lost tax revenue usually means that the property taxes of the landowners in the county will be increased. Concern about possible property tax increases due to a scenic rivers/protected water areas program was cited in the Iowa Protected Water Areas: General Plan as a potential reason for lack of support for a scenic river/protected water area proposal.

The Conservation Commission suggested that the Iowa legislature authorize State reimbursement of cities and counties for any lost tax revenue resulting from the scenic river/protected water area program.

7. Public right of navigation. Providing public access for boating or canoeing would be one function of the scenic river/protected water area program. The General Plan notes the conflict in Iowa law between the public's right to navigate on Iowa rivers once public access is available and the legal requirement that

private landowners fence their livestock [Iowa Code Ann. 188.2 (1969)]. When a farmer or rancher owns land on both sides of a stream, he often will fence across the stream to give livestock access to land on both sides of the stream. These fences can interfere with public navigation on the stream.

The General Plan suggests two legislative alternatives for dealing with this problem along scenic river corridors. The first is to require that fences across a scenic river be designed both to contain livestock and to permit public recreational navigation. If this is not possible, the Iowa legislature could clarify that boaters and canoeists have a right to portage around any fence across a scenic river through gates established for that purpose. The General Plan suggested that landowners could be compensated for meeting these requirements as part of a scenic river protected water area program.

In its recommendations, the Iowa Conservation Commission implicitly rejects the notion of a greater Commission role in regulating land uses along a scenic river corridor. In Minnesota, cities and counties must adopt a scenic river zoning ordinance within six months of a wild and scenic river designation by the Minnesota Department of Natural Resources. If the city or county does not adopt the necessary zoning ordinance within six months of the designation, the Department of Natural Resources must adopt its own ordinance [Minn. Stat. Ann. 104.36 (1977)]. This approach involves a higher degree of regulation, which could cost the Iowa Conservation Commission local political support and legislative financial support for the scenic river program. This approach would, however, give the Conservation Commission great authority to implement the scenic river program.

Another option that could give the Conservation Commission more authority to induce counties to implement a scenic river zoning ordinance would be to condition any State payments in lieu of taxes on adoption of a scenic river ordinance. The Conservation Commission could also provide technical and financial assistance in preparing the scenic river ordinance. This would provide cities and counties some financial incentive to adopt a scenic river zoning ordinance.

As described in the General Plan, the scenic river program has not been implemented to any significant degree beyond the designation of the Upper Iowa River as a natural river. The General Plan describes how the scenic river program could become an effective means for protecting scenic river corridors and their associated instream uses. The existing law does provide a good basis for protecting scenic rivers. The legislative changes discussed above, however, would clarify and broaden the scenic river authorities of the Iowa Conservation Commission.

SOURCES

Iowa Conservation Commission. 1981. Iowa Protected Water Areas: General Plan. Des Moines: Iowa Conservation Commission.

Szcodronski, K. 1981. River Planning Specialist. Iowa Conservation Commission. Personal communication. 14 August.

STATE WATER PLANNING

OPPORTUNITY

In developing the State comprehensive water resources plan, the Iowa Natural Resources Council could approve water development that is compatible with protection of instream values [Iowa Code Ann. 455A.17 (1980 Supplement)].

BACKGROUND

The Iowa Natural Resources Council is required to develop a comprehensive Statewide water resources plan. The Natural Resources Council must consider fish, wildlife, and recreation, among other things, in developing the plan. Any water developments and uses for which the Natural Resources Council permits are required must be compatible with the plan. Activities subject to these requirements include surface and ground water withdrawals, water impoundments, and channel modifications [Iowa Code Ann. 455A.18 (1971)].

EXAMPLE

In 1978, the Iowa Natural Resources Council published the framework study portion of the Iowa water plan, which surveys water resources availability, use, and issues from a Statewide perspective. The report dealt with fish, wildlife, and recreation on a generalized Statewide basis. The report did not discuss instream flow requirements, but did discuss generally long-run water resources management objectives related to fish, wildlife, and recreation resources. The report also identified flat-water recreation needs and potential natural river areas.

EVALUATION

The protected flows program, discussed earlier in this report, accomplishes most of the instream flow protection objectives that could be accomplished by developing a State water plan. Future State water planning efforts, however, could refine the protected flow program by defining with more precision what quantities of water are needed in what location during what period to protect particular fish or wildlife species or to help quantify with more precision the depletion effect on streamflow of pumping wells near streams.

SOURCES

Iowa Natural Resources Council. 1978. Iowa Water Plan 1978 Framework Study; Main Report. Des Moines: Iowa Natural Resources Council.

Wiegand, J. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communication. 14 August.

STATE PURCHASE OF RESERVOIR SPACE

OPPORTUNITY

The Iowa Natural Resources Council may negotiate water releases from Federal impoundments to maintain instream values [Iowa Code Ann. 455A.17 (1980 Supplement)].

BACKGROUND

The Iowa Natural Resources Council is authorized to represent the State of Iowa in negotiations with the Federal government to obtain releases of stored water from Federal reservoirs [Iowa Code Ann. 455A.17 (1980 Supplement)]. These reservoir releases could be obtained to protect instream values. The Council may also purchase stored water from Federal reservoirs.

EXAMPLE

Four major reservoirs have been constructed by the U.S. Army Corps of Engineers in Iowa, primarily for flood control purposes: Rathbun Reservoir on the Chariton River; Coralville Reservoir on the Iowa River; and Saylorville and Red Rock Reservoirs on the Des Moines River. The State of Iowa negotiated with the Corps for a program of reservoir water releases for recreation and water quality enhancement purposes from all four reservoirs. The Corps monitors streamflow below the reservoirs with stream gaging stations and controls reservoir operations to meet the low flow release requirements. The Corps makes low flow releases regardless of the amount of water entering the reservoir unless State officials agree that the amount released should be reduced. During the 1977 drought, for example, low flow releases were cut in half to maintain water in reservoir storage for emergency water supply purposes.

The Natural Resources Council is also negotiating the purchase of stored water from the Corps. The negotiations are expected to be completed in 1983. The water purchased will be primarily for municipal and industrial water supply purposes. However, the water purchased would reduce ground and surface water withdrawals that are currently exempt from protected flow requirements. If stored water does at least partially substitute for these current water uses, protected flows will be easier to maintain. In addition, water for protected flow purposes could be purchased if the purchase were approved by the Iowa legislature.

EVALUATION

Negotiation of stored water releases from Federal reservoirs has been an effective means of obtaining a relatively stable water supply for protecting instream uses. Other alternatives to augment streamflow, discussed later in this report, may be necessary to protect instream uses during drought periods, however.

Purchase of stored water from Federal reservoirs for general water supply purposes or to maintain instream uses may be an effective method if sufficient funding is available. The latter may be difficult to obtain.

SOURCES

Wiegand, J. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communications. 10 March and 14 August.

STREAMFLOW AUGMENTATION

OPPORTUNITY

Streamflow may be augmented with stored water or groundwater to protect instream values.

BACKGROUND

When the protected flows program does not protect streamflow in an amount sufficient to protect instream values, streamflows may be augmented with stored water or groundwater. An Iowa Natural Resources Council permit is required before groundwater may be withdrawn [Iowa Code Ann. 445A.21 (1971 and 1980 Supplements)]. Whether an NRC permit is required before stored water is released from a reservoir, however, is unclear.

EXAMPLE

Stored water or groundwater have not been used in Iowa to augment streamflow to protect stream uses. The Iowa Conservation Commission has obtained surface and groundwater use permits, however, from the Natural Resources Council to maintain wetlands in the Riverton Marsh Wildlife Area between the East and West Nishnabotna Rivers and Otter Creek in Munhwa Toma County, for example.

If the source of supplemental water was groundwater, an Iowa Natural Resources Council permit to pump from the well would be required. If the groundwater was to be purchased from another party, Natural Resources Council approval would be needed [Iowa Code Ann. 445A.30 (1971)]. In addition, the Natural Resources Council should be notified of the streamflow augmentation plans so that water withdrawals of the augmented streamflow could be prohibited by the Council.

If the source of supplemental water was stored water, a Natural Resources Council permit would be required to store the water and perhaps to use it. If the stored water is to be purchased from the owner of a storage reservoir, a Natural Resources Council permit may be required. In addition, the Council should be notified of the streamflow augmentation plan so that the NRC can regulate water withdrawals accordingly.

EVALUATION

This alternative may be an effective method for protecting instream values during low flow periods. Implementation of this alternative requires sufficient funds to acquire the water rights or construct the wells or storage facilities for streamflow augmentation purposes.

SOURCES

Smith, M. H. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communication. 22 April.

Wiegand, J. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communication. 15 August.

PROTECTED STREAM DESIGNATION

OPPORTUNITY

The Iowa Natural Resources Council may designate streams or stream reaches as protected streams [580 Iowa Adm. Code 5.95, 5.96 (29 November 1978)]. Proposed channel modifications are evaluated more stringently in protected streams than on nonprotected streams.

BACKGROUND

A permit is required from the Iowa Natural Resources Council before stream channels can be modified [Iowa Code Ann. 455A.18 (1971)]. Channel modifications often interfere with instream uses, particularly fish and wildlife. To protect public values in streams, including fishing, wildlife, water quality, and recreation, protected streams may be designated by the Natural Resources Council [580 Iowa Adm. Code 5.95, 5.96 (29 November 1978)]. Once a stream has been designated as protected, channel modifications generally will be prohibited [580 Iowa Adm. Code 5.51(1)(d) (2 November 1978)]. Channel modification of protected streams will be permitted only in exceptional situations, and only when environmental damages are mitigated [580 Iowa Adm. Code 5.81(1)-(3) (29 November 1978)]. The Natural Resources Council requests the Iowa Conservation Commission (the State wildlife agency) to review all channelization permit applications, including those on protected streams. The Conservation Commission's comments are considered in evaluating whether the channelization permit should be granted.

EXAMPLE

Several protected streams have been designated by NRC [580 Iowa Adm. Code 5.95 (29 November 1978)]. Most are cold water fisheries. Additional protected streams may be designated by petitioning the NRC [580 Iowa Adm. Code. 5.96 (29 November 1978)].

EVALUATION

The protected stream is an effective means for protecting the natural character of a stream and its associated instream values from modification or destruction by preventing channel modifications.

SOURCES

Smith, M. H. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communication. 22 April.

Wiegand, J. 1981. Deputy Water Commissioner. Iowa Natural Resources Council. Personal communication. 14 August.

PROTECTED WATER AREAS

OPPORTUNITY

The Iowa Conservation Commission is authorized to acquire property which may have instream values for a variety of purposes.

BACKGROUND

The Iowa Conservation Commission is authorized to acquire land, water, and water rights through a variety of programs for fish, wildlife, and recreation purposes [Iowa Code Ann. 107.24, 109A.4, 111.3, 111.7, 111.10, 111.11, 111.25 (1949 and 1980 Supplements)]. Property acquisition authorities include by purchase, lease, gift, land exchange, or condemnation. Activities that might interfere with instream uses may be prevented by Conservation Commission land acquisition.

The Conservation Commission in 1981 prepared a report describing how its land acquisition and related authorities could be used to implement its scenic rivers authority. The report, the Iowa Protected Water Areas: General Plan, goes beyond the scenic river approach in proposing a protected water area program. The purpose of the program would be to select the best examples of remaining natural areas along lakes, rivers, and marshes for protection. The General Plan is basically a first assessment of what natural water areas should be protected and how the Conservation Commission would use its authorities to protect the natural water areas identified. The General Plan identified the Boone River as being the river segment most suitable for more detailed evaluation, given its cultural and natural resource values and local acceptance of the protected water area proposal.

The General Plan discussed six "management methods" for protecting natural water areas:

1. Land acquisition. The Iowa Conservation Commission can acquire land outright by purchase, gift, or condemnation. Purchase is the most common land acquisition technique used. Condemnation is used only as a last resort because it is unpopular with local landowners.

The General Plan indicates that land acquisition will play a small role in the protected water program. Other alternatives will be used because of their lower cost and greater level of public acceptance. Land would need to be acquired for portions of any protected water areas, however, for use as public access

points to a river or lake; for camping, picnic and rest areas; and to acquire land with endangered plant or animal species or fragile geological features.

2. Conservation easements. The Iowa Conservation Commission may purchase or receive a gift of a conservation easement, which is an agreement restricting the use of a particular parcel of land. Acquiring conservation easements would be an important part of the protected water areas program. Conservation easements are discussed in more detail later in this report.
3. Leasing arrangements. The use of a lease to protect instream values is very similar to the conservation easement. The General Plan notes that the major difference is that a conservation easement, or purchase of land rights, is usually on a perpetual basis. A lease, in contrast, is a rental of certain land rights from the landowner for a specified period of time. At the end of the lease period, the lease may be renewed, renegotiated, or discontinued.

The General Plan identifies two ways a lease could be used in a protected water area program. The first involves a normal lease. For example, the Conservation Commission could lease a landowner's right to grow crops on land adjacent to a river. In effect, the Conservation Commission would be paying the landowner not to grow crops on that land parcel. The cost of the lease would probably be the amount of profit the landowner expected to earn from crop production.

A second kind of leasing the Conservation Commission could use is referred to as a "purchase and lease back" arrangement. The Conservation Commission would purchase the land outright and then lease all or part of the land back to the former owner. For example, a purchase and lease back arrangement might permit the former owner to maintain his home on its original site. Lease back arrangements are nearly the same as outright land purchase.

4. Tax credits. Iowa law gives landowners property tax exemption if land is maintained in woodlands [Iowa Code Ann. 161.1 (1969)]. In the General Plan, the Iowa Conservation Commission suggests that a similar tax incentive program be established to give landowners some financial incentives to establish land uses compatible with protected water area management objectives. This would require new legislation, however.
5. State preserves. A State preserve is land or water dedicated under the Iowa State preserves law, as discussed later in this report.
6. Zoning. Cities and counties are authorized to adopt zoning ordinances in Iowa. A greenbelt ordinance has been adopted in Story County to prevent the development of land which has been

designated for public acquisition under the county's Park and Open Space Plan. Beyond this, however, zoning has not been used to protect natural water areas.

The General Plan compares the cost of different management methods for land use control. The most expensive is land acquisition. A combination of conservation easements and land acquisition would cost an estimated 90 percent of the cost of acquiring the same land outright. A combination of easements, land acquisition, and leases would cost an estimated 75 percent of land acquisition alone. A combination of all methods (gifts, zoning, leases, easements, tax incentives, and land acquisition) would cost an estimated 50 percent of land acquisition alone. A combination of leases, easements, and tax incentives would cost an estimated 25 percent of land acquisition alone. A combination of tax incentives, leases, and gifts would cost an estimated 10 percent of land acquisition alone. A combination of State preserves dedications, land and easement donations, and county zoning would have no direct cost to the Conservation Commission for the land itself.

EXAMPLE

The Iowa Conservation Commission has not yet implemented the General Plan, but is waiting to see whether the Iowa legislature will implement any of its recommendations. The Commission has the authority to implement much of the General Plan, however, if adequate funding can be obtained. The Commission is tentatively scheduling preparation of a protected water area management plan for the Boone River beginning in the summer of 1982.

The Iowa Conservation Commission has acquired 14 miles along the Upper Iowa River, the State's only designated natural river. The 1971 designation included an 80 mile segment along both sides of the river, however. What land has been purchased has been acquired piecemeal as land became available for sale, and is scattered throughout the natural river area. Funding for these purchases comes from hunting and fishing license fees, habitat stamp sales, and legislative appropriations, including the Open Space Fund.

Aside from the scenic river land acquisitions, the Iowa Conservation Commission has not acquired land specifically to protect instream uses. Conservation Commission acquisitions that protect instream uses as well as other resource management objectives, however, include the Wapsipinicon State Park on the Wapsipinicon River and the Boone Forks Wildlife Area between the Boone and Des Moines Rivers.

EVALUATION

The General Plan describes how the Iowa Conservation Commission intends to use existing authorities and funding to protect natural water areas. Success in implementing the plan depends primarily on how much money is available to the Conservation Commission. In any event, the General Plan will help focus management priorities for the Conservation Commission in exercising its land acquisition authorities.

SOURCES

Iowa Conservation Commission. 1981. Iowa Protected Water Areas: General Plan. Des Moines: Iowa Conservation Commission.

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CONSERVATION EASEMENTS

OPPORTUNITY

A variety of public agencies may acquire conservation easements to preserve scenic beauty, wildlife habitat, natural river areas, wetlands, and recreational opportunities. Acquisition of conservation easements can prevent land uses that would interfere with maintenance of instream uses.

BACKGROUND

The Iowa Conservation Commission, Iowa Natural Resources Council, county conservation boards, cities, and municipal agencies (such as city park and recreation departments) are authorized to acquire conservation easements by any voluntary means; i.e., excluding condemnation [Iowa Code Ann. 111D.1 (1980 Supplement)]. A conservation easement means that a landowner sells or gives to the public agency the landowner's right to develop his land for certain purposes. This, in effect, means that the land cannot be developed for such purposes and that the natural characteristics of the land will not be altered by more intensive land uses. The conservation easement is a legally binding restriction on the use of the particular tract of land involved, and in force for the period specified in the easement (which may be perpetual), even if the land changes title [Iowa Code Ann. 111D.2 (1980 Supplement)]. The agency holding the easement could go to court to prevent land use or development that was inconsistent with the easement.

The use of conservation easements to protect natural water areas is described in the Iowa Conservation Commission's 1981 report, Iowa Protected Water Areas: General Plan. The report describes a conservation easement as the sale or gift of rights to a tract of land which would have allowed the landowner to develop the area or otherwise destroy the scenic and natural character of the land. A typical scenic easement could, for example:

1. Prevent heavy industrial development, commercial development, or large residential subdivisions;
2. Specify the number of houses that may be located on the land;
3. Specify that certain parts of the property will remain "forever wild";
4. Specify the purposes for which land may be used in the future;
5. Prohibit the clear cutting of trees;

6. Identify where structures may be located on the land in the future; and
7. Provide for future activities, such as construction of trails.

The cost of a permanent conservation easement probably would be the difference in the land with and without the conservation easement. If land were worth \$10,000 without the easement and \$6,000 with the easement, the value of the easement would be \$4,000.

EXAMPLE

Conservation easements have not been acquired in Iowa to protect instream uses or natural water areas. The Iowa Conservation Commission received \$100,000 in 1979 from the Iowa legislature to purchase scenic easements along the Upper Iowa River, Iowa's only designated natural river. The Conservation Commission found no willing sellers, however, so no conservation easements were acquired.

EVALUATION

The conservation easement can be an effective means for preventing land uses incompatible with protection of instream values. Adequate funding for the purchase of conservation easements is necessary, however, for this to be an effective means for protecting instream values.

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STATE PRESERVES

OPPORTUNITY

Property with instream values may be designated as a State preserve [Iowa Code Ann. 111B.10 (1980 Supplement)].

BACKGROUND

Areas may be designated as a State preserve upon the approval of the State Advisory Board for Preserves, the public or private property owner, and the Governor [Iowa Code Ann. 111B.10 (1980 Supplement)]. To qualify as a State preserve, the area must be in a natural (but not primeval) condition, or have unusual flora, fauna, geological, archaeological, scenic, or historic features of scientific or educational value [Iowa Code Ann. 111B.1 (1980 Supplement)]. Public or private property may be dedicated as a preserve. The dedication may be temporary or permanent. Once an area is designated as a preserve, it cannot be used for any other purpose except for another public purpose if the following conditions are met. The preserve may be converted to another public use only when the State Advisory Board on Preserves finds that such conversion is an "imperative and unavoidable public necessity", and the conversion is approved by the State Conservation Commission, the Iowa General Assembly by concurrent resolution, and the Governor [Iowa Code Ann. 111B.11 (1980 Supplement)].

Dedication in the State preserve system does not involve land use control of private land. Rather, the land, which has been publicly acquired or privately donated for a public use, is protected from future public development (such as road construction or power line construction) that would interfere with the preserve's natural or cultural values.

To dedicate an area as a State preserve, the landowner would need to approach the State Advisory Board on Preserves, or vice versa, to determine whether the area is suitable for dedication and whether the landowner is willing to make the dedication. Once the terms of the dedication have been approved, the area is qualified as a preserve. The status of the preserve does not change when the ownership of the land changes, unless permitted by the terms of the dedication.

EXAMPLE

Through 1981, 50 areas, totaling approximately 3,750 acres, are in the State preserve system. Preserves including natural water areas include the

Gitchie Manitou Nature Preservation on the Big Sioux River and the Mann Wilderness Area on the Iowa River.

EVALUATION

State preserve dedication is similar to granting a conservation easement, except that State preserves are more difficult to condemn for a public purpose. For this reason, State preserve dedication may be a more effective method for protecting an area with instream uses.

The State preserve law does not grant the Iowa Conservation Commission independent land acquisition authorities. It must, therefore, rely on other authorities or upon being able to persuade other public or private landowners to dedicate areas as State preserves.

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PART III: PUBLIC TRUST DOCTRINE

THE PUBLIC TRUST DOCTRINE

OPPORTUNITY

Each State owns certain property which it holds in trust for public uses. It holds this property not as a proprietor, free to sell or exchange it at will, but as a government, which must consider and benefit the entire public in any transaction involving public trust property. The responsibility of the State as trustee is the heart of the public trust doctrine. Under this doctrine, sale or grant of this trust property to private people can be examined very carefully by the courts, which may invalidate such sales or grants if the rights of the public have been slighted.

BACKGROUND

The public trust doctrine has the breadth and substance to be useful as a tool of general application for citizens trying to develop a comprehensive legal approach to resource management problems. It provides the concept of a legal right in the general public, it is enforceable against the government, and it can be interpreted consistently with present concerns for environmental quality. The public trust doctrine is both a source of legislative power and a court-enforced restraint on legislative and administrative power.

It is the duty of the State to exercise its control of the public trust waters within the State borders in the public interest. Cases concerning public trust rights in land can generally be applied directly to interests in water. While the doctrine is ancient, going back to the time of the Romans, vigorous application of it is relatively recent in this country. As a result, many States do not have a well developed body of case law on the public trust. This means that public trust rights in instream flow are not likely to be precluded by previous decisions, but offer a fresh new opportunity for protecting those waters.

As a general rule, public trust waters are navigable waters, and a division of waters into "navigable" and "nonnavigable" is another way of dividing them into public and private waters. This State power of control cannot be surrendered, alienated, or delegated, except for a public purpose or a use which is for public benefit. The power to make rules and regulations governing these navigable waters may be delegated to administrative agencies, however. This power of the State to govern and control public waters is perpetual, and all privileges or uses granted in public waters are subject to this power.

State grants and administration of water rights fall under the public trust, especially in cases in which State administration of water leads to

severe damage to public rights or use of that water. There also appears to be a definite trend to extend the public trust to waters alone, without adjacent lands, and to include nonnavigable as well as navigable waters, regardless of ownership of the stream bed. This trend affects instream flow protection, because, when diversions and other activities in the streams reduce the instream flow and the public right of use is diminished, the public trust may have been violated. It may be possible, in such cases, to rectify the situation by resorting to the public trust doctrine in the courts.

Similarly, wildlife is the property of the State and may be a resource protected by the public trust doctrine in various States. If instream flows are so reduced as to destroy fish and wildlife, it may be possible to use the public trust doctrine so as to restore the flows.

On the other hand, this public trust doctrine is not a sure-fire way to cure all instream flow ills. It must be examined carefully, and each State's cases and statutes on the question must be thoroughly considered by counsel.

A review of court decisions in this area produces many general statements that seem to say that the government may never sell or alienate trust property by giving it to a private owner and that it may not change the use to which that property has been devoted in the past. Careful study of the cases, however, shows that this language does not, in fact, determine the limits of the State's legitimate authority in dealing with its trust property. There is no general prohibition against disposition of trust properties, even on a large scale. A State may, for example, recognize private ownership in tidelands and submerged lands below the high water mark. On the other hand, courts do not look kindly on such grants and usually interpret them restrictively. What is found in the cases is neither a hair splitting preservation of every inch of public trust property against any change nor a precise maintenance of every historical pattern of use. When the Wisconsin Supreme Court permitted a portion of Milwaukee harborland on Lake Michigan to be granted to a large steel company to build navigation facilities, it made the point clearly:

It is not the law, as we view it, that the state, represented by its legislature, must forever be quiescent in the administration of the trust doctrine, to the extent of leaving the shore of Lake Michigan in all instances in the same condition and contour as they existed prior to the advent of the White civilization in the territorial area of Wisconsin. [City of Milwaukee v. State, 193 Wisc. 423, 214 N.W. 820 (1927)]

The traditional cases do suggest that no grant may be made by the State to a private party if the grant is so large that the State will effectively have given up its authority to govern. On the other hand, a grant is not illegal merely because it diminishes in some degree some traditional public use.

The most celebrated public trust case in American law is the decision of the United States Supreme Court in Illinois Central Railroad Company v. Illinois, [146 U.S. 387 (1892)]. In 1869, the Illinois legislature made an

extensive grant of submerged lands, in fee simple, to the Illinois Central Railroad. That grant included all the land underlying Lake Michigan for one mile out from the shoreline and extending one mile in length along the central business district of Chicago. This amounted to more than 1,000 acres of incalculable value, including virtually the whole commercial waterfront of the city. By 1873, the legislature had repented of its generosity and repealed the 1869 grant. The legislature then sued to have the original grant declared invalid.

The Supreme Court upheld the State's claim and wrote one of the very few opinions in which direct conveyance of trust lands has been held to be beyond the power of a State legislature. The court did not actually prohibit the disposition of trust lands to private parties; its holding was much more limited. What a State may not do, the court said, is to divest itself of authority to govern the whole of an area in which it has responsibility to exercise its police power. To grant almost the entire waterfront of a major city to a private company is, in effect, to abdicate legislative authority over navigation.

But the mere granting of property to a private owner does not automatically prevent the exercise of governmental authority; for States routinely regulate privately owned land. The court's decision makes sense only because the court determined that the States have special regulatory obligations over shorelands which are inconsistent with large-scale private ownership.

The court pointed out that the title that Illinois held to the navigable waters of Lake Michigan is:

...different in character from that which the state holds in lands intended for sale ... It is a title held in trust for the people of the state that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein free from the obstruction or interferences of private parties.

This language expresses the central theme of public trust cases. When a State holds a resource which is available for the free use of the general public, a court will be displeased with any governmental conduct which will either reallocate that resource to more restricted uses or subject public uses to the self-interest of private parties.

In the development of the public trust doctrine before and after the Illinois Central case, three types of restrictions are often imposed on governmental authority: (1) the property subject to the trust must not only be used for a public purpose, but it must also be held available for use by the general public; (2) the property may not be sold even for a fair cash price; and (3) the property must be maintained for particular types of uses. These types of uses are usually either traditional uses, such as navigation, recreation, or fishing, or uses which are in some way related to the natural uses peculiar to that resource. For example, San Francisco Bay can be said to have a trust enforced on it so that it may be used only for water related uses. A dock marina might be appropriate, but filling up the bay for trash disposal is not. These three restrictions are at the center of all public trust cases.

The public trust doctrine is supported by a mixture of ideas. One recurring idea is that certain interests or resources are so important to every citizen that the free availability of the resources is imperative. Another idea in these cases is that some resources are so particularly the gift of nature that they should be preserved for the use of the entire population. This idea led to the laws of early New England reserving "great ponds" for general use. A third idea is that certain uses have a particularly public nature which makes exclusive use by private persons not appropriate. For example, it is a general rule of water law that a water user does not own property rights in water in the same way he owns the clothes on his back. He owns only a right of use, which incorporates the needs of others. Water has a public nature which makes its adaptation to entirely private use inappropriate and obliges the government to regulate water use for the benefit of the general community.

A critical question is "What lands or interests in property does the State hold?" Within each State, this question may be answered differently. With respect to waters, this question is often answered in terms of navigation. For example, the State may have declared itself the owner of all navigable waters or have defined navigable waters as waters of a certain width or waters capable of supporting a certain kind of commerce. These definitions may come from the State constitution, legislation, or the courts. In each State, it is important to first look at what the State owns before applying the public trust doctrine to that property, whether it is land or waters.

Some States have declared all waters to be the property of the State. Generally, however, the idea of navigability is fundamentally important to the public trust doctrine. Dividing waters into navigable and nonnavigable waters is another way of dividing them into public and private waters in many States and, therefore, into public trust and non-public trust waters. The Federal test for navigability for determining title to submerged lands derives from the case of The Daniel Ball [77 U.S. 557 (1871)]. This test defines public navigable rivers as those which are navigable in fact; i.e., those which are used or could be used as highways for commerce in the customary mode of trade and travel on water. Navigability for title purposes is to be tested as of the date of Statehood for States other than the thirteen original colonies. This test is rather vague, and capacity for use in commerce may be shown by experimentation as well as by actual use.

States are free to impose the public trust on waters which are not navigable under Federal title standards. States can and do imply their own State tests of navigability to determine whether waters are public for State purposes. Some States have adopted statutory definitions of navigability. For example, in Texas, the statutory test of navigability in non-title streams is whether the State's stream maintains an average width of 30 feet from its mouth up. Texas holds title to streams that fit this description in trust for the people. The Michigan test of navigability is the saw log or floating log test. Under this test, a stream is navigable if it can float logs to market. In Wisconsin and Minnesota, the recreational use or pleasure boat test is used. So long as lakes or streams are capable of use for pleasure boating, they are navigable. As the definition of navigability expands through the activity of Federal and State courts, the area of waters and lands subject to the public trust doctrine expands.

This can be seen in a recent Arkansas case [Arkansas v. McIlroy Ark. Sup. Ct. (Docket No. 79-320, March 17, 1980)]. A riparian owner on the Mulberry River sued a number of canoeists to prevent their traveling down the river, a stream suitable for expert canoeists. The court found that the stream was floatable for six months of the year and expanded the Arkansas definition of "navigability in fact" from the old Federal test of commercial usefulness, which the court described as "a remnant of the steamboat era", to a new test. The court found that the stream was navigable because it could be used for a substantial portion of the year for recreational purposes. The court compared the stream with a public highway, and declared that the neighboring owners could no more close the stream to travelers on such a public waterway than they could close a public highway. An interesting aspect of the case for persons interested in instream flows is that this radically expands the Arkansas definition of navigable waters and should, as a result, expand those portions of Arkansas' streams which are subject to the public trust.

Because public trust law is in a constant state of change and development, principles from other States are useful and sometimes necessary for development of a another State's laws.

United States courts have generally been willing to interfere in four types of situations: (1) public property has been disposed of at less than a fair market price when nothing indicates an obvious reason for a subsidy; (2) when authority to make resource use decisions has been granted to a private interest which may subordinate public uses to the private interest; (3) where broadly based public uses have been reallocated to private uses or to narrower public uses; and (4) where a resource is not being used for its natural purposes.

The usefulness of the public trust doctrine in promoting instream flows could arise in the situation in which a State had made an improper grant of some or all of its State-owned waters for private purposes to the detriment of the public. This might arise in several ways. A State might have permitted over appropriation to dry up a navigable stream. Suit could be filed against the State to cancel those permits or sales of water, based on the idea that they are invalid because they are in violation of the public trust which the State must uphold. Another example would be an administrative scheme in which a bare minimum of the necessary instream flow was retained, effectively destroying the stream for public use for navigation and recreation. In that case, suit could be brought against the administrative agency of the State.

In any case, using public trust arguments for preserving instream flows involves a court suit, protracted litigation and appeals, but also possibly great rewards. The doctrine is like the reserved rights doctrine to preserve instream flows. It involves considerable costs and risks, but potentially great returns. Flows that are once declared part of the public trust are later unlikely to be allocated to private uses.

Most States have had regretful experience with the sale of public trust property to private developers and agencies which seem to promote the interests of private developers. Many public trust cases result from efforts to retract the excessive generosity of early State legislatures and land management agencies. Several specific approaches have been adopted to deal with the broad range of public trust questions: (1) State constitution and

legislative enactments have restrained sale of trust property; (2) courts and legislatures have required that the public trust be preserved in any sales or grants; (3) sales and leases have been restricted to ensure that they are consistent with the public trust; (4) courts and legislatures have required that sales may be made only for full market value and that the money from the sales be devoted to replacing the trust uses given over to private or to other Statewide public purposes; and (5) courts have read legislation narrowly to limit the power of the government to convey public trust lands and the authority of administrative agencies to dispose of them.

THE WISCONSIN EXAMPLE

The Supreme Court of Wisconsin has worked out a clearer meaning of the public trust doctrine than has any other State. Its cases can be seen as examples of the best use of this doctrine. The first important case, Priewe v. Wisconsin State Land and Development Co. [93 Wisc. 534, 67 N.W. 918 (1896)], invalidated a State statute permitting a promoter to drain a public lake. In later cases, the court has been able to oppose the tendency of the State legislature and administrative agencies to subordinate public advantages to private enterprises.

The Wisconsin Supreme Court has taken the position that when the public interest of a project is unclear, those who promote the project must justify it and cannot simply rely on the old assumptions of legislative wisdom or administrative discretion. This justification can, in fact, be made, and the Wisconsin court, in later cases, permitted navigable waters to be converted to private land in cases where the broad impact of the change promoted public use.

The Supreme Court established five factors which are useful in evaluating situations in which the public trust doctrine may permit private control: (1) where public bodies will control the use of the area; (2) where the area will be devoted to public purposes and open to the public; (3) where the diminution of lake area will be very small when compared with the whole; (4) where public use of the lake as a lake will be destroyed or greatly impaired; and (5) where the disappointment of those members of the public who may desire to boat, fish, or swim in the area to be filled is negligible when compared with the greater convenience to be afforded those members of the public trust who use the city park. State v. Public Service Comm'n [275 Wisc. 112, 81 N.W.2d 71 (1957)].

The result of these five factors is that administrative agencies must show, from time to time, that they possess the expertise and concern for the public interest which they claim to hold.

Wisconsin has also developed a line of cases in which the court has held that the governmental body whose decisions are being questioned does not represent the public interest at large. A municipal act might possibly be struck down because the subject matter of the act is a Statewide concern and could be affected only by the State legislature.

In Wisconsin practice, the use of the public rights doctrine seems to be a way of saying that public interest in recreation is one of the most important

of the State's interests to be protected by water law. The public trust is a method used by the courts to protect this interest. The balancing of costs and benefits under this approach can permit, for instance, filling in part of a lake or a park or granting a substantial area of harbor to a steel company for docks and loading facilities.

MINNESOTA

The public trust doctrine has not been used as a basis for protecting instream uses in Minnesota. However, the elements of the public trust doctrine have been incorporated into Minnesota statutes. The Minnesota Environmental Policy Act acknowledges that the State is the trustee of the environment for future generations [Minn. Stat. Ann. 1160.02(2)(a) (1977)]. The Minnesota Environmental Rights Act acknowledges the right of every individual to enjoy the State's natural resources, as well as the corresponding obligation of each individual to contribute to their protection, preservation, and enhancement [Minn. Stat. Ann. 1168.01 (1977)]. Moreover, the Act explicitly does not preclude resort to other common law remedies, such as the public trust doctrine [Minn. Stat. Ann. 1168.12 (1977)].

The Environmental Policy Act and Environmental Rights Act accomplish most, if not all, of the objectives behind the public trust doctrine. However, the doctrine could be used in those instances where these statutes might not apply.

IOWA

The public trust doctrine has not been used in Iowa to protect public fishing and recreational navigation rights. The protected flows program of the Iowa Natural Resources Council, however (discussed earlier in this report), accomplishes administratively what the public trust doctrine would be used for in litigation.

If this approach were to be implemented, the first step would be to object in administrative proceedings where State property was proposed to be sold for use incompatible with public values in fishing or navigation, or State authority was to be given for activities incompatible with public values in fishing or recreation. The objective in intervening would be to demonstrate how the proposed activity would interfere with public trust values, and to persuade the decision maker that public trust values should be protected. If the activities interfering with public trust values were authorized, the administrative action could be appealed in court.

EVALUATION

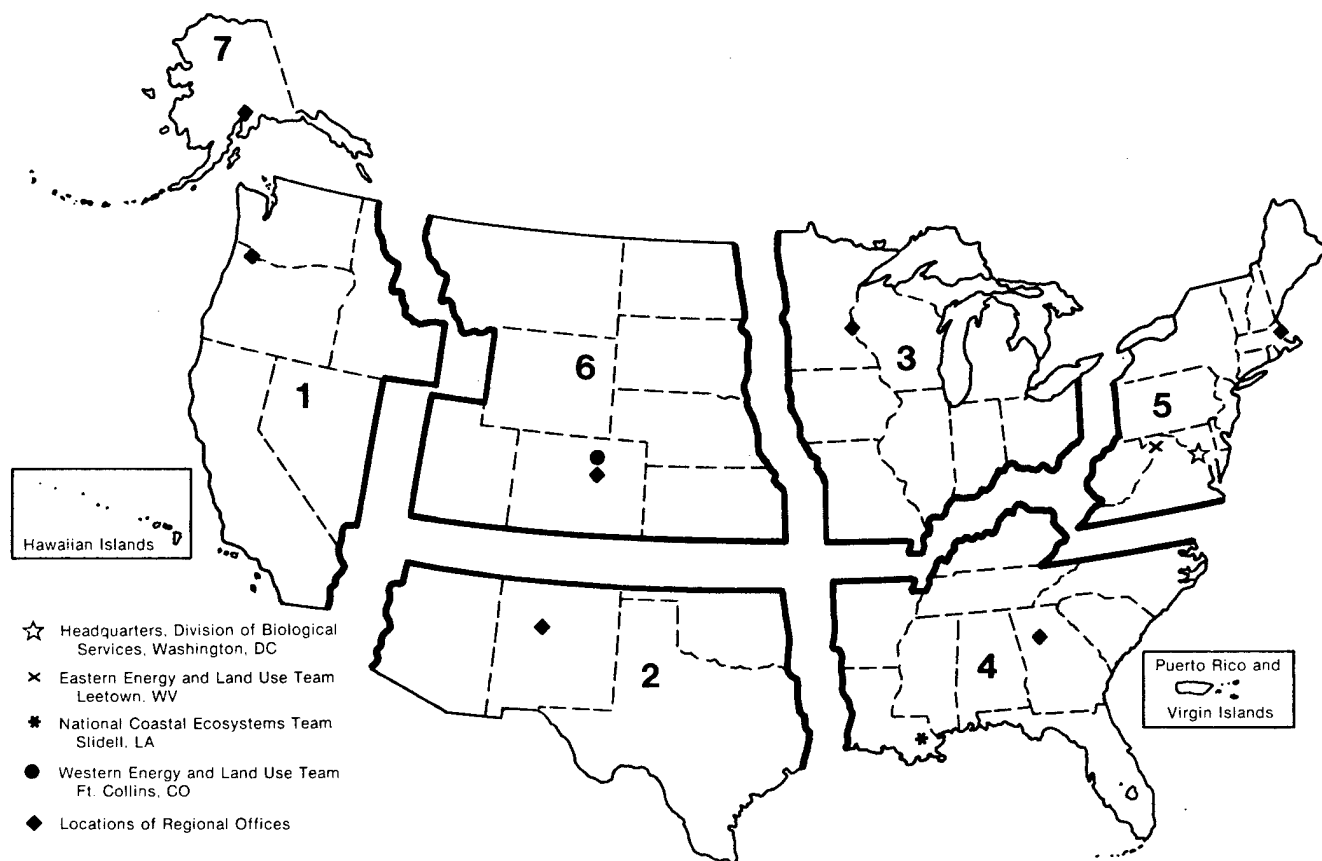
The public trust doctrine provides an attractive legal theory to protect instream flow values. The doctrine does not compel such a result, however. As a practical matter, a court is unlikely to overturn administrative activities clearly contemplated and authorized by the legislature, unless changed circumstances have obviously rendered the statute inappropriate. The public trust doctrine may be used more effectively, however, as an argument to support

State activities protecting instream values when such activities are challenged in court. If, for example, Iowa was attempting to protect instream values, the public trust doctrine could be used as an additional argument in support of the efforts.

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This publication is one of a series of similar documents for western and midwestern States that provides a basis survey of State prerogatives and programs that may be used to protect the instream uses of water. Most of the opportunities for protecting instream flows are related to fish and wildlife habitat, although many other instream uses are considered, including hydroelectric power production, recreation, navigation, downstream delivery, and waste load assimilation. These documents illustrate methods to protect instream uses within the context of existing rules and regulations.			
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