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DEVELOPING CRITERIA TO CLASSIFY WILD AND SCENIC RIVERS

by

John E. Carlson
Department of Sociology

Douglas L. Grant
College of Law

Edgar L. Michalson
Department of Agricultural Economics

James H. Milligan
Department of Civil Engineering

James K. VanLeuven
School of Communication

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Idaho Water Resources Research Institute
University of Idaho
Moscow, Idaho

John S. Gladwell, Director

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Instituting wild and scenic rivers across the United States has been such a recent and quick-paced phenomenon that any report of criterial considerations necessarily depends on contributions from a wide range of academic and professional perspectives.

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INTRODUCTION

The general intent of the research undertaken in this report was to develop criteria to evaluate alternative wild and scenic river classifications utilizing hydrologic, ecological, economic, physical, and social data. The classifications were those indicated in the Wild and Scenic Rivers Act (PL 90-542)[1].

The Act indicates three classifications which apply to wild and scenic rivers. These are: (1) wild river areas, those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges or primitive America. (2) Scenic river areas, those rivers of sections of rivers that are free of impoundments with shorelines largely undeveloped, but accessible in places by roads. (3) Recreational river areas, those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The classification alternatives considered in this study were developed following the criteria set forth in Public Law 90-542 as indicated above. These criteria are based primarily upon physical and hydrologic characteristics of the stream proposed for classification. As in many public decision-making processes, various trade-offs can be identified. These trade-offs were modified using inputs obtained through a public involvement process. The decision-making framework developed in this study permits the consideration of trade-offs among aesthetic, ecological, economic, hydrologic, physical, and social impacts to the extent possible. However, not all of the variables in this study were quantified.

The decision framework used in this study consisted of a matrix of parameters which made the trade-offs between alternative classifications explicit. The matrix contains physical profiles, aesthetic profiles, and community factor profiles.

The major effort put forth in this study was to evaluate classification alternatives for the Priest River. This river was selected because it was a study river. A study river is one which was included in the act for the purpose of being studied to see if it has the characteristics of a wild and scenic river. The classification opportunities considered covered the full range of alternatives included in the act and it also has a full range of problems which affect most wild and scenic rivers. These problems include the proximity of road, land ownership patterns, and a flow regime which is controlled by an outlet dam on lower Priest Lake. These problems reflect the full range of physical, biological and social problems which public managers often face in managing wild and scenic rivers.

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[1]Public Law 90-542, 90th Congress, October 2, 1968.

The plan under which the study was organized consisted of a multi-disciplinary framework involving five disciplines: economics, communication, law, engineering, and sociology. The research design has attempted to organize these efforts into a unified decision-making framework.

Research Objectives, Procedure, and Report Organization

The overall research objectives and the content of the subprojects to follow all relate to defining the conditions affecting the possibl classification of the Priest River under the federal Wild and Scenic Rivers Act. However, the sole purpose of the project is not limited to defining the classification criteria for the Priest River alone. Rather, it is to define the conditions which relate to classification in general and to attempt to define which of these conditions are common to other wild and scenic river situations, and to what degree these conditions, techniques, and procedures are transferable to other wild and scenic river situations.

Thus, the specific research objectives are:

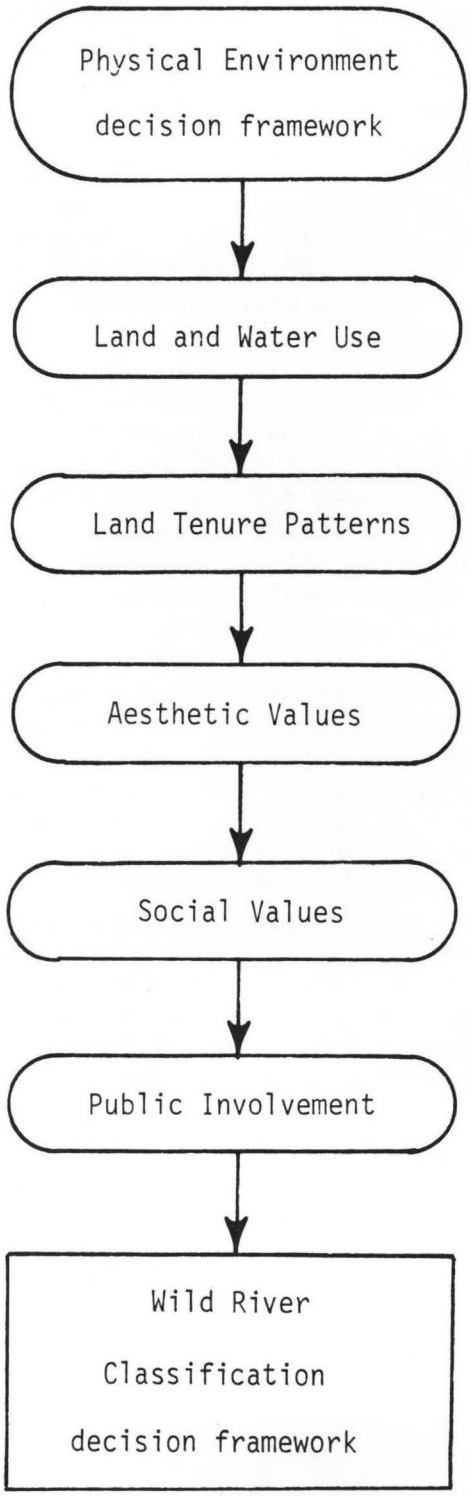
1. To develop a decision framework for wild and scenic river classification which includes aesthetic, legal, ecological, economic, hydrologic, physical and social impacts, interactions, and interrelationships in identifying trade-offs and social costs related to wild and scenic river classification problems.

2. To develop a method of monitoring public involvement and determining relevant inputs into the above decision framework for wild and scenic river classification.

The overall research approach allowed each of the four following subprojects or sections to focus on one of both of these objectives. The first of these, entitled "Private Land Use, Ownership and Prices in the Priest River Corridor", fits under the first objective. The second subproject, aesthetic evaluation, reflects on both of the agove objectives, while the third subproject, "Public Attitudes Toward Recreational Uses of Water", monitors public opinion over a two-year period and is geared to the second objective. Part IV, "Legal Ownership Priority and Classification Criteria", follows from the first objective.

Following presentation of each of the subprojects or sections of this report, a concluding section will set forth decision criteria for evaluating alternative classification plans. These alternatives, or trade-offs, will be presented in a framework which is indicated in Figure 1. The alternatives matrix will indicate the range of choices which river classification decision-makers must face.

Figure 1. Project structure diagram



Overview of Research Findings

In part I, the market values for land along the Priest River corridor were gauged by comparing alternative values for recreational and production land. They report, for example, that demand for recreational land along the corridor brought about an ownership pattern in which less than 25 percent of corridor land was owned by Northern Idaho residents in 1974. This finding is even more striking when land value comparisons suggest that the average sale price for recreational land in 1967 was $45,400 per acre, but only $355 for production land without considering the value of buildings on the properties. Such a finding supports a theory of production differentiation, they conclude.

In the aesthetic evaluation phase (Part II), the attention is focused on a method for measuring aesthetic value which can be incorporated into an overall framework of public participation. Moreover, they suggest that resource managers should consider the perceptions that users have towards aesthetic values for given land and water stretches. Such information can lead to better resource management.

The two-year public attitude survey reported in Part III suggests that public attitudes toward water and land management in the affected area shifted between 1974 and 1975 following the initial announcement that the Priest River was to be included as a study river for possible classification under the Wild and Scenic Rivers Act. This trend reflected a marked preference for local control. As well, a social values inventory was employed to proivde a baseline measurement of the personal values profiles held by local affected publics versus the U.S. citizenry as a whole.

Part IV sets forth an array of insightful legal dynamics concerning state versus federal ownership priority that impinges upon the management of outlet dam. The dam serves a water storage function and its location at the foot of Priest Lake is critical in determining whether or not water flow along the Lower Priest River is sufficient to provide environmental values required for wild and scenic river classification.

Part V, the concluding section, sets forth an analytical framework for decision-making. The affected area is divided into five segments or reaches. Numberical values and weighting factors are then applied to a range of classification parameters most of which were broached earlier in the report. Though the composite frameworks are presented for decision-making input, no single classification scheme is argued as a result.

PHYSICAL CHARACTERISTICS OF PRIEST RIVER: AN OVERVIEW

James H. Milligan

Any discussion of classification necessarily reviews the region's physical and hydrologic characteristics. Priest River is divided into two major reaches called Upper Priest River and Lower Priest River. The two reaches are divided natural with two lakes, Upper Priest Lake and Priest Lake, lying between the reaches of the river. Upper Priest River begins a few miles north of the U.S.-Canadian border and flows southward into Upper Priest Lake. Upper Priest Lake and Priest Lake are connected bya 2.6 mile, narrow slackwater channel referred to locally and on maps as the Thoroughfare.

Upper Priest Lake is approximately 3.4 miles long and 1 mile wide at its widest point. This lake is situated in a primitive setting with no road access and no private land surrounding it. Priest lake is approximately 19 miles long and 4.5 miles wide at its widest point and has a surface are of about 36 square miles. It has a shoreline of about 52 miles. The drainage area at the outlet of Priest Lake is about 600 square miles. Lower Priest River runs about 44 river miels from the Priest Lake outlet to its confluence with the Pend Oreille River at the town of Priest River. Total drainage area on Priest River at the USGS guage on Priest River 2.7 miles north of the town of Priest River is about 900 square miles. There are no gauging stations on Upper Priest River.

The upper river falls about 1160 feet in about 16 miles for an average gradient of 72 feet per mile. The gradient is much steeper in the upper end of the reach which includes Upper Priest River Falls. Near the U.S.-Canadian border the gradient is about 440 feet per mile while near the Upper Priest Lake the gradient is about 20 feet per mile.

Lower Priest River falls about 380 feet in its 44 mile reach for an average gradient of 8.6 feet per mile. River gradients range from 28 feet per mile through some sections of rapids to 4 feet per mile through many quieter reaches. About 50 percent of the Lower Priest River is at or near the four feet per mile gradient. Rapids, runs, riffles, pools, swamps, meanders and oxbows can all be found on various reaches, thus providing considerable variety for those who wish to enjoy the river.

There are six proposed dam sites with suitable physical characteristics located on Priest River between Priest Lake and the confluence of Priest River with the Pend Oreille. Dam site No. 1 is located at river 42.0 just 2 miles downstream from Priest Lake outlet. Dam site No. 2 is located at river mile 41.3, and dam site No. 3 is located at river mile 40.7. These three dam sites are all located near the lake outlet and have a combined head potential of about 85 to 90 feet.

Dam site No. 4 is located at river mile 35.1 just upstream of the mouth of Upper West Branch which is a tributary to Priest River. This dam site had a head potential of about 40 feet. Dam site No. 5 is located at river mile 16.0 just two miles upstream from McAbee Falls and dam site No. 6 is at river

mile 9.8 about four miles downstream from McAbee Falls. These last two dam sites have a combined head potential of about 130-140 feet. Dam site No. 6 has the capability of inundating McAbee Falls. The head potential of dam site No. 6 would be reduced about 20 feet if McAbee Falls were not inundated.

All six dam sites combined could create slack water on all but a very small part of Lower Priest River. The power generating capacity of all these dams combined on Priest River would be between 13,800 and 18,700 kw. Classification of Priest River as a Wild and Scenic River would, of course, eliminate the possibility of power development on the river (Sec. 7, PL 90-542).

Priest River is gaged at two locations by the U.S. Geological Survey. The upstream gage, station 1239400, is located at river mile 38.8 about 5.2 miles downstream from Priest Lake Outlet. At this station the maximum flow during the 22-year period of record is 8130 cfs and the minimum flow is 26 cfs. The 22-year average flow is 1320 cfs. Priest River at this gaging station has a drainage area of 611 square miles.

The downstream gage, station 12385000, is located at river mile 3.8 about 2.7 miles north of the town of Priest River and about 0.4 miles downstream from the Lower West Branch confluence. Maximum discharge during the 42-year record is 10,500 cfs and the minimum discharge is 165 cfs. The 42-year average discharge at this station is 1663 cfs. Priest River at this gaging station has a drainage area of 902 square miles. There are reportedly no diversions about either of these gaging stations. However, the flows are affected by storage operations in Priest Lake.

Under natural flow conditions which existed prior to 1950, the high spring flows occurred on Priest River around the first of June and then decreased throughout the summer and fall until rainfall again replenished the flow. In the fall of 1950 the present outlet control dam was built by the Washington Water Power Company. Owned by the Idaho Department of Water Resources and operated through lease by Washington Water Power, the dam provides a constant lake level during the summer months and provides stored water would can be released in the fall for power generation. Prior to 1950 logging operations had created temporary log jams at the lake outlet which resulted in some lake level regulation above normal. The outlet dam presently consists of a stoplog dam by which the lake level can be regulated by installing or removing stoplogs.

Bjornn (1956) reports thatlakefront property owners and leaseholders have mixed feelings about the outlet dam and the resulting stable water level. Some had their summer beaches inundated while others were able to use their boat docks throughout the summer. As well, the stable water level facilitated navigation of the Thoroughfare between the two lakes. The dam also served as an effective barrier against spawning cutthroat trout returning to the lake.

Under present operation of the outlet dam, stoplogs are installed in the dam each year following the spring runoff at a time when the gage height at the outlet approaches 3.0 feet. (Gage height of 0.0 feet is the normal datum). The storage is then released in the fall by removing half of the

stoplogs each weekend on successive weekends starting with the second Saturday in October. With this operating schedule the gage height has varied from 2.9 feet to 3.4 feet during the summer months. Occasionally the lake level increased above gage height 3.0 immediately following the insertion of the stoplogs in early summer.

The present operation with such crude control facilities meets neither the terms of the operating agreement (1956) between Washington Water Power Company and the state of Idaho, nor Section 70-507 of the Idaho Code. Both agreements state that the lake level will be maintained at the 3.0 feet level and not above this level during the recreation season.

Subsequent to installation of the outlet dam the flow regime in the river has changed substantially and some people may therefore question whether the river below the outlet could qualify as a wild river. Itizarry (1974) points out that prior to construction of the dam the 39-year average minimum daily flows at the Dickensheet gage below the outlet dam were 372 cfs in August and 271 cfs in September and average monthly flows were 524 cfs in August and 344 cfs in September. During the 24 years since the dam the minimum daily flows have averaged 165 cfs in August and 132 cfs during September while the average monthly flows have been 293 and 261 cfs respectively. Since rainfall records for these two months show similar averages for the ten years prior to 1950 (date of impoundment) and since 1950, it is presumed that the reduced stream-flows for the later summer period are due to the dam and the resulting storage impoundment in Priest Lake.

Storage operations have also resulted in unseasonably high flows not experienced before construction of the dam. In the fall when the stoplogs are removed and storage water is released the discharge at the Dickensheet gage increases to as much as 2900 cfs within a day or two from flows as low as 200 cfs. This unusually high flow gradually decreases during November as the lake empties. The rapid emptying in the fall is necessary in order to provide a stable lake level before kokanee spawning. The spawning beds would be left above water if drawdown continued into December.

Under current operations the extremely low flows during summer months (lower than under natural flow regime) have been harmful to the fishery in Lower Priest River. Irizarry (1974) reports that minimum flows need to be somewhat higher during summer months before native fish stocks in the river can be increased or new species can be introduced. Brown trout fingerlings were planted in the spring of 1976.

Reduction of lake levels below the 3.0 feet gage height to maintain higher minimum stream flows during the summer months would cause accessibility of private and public docks on the lake to become limited or impossible. Lake-shore residents have become accustomed to the present operation and lake levels and are generally satisfied with it (Doyle, 1974).

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PART I

PRIVATE LAND USE, OWNERSHIP AND PRICES IN THE PRIEST RIVER CORRIDOR

Joe C. Roetheli

and

Edgar L. Michalson

The Priest River Corridor is an appealing recreation area. Interest in recreational sites has increased as Americans have become more affluent, mobile, urbanized and have more leisure time. This has propelled land prices upward in desirable recreational areas, has induced some owners to develop recreational sites, and has brought about an increase in absentee landownership.

The land market for recreational property has been in a boom period, since more people have become affluent and concentrated in urban areas. Many urban residents desire to "get away" from crowded cities and seek the freedom of the natural environment; while many rural residents, including farmers and ranchers, desire recreational property where they can enjoy a change in environment and scenery. Areas such as the Priest River Corridor provide a beautiful, natural environment that shows a minimum if disturbance by man. These characteristics are commonly desired by recreationists.

On the other side of the land market issue, farmers and other major landowners who sell land to recreationists realize that such sales dilute their political influence in the community. Thus, some balance of power swings away from these major landowners as more recreational ownerships are established in the community. Therefore, when considering selling land to recreationists, landowners may attempt to incorporate a charge in their selling price to compensate for the dilution of their political impact in the community. The political impact is sometimes a motivating factor in attempting to keep out "outsiders" especially recreationists, since the "outsiders" often desire changes in the community or have opinions opposite of those held by the landowners.

Land use planning and inclusion of a river in the Wild and Scenic Rivers System are two examples of controversial issues about which the two groups may strongly disagree. Yet, the landowners realize that recreationists are willing to pay a higher price for the land than would local interests. Landowners, like most people, seek methods of obtaining higher prices for their land when they decide to sell, and this is especially true if the land is to be sold to recreation interests. These are some of the intricacies involved in the land market of the Priest River Corridor.

The Priest River Corridor is the area of interest for this study. It includes all land within one-quarter mile of the Priest River System's shoreline. The Priest River System in northern Idaho extends from its confluence with the Pend Oreille River at the town of Priest River to the Canadian border, a distance of approximately 90 miles (Figure 2). The system includes both Priest Lake and Upper Priest Lake; these lakes lie between one-half and two-thirds of the way up the system. There is no private land along or above Upper Priest Lake. The lower portion of the corridor, from the mouth to the upper end of Priest Lake, is approximately 65 miles in length of which 20 miles lie along Priest Lake. Primary emphasis in this study relates to the private land, so the lower portion of the corridor is of greatest interest. Approximately 30 percent of the land along Priest Lake and about 40 percent along the river below Priest Lake is privately owned.

The Priest River Corridor was selected for this study because of its many features common to areas with increasing amounts of land being used for

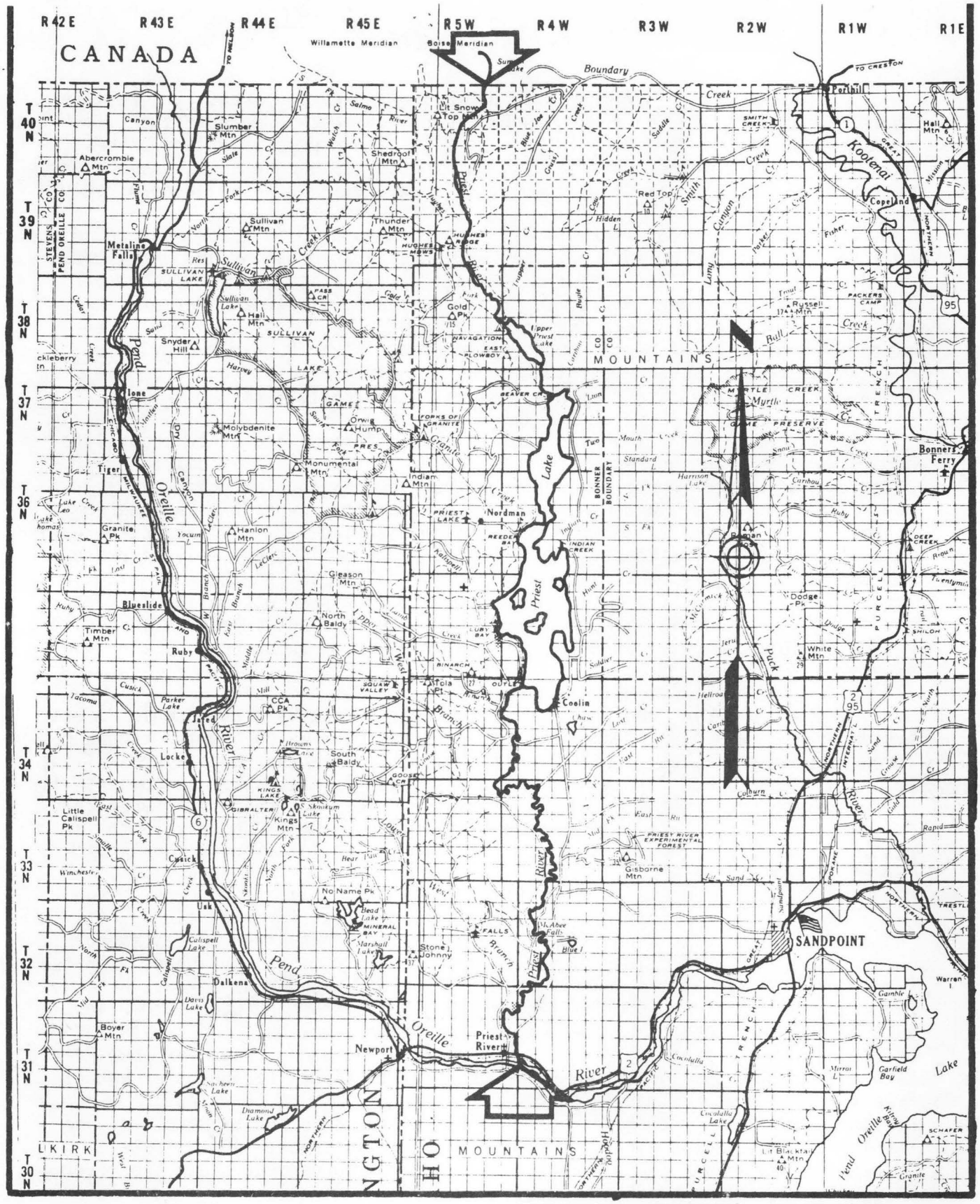

Figure 2. **PRIEST RIVER SYSTEM LOCATION MAP**

recreational purposes and thus decreasing land control by farmers. The combination of river and lake features as well as forested mountain areas provides an opportunity for a host of outdoor recreational activities including boating, rafting, fishing, hunting, hiking, sightseeing and camping. These activities provide satisfaction (utility) to recreationists and engender a desire to own a parcel of land with or near such features. As the demand for such property increases with more people entering this land market, dynamic and complex relationships are created in terms of land use, prices and ownership.

PURPOSE AND OBJECTIVES

Purpose

This study was designed to provide information concerning the land market (land use, prices and ownership characteristics) in the Priest River Corridor of Northern Idaho. The methods used in this study should be applicable to other areas undergoing change from domination by farm interests to those of recreation or other non-farm use.

Objectives

The goal of this study was to gain insight into the land market along Priest River and Priest Lake. The specific objectives were to:

1. Determine land use and ownership patterns.

2. Determine the influence of out-of-state buyers on land prices in the corridor.

3. Estimate property prices and competitive relationships of alternative land uses.

4. Identify the relative importance of factors affecting land prices in the differentiated markets--production land and recreational land.

THEORETICAL FRAMEWORK

Price in a "free" market is determined simultaneously by supply and demand conditions.[1] In Figure 3, equilibrium price (P_1) occurs at the intersection of the supply and demand curves (point A).

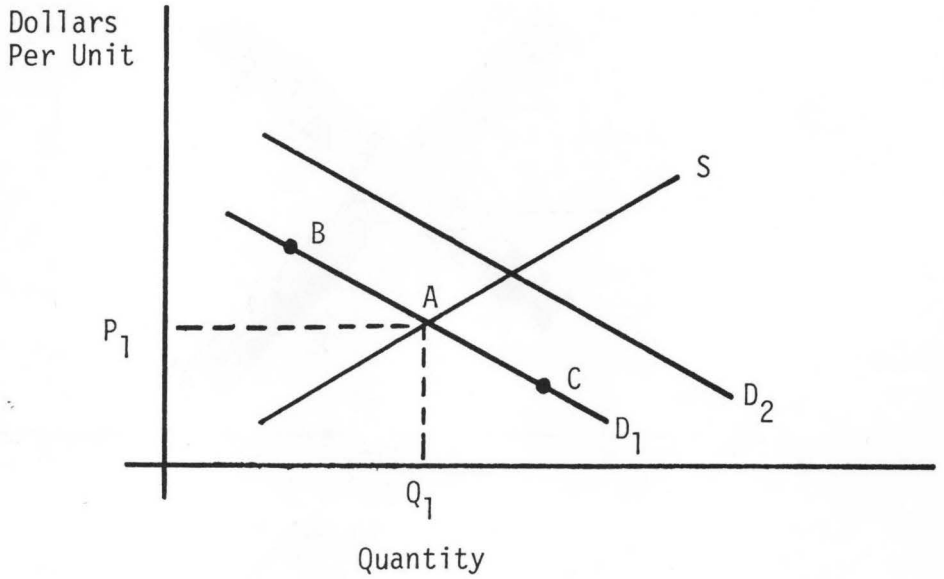

Figure 3. Supply and Demand Relationships

The distinction between the meaning of a change in demand (supply) and a change in the quantity demanded (supplied) should be reviewed at this point. For example, a change in demand indicates that the entire schedule or curve shifts such as in a movement from D_1 to D_2 in Figure 3 (an increase in demand). However, a change in the quantity demanded is a movement along a particular demand curve. This can be represented as a movement from point B to point C on D_1 of Figure 3.

Resource markets, land in particular, exhibit unique features relative to commodity markets. Commodities are often homogeneous--uniform throughout. For example, the wheat grown in an area is, for most practical purposes, basically the same. However, this is not true of land. Different parcels have unique attributes such as different soils, drainage, vegetation, topography, location,

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[1] Supply is defined as the schedule of prices and associated quantities of a factor that producers (owners) are willing and able to offer for sale at a given time, other things constant. Demand is the schedule of prices and associated quantities that consumers (buyers) are willing and able to produce, other things constant.

etc., so land cannot be considered a homogeneous resource. Because of these differences, demand and supply curves for land should be visualized as bands such as in Figure 4 rather than as a line. This suggests that there is not a unique price quantity relationship, but that some variation is possible due to thelack of homogeneity. Consequently, the equilibrium price (P_E) and quantity (Q_E) can be represented as a range rather than as a single point.

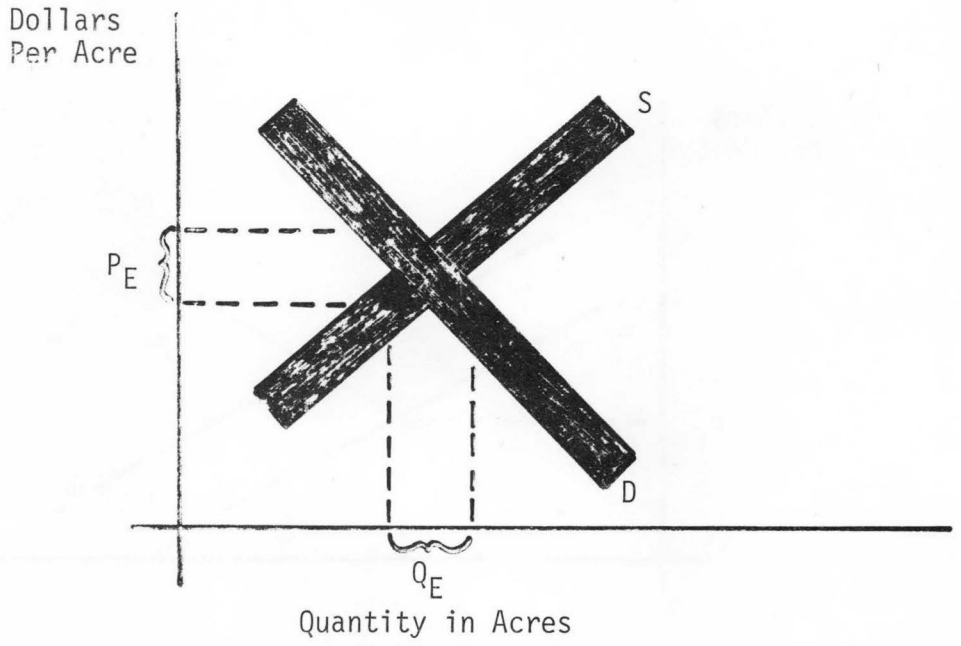

Figure 4. Supply and Demand Bands Showing Price and Quantity Range at Market Equilibrium.

The supply of land in a given area, such as the Priest River Corridor, is fixed. That is, more land cannot be created within the specified boundaries, but the use of the land may change. Thus, the supply curve for land in the area can be represented by vertical band indicating, in economic jargon, that the supply of land is perfectly inelastic. Therefore, demand would determine the equilibrium price as shown in Figure 5. If demand increased from D_1 to D_2, the price would increase from P_1 to P_2.

Demand for land results from either its income producing potential or from the utility derived from the use of the land. Agricultural and forestry production represent the former use, and recreational use typifies the utility use of land. Consequently, the income producing use of land will be referred to as production land and utility generating land will be called recreational land in the remainder of this study.

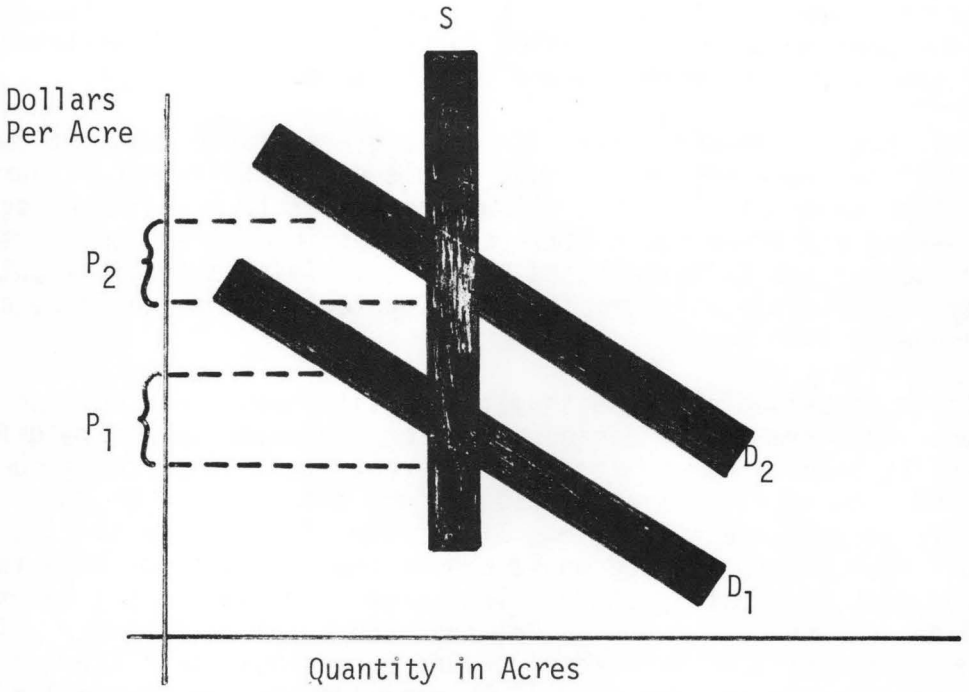

Figure 5. Effect of a Change in Demand on Equilibrium Price with a Fixed Supply of Land

Land owners attempt to distinguish these alternative land uses and differentiate between them to increase their returns when selling land. Product differentiation has long been a marketing strategy and tool of firms selling commodities, but theidea hasnot received widespread publicity in marketing resources, despite its use. Product or resource differentiation is basically concerned with "bending" demand to the will of the supplier or supply. It results from the desire to establish a new equilibrium in a market by bringing about adjustments in market demand favorable to the seller.[2]

By differentiating a product, either by physical characteristics, by creating an image of difference in the consumers' minds, by geographic differences or by time differences, the seller gains more freedom in pricing. Sunkist oranges and cars with automatic transmissions are the examples of differentiated products. Sunkist attempts to create an image of a different and better product without alteration of the orange itself. The automatic transmission was an attempt to alter a physical characteristic of the automobile, and thus the company which introduced it hoped to sell more cars. Land, by its very nature, has unique characteristics making it well suited for differentiation, if these differences create potential for alternative

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[2]Product differentiation can change the slope of the demand curve, shift the demand curve or result in a combination of the two effects. The net result is two products each with its own demand curve.

uses by the buyers. Once a product or resource is differentiated, there are individual demand schedules created for each of the differentiated resources rather than a single demand curve; this is shown in Figure 6.

The separate demand curves for the differentiated resource implies that the market has been segmented--some people desire different resource characteristics than others. This allows the seller to practice price discrimination--the act of charging different prices in each segment of the market or for each of the differentiated resources. This is feasible only if price discrimination results in greater profit potential than could be attained with a homogeneous resource.

It is conceivable that both differentiated resources' demand curves could be higher than the single demand curve for the resource before differentiation. However, it is more common for one differentiated product or resource to be superior to the undifferentiated resource and the other to be inferior. Thus, the superior resource will have a higher demand curve (D_R in Figure 5) than the original resource (D_O). One would expect the recreational land to be the superior resource in this study. Then production land might be expected to have a lower demand schedule, such as D_P, than the original resource. The elasticity of the differentiated resources' demand curves must be different for price differentiation to be effective.[3] To maximize profits the seller allocates the total resource between the two differentiated resources in such a way that the marginal revenues are equal[4]. If discrimination pays, the price will be lower for the resource for which demand is more elastic. However, the seller must recognize the potential for price discrimination between the differentiated resources in order to employ the technique and thus charge a higher price for at least one of the differentiated resources than could have been charged without differentiation.

Price discrimination results in an alteration in consumer and supplier welfare with a net gain accruing to the supplier. Without resource differentiation, the equilibrium price would be at level P_O in Figure 6. Sellers would receive the sum of money represented by the area "oP_Obc". Buyers would have been willing to pay "abco" for the property according to the demand curve, D_O. Therefore, buyers would have accrued the sum represented by area "abP_O" as consumer surplus. This is the amount that they would have been willing to pay but were not required to at price level P_O.

Demand curve D_P in Figure 6 represents demand for production use--one differentiated resource. The equilibrium price, P_P, is slightly lower than

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[3]Price elasticity is a measure of the responsiveness of the quantity demanded in a market to changes in the price of the product. It is defined as the percentage change in quantity that results from a one percent change in price.

[4]Marginal revenue is defined as the addition to total revenue attributable to the addition of one unit of sales.

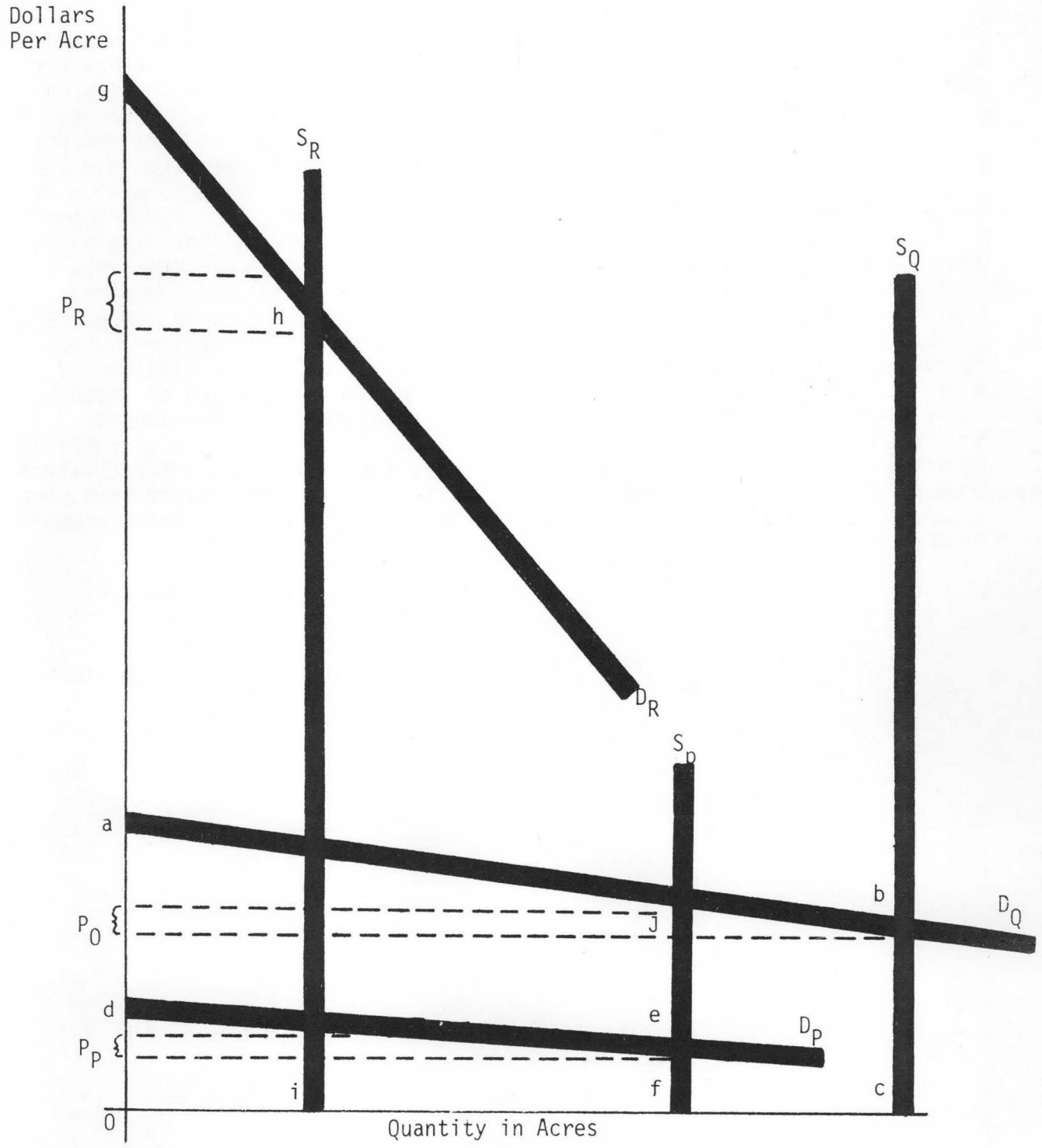

Figure 6. Demand and supply curves representing land market without and with resource differentiation and accompanying alteration in welare.

that for the undifferentiated land, P_O. Sellers of production land receive the sum depicted by "o$P_P$ef". The price for recreational land, the other differentiated resource, is P_R and is substantially higher than for undifferentiated land. Sellers would receive "o$P_R$hi" for recreational land. Consequently, without differentiation consumer surplus would be "$P_O$ab" and the amount paid would be "o$P_O$bc". With resource differentiation consumer surplus would be "$P_P$de" plus "$P_R$gh" and the amount paid would be "o$P_P$ef" plus "o$P_R$hi". Thus, suppliers would gain the amount represented by "o$P_R$hi" and lose "$P_P P_O$je" and "fjbc". As long as the gain in area or welfare from recreational land sales exceeds the losses in amounts received from production land and any costs incurred in conversion, price discrimination will be practiced. Sellers may incur some expenses, such as surveying new boundaries for smaller parcels or making improvements on the property, to sell land for recreational use. However, the sellers do plan to increase net profit by differentiation, or there would be no incentive to differentiate the land. A portion of these increase profits may be considered payment for reduced political control in the community, such as in the land use planning and Wild and Scenic Rivers System issues. Since recreational users are willing to pay more for the land than production users, it must be concluded that the utility derived from recreational use is more valuable to recreationists than is the income derived from production use.

DATA AND ASSUMPTIONS

The land area in the Priest River Corridor pertinent to this study was identified from Bonner County maps. Land classifications were obtained from public records of the county assessor's and recorder's offices. These records provided data on ownership, land use, buildings, assessed values for land and for buildings, feet of water frontage of the property, the physical size of the parcel (acreage) and the number of lots owned by each taxpayer. In addition, the year of last sale and the selling price were obtained whenever possible. This included use of transfer tax stamps, deeds, contracts and other tax record information. In addition, ownership information was gathered by mail survey from some property owners.

A sampling problem was encountered in the study. Although an attempt was made to incorporate data on all parcels in the corridor, this was not feasible. Some data were not available at a reasonable cost, and other data were incomplete. Yet, it is felt that the results do provide insight concerning the land market in the Priest River Corridor.

Several assumptions concerning the data and land market were required in this study. Land within each group (production and recreational) was assumed to be homogeneous, so that regression analysis could be used. Recorded sale price was assumed to represent the amount actually paid for the property and to represent the intersection of true supply and demand conditions. Sale prices were converted to 1967 dollars by using an index of Idaho land values.[5] The available data were assumed to be representative of the corridor.

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[5]USDA-ERA, Farm Real Extate Market Developments, July 1975, p. 13.

ANALYSIS

Land use data were summarized from the Bonner County Assessor's records. Analysis of variance was employed to determine ownership patterns, and regression analysis was used to empirically estimate land values and to establish the relative strength of various factors influencing the market price of land and improvements.

Land Use

The land classification scheme used for this study follows the general categories used by the Bonner County Assessor's Office. The eleven classifications used by the assessor are condensed into more general classes and described below.

Farmland

Farmland consists of unimproved grazing, improved grazing and crop land. It represents about one quarter of the private land in the corridor. Nearly all the farmland lies along the river. The improved grazing subsector constituted two percent of the land included in this study (Table 1). The improvement of grazing land involves some tillage, fertilizing and seeding domestic varieties of grasses. Dry grazing which accounted for 18 percent of the private land refers to pasture land which is basically native, unimproved vegetation. Cropland, seven percent of the total private acreage in the corridor, consists of nonirrigated land used for growing small grains and hay.

Timberland

The timber classification accounts for over half of the private land in the study area. Somewhat over half of these acres lie along the lake. Virgin timber is forested areas which have never been harvested. About ten percent of all private land meets this definition and most lies along the lake. Timberland which has had some harvesting is classified as reproduction forestry. This constitutes the largest single portion of the private land in the study area, 44 percent.

Recreational Land

Recreational sites occupy 18 percent of the private land in the corridor. Nearly 80 percent of the parcels of recreational property lie along the lake, yet 60 percent of the recreational acreage is along the river. This suggests that sites along the river tend to be substantially larger than those along the lake. Most of the 456 lots (classified as recreational acreage in lots) lie along the lake. Some land is assessed for recreational purposes which is not surveyed as lots. Nearly 200 such parcels lie

Table 1. Land use in the Priest River Corridor, 1974

Item	Lake		River		Total	
	Number of Parcels	Acre	Number of Parcels	Acre	Number of Parcels	Acre
Farm	23	175.12	76	2910.22	99	3085.34
Improved Grazing	3	15.79	15	195.99	18	211.78
Unimproved Grazing	19	158.33	34	1895.47	53	2053.80
Crop Land	1	1.00	27	818.76	28	819.76
Timber	43	3635.05	41	2746.24	84	6381.29
Virgin Timber	20	1151.28	2	63.35	22	1214.63
Reproduction Forest	23	2483.77	39	2682.89	62	5166.66
Recreational	898	864.71	254	1254.40	1152	2119.11
Recreational (acreage in lots)	318	132.26	5	26.99	323	159.25
Recreational acres	199	604.62	199	1118.75	398	1723.37
Subdivision (acreage in lots)	381	127.83	46	80.33	427	208.16
Subdivision Acres	0	1.0	4	28.33	4	28.33
City	89	49.10	0	0.0	89	49.10
Total	1053	4723.98	371	6910.86	1424	11634.84

Source: Developed from records of the Bonner County Assessor's Office, 1974.

along both the lake and river. However, those along the river average nearly twice the size as those along the lake.

Subdivision

Subdivision acreage in lots is used as a category of surveyed subdivisions. Most of this land lies along the lake. Subdivision acres (a different class than subdivision lots) is a category for land within a subdivision but not surveyed as a lot at present. These parcels are generally irregularly shaped and larger than the lots. Subdivision lots and acreage combined accounted for less than two percent of the private land in the Corridor.

City

The city classification includes parcels of land within the city limits of Coolin plus commercial and industrial acreages. All 50 acres in this category are along the lake.

Further characteristics of the land and improvements in the study area provide insights concerning the values and physical properties of the private land and improvements. One-half of the lake properties have waterfront access with an average of 200 feet per parcel--with frontage (Table 2). Sixty percent of the lake properties had buildings with an average of 2.2 buildings per parcel with buildings. The average assessed value was $2,687 per building and $400 per acre for land. The mean size parcel consisted of 4.5 acres, but the median was considerably lower than this. The mean selling price per parcel on the lake was $8,485 or $1,885 per acre.

Land and buildings along the river had considerably different characteristics than those along the lake. Sixty percent of the properties along the river had frontage with an average of 870 feet per parcel--with frontage. Only 20 percent of the properties had buildings, but they averaged 3.0 buildings per parcel--with buildings. The average assessed value per building was $1,370 and for land it was $66 per acre in 1974. The average size parcel along the river had 18.6 acres, but again the median was lower. The last sale price was $7,493 per parcel of $400 per acre in 1967 dollars.

It is apparent that a greater percentage of the lake properties had buildings and the average assessment per building was greater for the lake property than for river property. Although a higher percentage of the lake properties had frontage, the average frontage (per parcel with frontage) was much larger for river properties. The size of parcel sold was also larger along the river, but the selling price per acre and assessed value per acre were lower than those along the lake. The above averages appear reasonable considering that much of the land along the river remains in agricultural use, while most private land along the lake is classified as recreational parcels.

Table 2. Priest River and Priest Lake land and improvement characteristics, 1974

Item	Lake		River		Total	
	Number of Parcels	Amount	Number of Parcels	Amount	Number of Parcels	Amount
Feet of Frontage	502	102,060	181	157,427	683	259,437
Number of Buildings	633	1,366	59	180	692	1,546
Assessed Value of Buildings	633	$3,670,069	59	$246,601	692	$3,916,670
Assessed Value of Land	994	$1,907,394	300	$454,780	1294	$2,362,174
Acreage	1053	4,723.98	371	6,910.86	1424	11,634.84
Last Selling Price	513	$4,353,152	121	$906,685	634	$5,259,837

Source: Developed from records of Bonner County Assessor's Office.

Land Ownership

Changes in ownership and use of the land occurs, as the process of converting production land to recreational parcels continues over time. Changes in land use dramatically alter the composition of private ownerships. Substantial changes in use have occurred in the Priest River Corridor in the past 20 or 30 years. This change in land use has resulted in an immense growth in absentee landowners. At one time most of the private land in the corridor was owned as farms and timberland with the owner residing on the property. Today many of the parcels are unoccupied most of the year. Table 3 indicates the distribution of private ownership of land in the Priest River Corridor by residents of various geographic areas of the United States. Five areas were delineated based on mailing address of property tax bills: Northern Idaho (from Lewiston to the Canadian border), Eastern Washington (east of the Cascades), others in the Pacific Northwest, California and others (owners residing outside of the Pacific Northwest and California). Nearly one-quarter of the parcels along the river are owned by residents of California, while nearly one-half of the lake ownerships are held by residents of Eastern Washington, primarily Spokane. Only one-quarter of the parcels in the Priest River Corridor are presently owned by local area residents. However, the local area residents do own larger parcels, so they own more than one-quarter of the area land.

One question brought to mind by the high proportion of absentee landowners is; do owners from the various areas buy properties with different characteristics? Only parcels classified as recreational by the county assessor were considered in this portion of the analysis, since insufficient data were availble on other types of property. Analysis of variance was used on a number of variables to test if land bought by the people from the various areas had different attributes.

The results of these tests of difference in characteristics of land owned by residents of the delineated areas are shown in Table 4. Only feet of frontage per acre, the ratio of assessed value to last sales price per acre and sales price per acre had no statistical difference in mean value among the groups. Residents living nearest the study area own most of the buildings, but they have also owned their land longer providing more time for construction. Owners living outside of the Pacific Northwest have the greatest average frontage but the least frontage per acre. This results from the owners outside the PNW having the largest average parcels of recreational land. Residents of Eastern Washington owning Priest River Corridor property have the highest total assessed value per acre despite having the smallest parcels. They do have more buildings than other groups with the exception of Northern Idaho residents. Residents of Eastern Washington also have the highest assessed value of land per acre despite having one of the lower number of feet of water frontage. Meanwhile, Californians have assessed land values only slightly over half of those of Eastern Washington residents, and the Californians have considerably greater frontage.

The analysis of variance test indicated that there was no difference in sale price per acre among groups (Table 4). However, a statistical difference was detected among groups when the sale price per acre was normalized.

Table 3. Distribution of private land ownerships in the Priest River Corridor 1974

Mailing Address	River		Lake		Total Basin	
	Number	Percent	Number	Percent	Number	Percent
Northern Idaho[1]	85	34	200	23	285	25
Eastern Washington[2]	30	12	401	46	431	38
Other Pacific Northwest[3]	38	15	207	3	245	22
California	59	23	45	5	104	9
Other	41	16	27	3	68	6
Total	253	100	880	100	1,133	100

Source: Developed from records of the Bonner County Assessor's Office

[1]Addresses of Idaho residents from Lewiston to the Canadian border

[2]Addresses of Washington residents East of the Cascade Mountains

[3]Addresses of Pacific Northwest residents excluding Northern Idaho and Eastern Washington

Table 4. Average values of variables in the Priest River Corridor for groups of owners, 1974.

Item	Idaho	Eastern Washington	Pacific Northwest	California	Others Outside PNW
No. of observations	86	251	48	37	24
Year* (19__)	62.74	63.00	64.50	66.20	67.70
No. buildings*	1.85	1.67	0.98	0.70	0.33
Feet of frontage	57.90	55,81	51.65	67.95	82.29
Frontage/acre*	151.88	184.03	151.63	120.63	91.02
Acre*	.846	.462	.613	1.27	1.68
Total assessed value/acre* $	20,707	22,869	15,685	7,907	5,760
Assessed value of land/acre* $	4,085	5,028	4,669	2,975	3,271
Ratio of assessed land value to last sale price	.745	.747	.630	.829	.461
Sale price/acre $	13,347	19,189	18,516	15,262	14,559
Normalized sale price/acre* $	49,915	78,686	66,770	44,157	49,171

Source: Developed from records of the Bonner County Assessor's Office

*Indicates a statistical difference among some of the means at the 95% confidence level.

Some of this difference stems from the groups purchasing land in different years, so that the same dollar in two different years represents different real amounts (discounting over time). Residents of Eastern Washington apparently paid the highest price per acre. They were early buyers and thus probably have some of the most desireable sites. This would be consisten them having the greatest frontage per acre and being assessed at the highest rate. On the other hand, Californians are paying the least per acre while obtaining more frontage than most groups. They also have the lowest assessments. Perhaps, they bought undeveloped land, less desireable sites or more river sites which may have lower value.

The ratio of assessed land value to last sales price should be an indicator of how good a job the tax appraisers are doing, if buyers from each of the areas have similar ability to judge land when buying. This also should suggest if assessed value is a good indicator of sale price (are the two values proportionately related). There was no statistically significant difference among the groups on this variable despite a ratherwide range of the averages. This suggests that this ratio may be so widely distributed that the test can detect no difference. It does indicate extreme range in the ratio. In fact, this ratio ranges from 0.01 to 1.94 for land sold between 1960 and 1974 with all sale prices normalized. This could result from owners having since sold a portion of the property considered in the sale price (low ratio) or from a non bona fide sale (full value not the same as the transaction price recorded), such as a sale to a friend or relative (high ratio). Consequently, assessed value will not be an accurate indicator of sale price. This wide range resulted in restricting observations in the regression work to parcels with the ratio between 0.20 and 0.80 and the ratio of total assessed value to the last sale price of less than 1.00.

Land Prices

A general regression model (ordinary least squares) was used to estimate the normalized sales price per acre--all values converted to 1967 dollars--for land in the Priest River Corridor

$$Y = B_1X_1 + B_2X_2 + \ldots + B_NX_N + \varepsilon \qquad (1)$$

Where: Y is the dependent variable or normalized sales price per acre;

X_1's represent the independent variables such as number of buildings, feet of frontage per acre, acreage, etc.;

ε is an error term for unexplained variation or variation not accounted for by the independent variables in the equation

Regression analysis measures the effects of the explanatory variables on the dependent variable. The partial regression coefficient (B_1, B_2, etc., of equation 1) indicate the estimated change in Y given a unit change in an independent variable (X_1), holding other X_1 constant. However, since the variables are not under direct control of the researcher, the estimated results must be interpreted with caution. The independent variables should

be selected on theoretical and logical cause and effect relationships, or the estimated results may not provide meaningful information; in fact, the results can be erroneous.

Numerous regressional models and equation forms were estimated. The final models presented in this paper were developed through a process of introducing, eliminating and ultimately selecting a set of explanatory variables which explained variability, had realistic coefficients and had coefficient signs consistent with a priori expectations. No intercept term was included in the models for without acreage and/or other desireable attributes, there is no logical reason for a transfer of ownership and funds (sale) to occur. An intercept term was included in some preliminary models, but it was not statistically significant.[6] The models presented are based on size of parcel--a proxy for type of use. This size proxy was used to differentiate the land resource between production use and recreational use. The decision criterion used to classify a parcel was acreage. Parcels of 20 acres or more were categorized as production land, and parcels of five acres or less were classified as recreational land.

Explanatory variables are generally allowed to remain in the regression model, if they are based on theoretical cause and effect relationships and they are thought to be useful in explaining the variation in the dependent variable. However, to reduce the number of coefficients to be estimated, only variables have statistical significance were retained. The explanatory variables included in the final models presented are number of buildings (X_1), frontage per acre (X_2), frontage per acre squared (X_3)--only in production model, inverse of acreage in the parcel (X_4) and a zero-one (dummy) variable to distinguish river from lake property (X_5)--only in recreation model.

Many other variables were included in preliminary equations, but they were deleted, since the coefficients were not statistically different from zero or they caused multicollinearity (high intercorrelation among independent variables). Dummy variables were used in preliminary equations to test for differences in sale price paid by permanent residents of the previously delineated areas. The regression coefficients were not significantly different from zero. This suggests that the difference in price paid by residents of various areas is a result of the land in question having different characteristics, rather than people from one area being willing to pay more than people from a different area for the same characteristics. Sales price per acre for the areas described was not significantly different from that paid by residents of Northern Idaho. This suggests that on an average buyers from all regions had similar ability to judge the value of the land. Total assessed value was another variable used in preliminary models. It appeared significantly but was highly correlated with the other included independent variables. Consequently, it was deleted to avoid multicollinearity. Even though the sales prices were normalized by using the index of Idaho land values, a time variable was included in earlier models to examine if the average increase in land prices in the Priest River Corridor was different from increases in the state average.

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[6]Statistical significance is implied if the coefficients are different from zero at some probability level. For example, the student's t statistic should be at least 2.0 for statistical significance at the 95 percent probability level.

Since this time variable had an insignificant coefficient, it was concluded that the increases in average state land prices and those of the Priest River Corridor were comparable. Another set of variables used in earlier models was the percent of a parcel which was classified for recreational, farm or timber use. None of these variables was statistically significant. This indicates that the division used to separate production land from recreation land is reasonable, since the two equations indicate a definite difference in normalized sales price. The number of parcels owned in the Priest River Corridor also did not influence the price paid per acre.

Production Land

The first data subset for which a regression equation was estimated was for production property. Fitting the equation by ordinary least squares (OLS) resulted in the following estimates for the model.

$$\hat{Y} = 23.76X_1 + 19.33X_2 - 0.45X_3 + 16{,}141.61X_4 \quad (2)$$

[7]

stdz B	(.25)	(1.44)	(-1.63)	(.90)
t value	(1.77)	(3.19)	(-3.86(	(9.37)

$R^2 = .986$ $F = 69.16$ $\bar{Y} = \$355$

The signs of the regression coefficients of this equation do agree with a priori expectations of the relationship. The positive signs for variables X_1, X_2 and X_4 indicate the normalized sales price per acre increases as the values of these explanatory variables increase and vice versa. The negative sign for X_3 suggests that the normalized sales price per acre decreases as frontage per acre squared increases. This indicates that some frontage is desirable, but the desireability decreases once the owner has access to the waterfront. There was no statistical difference between the price paid for production land along the river and along the lake.

The absolute value of the standardized regression coefficient (stdz B) can be used to rank the relative importance of variables in the model. It has the effect of standardizing the units of measure of all variables in the equation. The order of importance in the production equation is X_3, X_2, X_4 and X_1. Therefore, the frontage variables are the most important variables and the number of buildings is the least important variable in this equation.

The regression coefficients may be somewhat biased because of the high correlation between X_2 and X_3. Table 5 lists the correlation between the

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[7] X_1 is the number of buildings per parcel;
X_2 is the feet of frontage per acre;
X_3 is the feet of frontage per acre squared;
X_4 is the inverse of the acreage in the parcel.

Table 5. Correlation coefficients between independent variables in regression models for production and recreational land equations.

Variables	Production	Recreational
X_1X_2	.658	.344
X_1X_3	.618	----
X_1X_4	.164	.006
X_1X_5	----	-.144
X_2X_3	.966	----
X_2X_4	.032	.102
X_2X_5	----	-.052
X_3X_4	.148	----
X_3X_5	----	----
X_4X_5	----	-.437

independent variables. Correlation values greater than about 0.70 must be carefully considered, since high correlation may result in biased regression coefficients. Since the signs of all variables in the production equation agree with prior expectations, multicollinearity is not thought to be a serious problem despite a correlation of 0.97 between X_2 and X_3. This high correlation should in fact be expected, since X_3 is the square of X_2.

The t values, R^2 and F value are statistics used to determine how "good" a model has been constructed. The student's t values are used to determine if a variable is statistically significant. Variables X_2, X_3 and X_4 are statistically significant at the 95 percent level, while X_1 has an 85 percent chance of being significant (different from zero). The coefficient of determination, commonly denoted R^2, measures the degree to which the independent variables explain the variation in the dependent variable--goodness of fit of the model. R^2 values must lie within the range of zero to one. The R^2 of 0.986 indicates that nearly all of the variation in normalized sales price per acre of production land is explained by the four explanatory variables in the model. The Fisher statistic (F) is a test to determine if the overall regression equation has statistical significance.[8] The F value in the production equation of 69.16 indicates that the model is much better at estimating sales price than merely using the average sale price in the corridor.

Recreational Land

Parcels consisting of five acres or less were classified as recreational property. The model estimated was:

$$Y = 11{,}077.62X_1 + 112.12X_2 + 6{,}548.19X_4 - 12{,}627.24X_5$$ [9]

stdz B	(.22)	(.43)	(.42)	(.09)
t values	(3.73)	(7.15)	(10.38)	(-1.63)

$R^2 = .721$ $\quad F = 96.96$ $\quad \bar{Y} = \$45{,}400$

All signs in this equation agree with a priori expectations. Variables X_1, X_2 and X_4 were significant at the 99 percent level of confidence and X_5

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[8] The F statistic measures if the equation explains the variation in the dependent variable better than the amount that would be explained by chance alone or by the average of the dependent variable. A rule of thumb is that an F value greater than 4.0 will be statistically significant at the 95 percent confidence level, if a large number of observations are used.

[9] X_1 is the number of buildings per parcel;

X_2 is feet of frontage per acre;

X_4 is the inverse of acreage in the parcel;

X_5 is a dummy variable to distinguish river from lake property.

was significant at the 90 percent level. Variable X_3 (feet of frontage squared) was not a significant variable for recreational property. Apparently recreationists desire frontage, and this desire does not diminish once access to the water is possible from their property. The order of importance of the variables was X_2, X_4, X_1 and X_5. The negative regression coefficient for X_5 indicates, with 90 percent confidence, that river property is worth $12,627 per acre less than similar lake property.

The variables in the equation explain 72 percent of the variation in normalized sales price per acre. Thus, this model explains less of the variation in the dependent variable than does the production model. However, explaining 72 percent of the variation with four variables is a reasonably good accomplishment, especially with data as diverse and complex as in a recreational land market.

Table 6 lists comparable statistics for production and recreational land. The much higher value of recreational land is quite apparent, but the standard deviation is also very high. This indicates great variation in the price per acre for recreational land. There are more feet of frontage per acre of recreational land, which signifies that the waterfront is dominated by recreational rather than production land, relatively speaking. Most of the recreational parcels are along the lake, while a high proportion of the production land lies along the river. On average, there are more than six times as many buildings on the production property parcels as on recreational sites; but when the buildings' influence on sales price per acre is considered, the effect on sale price by buildings is much greater for recreational sites.

Some of the difference in average sale price per acre is the result of the value of buildings being spread over many more acres for production land. However, a large portion of the difference results from differentiating the resource, thereby selling recreational land from a higher demand schedule than production land. This type of result was anticipated in the theoretical framework. There may be costs incurred in converting production to recreational land with average features such as surveying new boundaries and constructing improvements on the sites.

Figure 7 indicates the average prices for the differentiated land resources under present utilization. Approximately 80 percent of the land in the corridor is now classified as production land. Assume that the production land market is very similar to that of the original or undifferentiated resource.[10] Then welfare gains accrue to the sellers so long as the increase in area resulting from a movement of S_R to the right is greater than the area lost because of the corresponding movement of S_p to the left plus any costs incurred to transform production land into recreational land with average features. Since many of the most desirable sites and much of the frontage

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[10] Since the land resource has been differentiated in this area for a relatively long period of time, the undifferentiated price-quantity relationship could not be established. However, it is thought that it would closely resemble the production land market.

Table 6. Average and standard deviation estimates for variables used in regression equations for production and recreational land in the Priest River Corridor, 1950-1974 data.

Variable	Units	Production		Recreational	
		Average	Standard Deviation	Average	Standard Deviation
Normalized Sale Price per Acre (Y)	Dollars	355	257	45,400	53,300
Number of Buildings per Parcel (X_1)	Number	3.25	2.66	0.48	1.07
Feet of Private Frontage per Acre (X_2)	Feet	12.45	19.20	119	205
Acres in Parcel (X_4)	Acres	60	87	0.24	0.29
Proportion of Properties Along the River		0.88	0.35	0.16	0.36

are already in recreational use, development of "average" recreational sites may be difficult. It must be ekpt in mind that the true forces of supply and demand in conjunction with unique land features wll ultimately determine sale price of any property. Therefore, each parcel and situation must be e evaluated separately to estimate potential gains from conversion of production land to recreational sites.

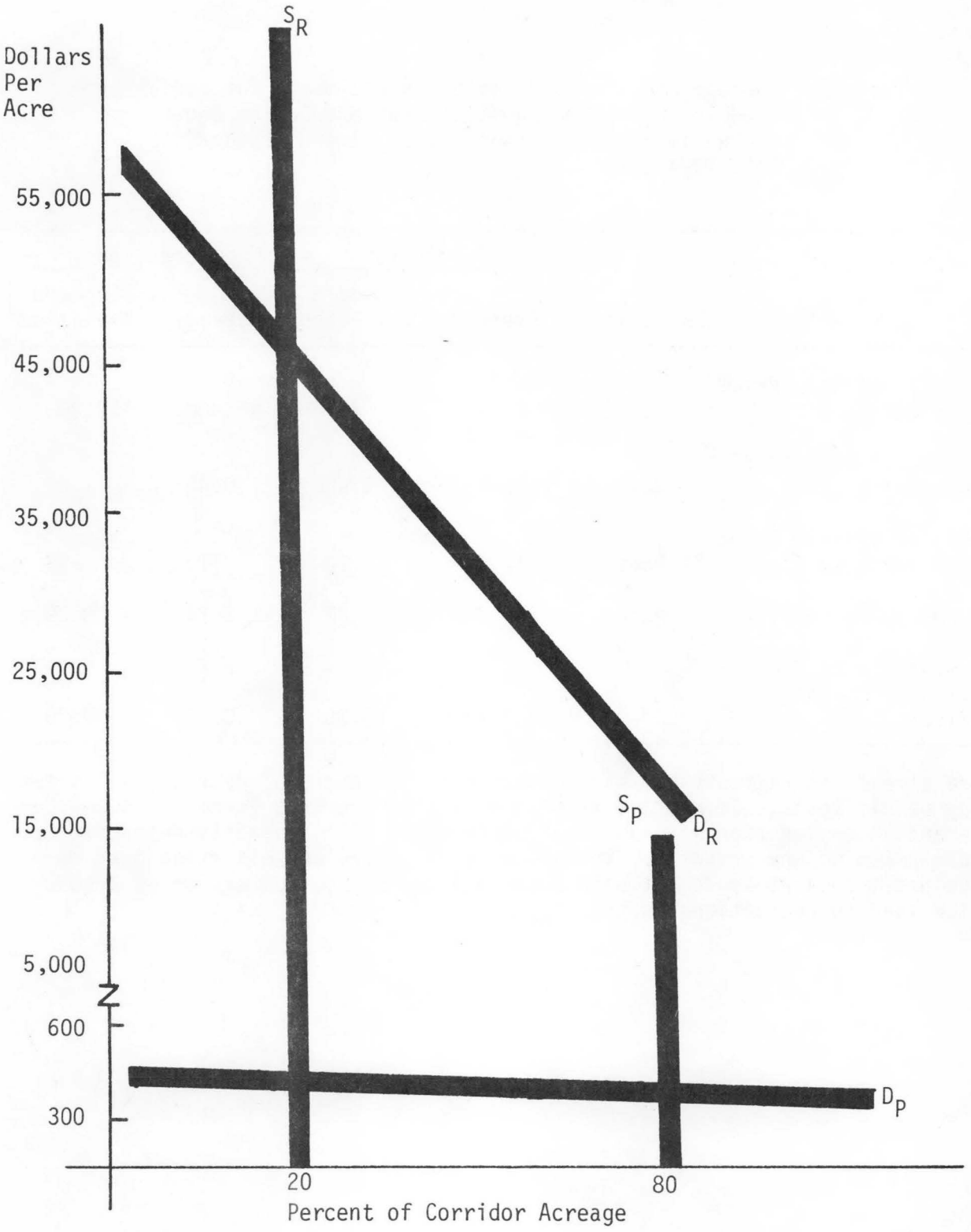

Figure 7. Differences in normalized sale price per acre due to differentiating the land resource in the Priest River Corridor, 1974.

SUMMARY AND CONCLUSIONS

The Priest River Corridor is definitely an appealing recreational area. Spokane, Washington is less than 100 miles from the Priest River Corridor, and many people from Spokane have purchased recreational sites in the corridor. The increased demand for recreational sites has placed upward pressure on the land prices in the corridor, has induced some owners to develop recreational sites and has brought about an increase in absentee landowners. Only one-quarter of the owners of land in the Priest River Corridor were residents of Northern Idaho in 1974. Californians owned one-quarter of the parcels along the river, and residents of Eastern Washington owned half of the parcels along the lake.

Only 25 percent of the private land in the study area is classified as farmland and most of this is in pasture. Over 50 percent of the private land is classified as timber. Recreational sites occupy 18 percent of the private land in the study area.

A greater percentage of lake than river properties had buildings, and the average assessment per building was also higher for lake parcels. The average feet of frontage was larger for river properties, but a higher percentage of lake properties had frontage. The size of parcel sold along the river tended to be larger, but the assessed value per acre was lower than for lake property. Much of this difference results from more farmland being situated along the river.

Owners with permanent addresses nearest the study area owned most of the buildings, while residents residing outside of the Pacific Northwest owned very few buildings. Residents of Eastern Washington who own property in this corridor have the highest assessed value of land per acre, while Californians have the lowest. A statistical difference was found among groups from various areas when sales price per acre was normalized. Residents of Eastern Washington paid the highest price per acre, and Californians paid the least. Since these variables (groups) were not statistically significant in the regression analysis, it was concluded that groups paid different prices because the land they purchased had different characteristics on average and not because of the area of permanent residence. One reason for Californians paying lower prices and having lower assessments is that they own more land along the river than along the lake. River property tends to be less valuable.

The variables used to estimate real estate prices were number of buildings per parcel, feet of frontage per acre, feet of frontage squared per acre, the inverse of the acreage in the parcel and a dummy variable to adjust for river relative to lake properties. Numerous other variables were included in preliminary equations. The average sale price was $45,400 (1967 dollars) per acre for recreational parcels but only $355 for production land--some of this difference is in the value of buildings and improvements, while other is due to product differentiation. These price differences provide owners and buyers with "ballpark" estimates of transfer value of property. The estimated regression equations should provide further refinement of the price

a parcel of land should be worth. They can also serve as an aid to property owners in determining if development may be profitable. However, the true forces of supply and demand and the unique characteristics of each parcel will ultimately determine the sales price per acre for any parcel.

The large difference between average sale price per acre for recreational land and production land supports the proposed theory of product differentiation. This suggests that land owners have recognized different demands for production and recreational land. It has allowed major landowners to realize monetary gains, but they have probably lost some political and economic control in the community by selling to recreationists. This may result in diluted power by production land owners concerning issues such as land use planning and classification of the Priest River into the Wild and Scenic Rivers System.

More study is needed in estimating real estate prices. From the observations in this study, one of the most urgent areas for improvement is in data, especially in assessed values. The wide range in the ratio of assessed to sale price is not unique to this county or state. More effort should probably be expended by assessors to obtain appraisals which consistently produce accurate reflections of the relative property values. Perhaps appraisers should have more training and preliminary work in appraisals, so that they determine values more consistently. Perhaps a regression model could be developed and used to estimate the land assessment portion of the total assessment. An equation with variables such as soil classification, topography, use of the land, location of the property, land quality, distance from shopping facilities, feet of water frontage, human density of the area, parcel size, etc. may be quite useful. Alternative groupings of these variables may be required for different land uses--residential, farm recreational, etc. If such a system was implemented, then many of the factors could be measured more directly, and the regression equation could be used to weight them appropriately.

If assessed values had been more uniform and better data collection techniques had been employed, the regression results of this study could have been based on a total of nearly 600 observations in contrast to less than 200 which were actually useable. This would have given more accuracy to the results. Due to the sampling procedure and data problems, the reported results must be interpreted with caution.

The theoretical framework developed in this study is a somewhat different approach than used in most recreational land studies with resource differentiation as the primary alteration. Hopefully, the study provides some additional insight concerning the land market.

PART II

AESTHETIC EVALUATION

John E. Carlson

AESTHETIC EVALUATION

The problem addressed in the aesthetic subproject is to monitor through "on-site evaluation" public perceptions of the aesthetic value of a portion of the Lower Priest River.

For decades, natural resource planning and decision making has been taking place in a relative vacuum of public participation. Resource professionals have traditionally operated on the basis of their own perceptions in defining the classification, use and management of natural areas.

On-site evaluation is one way of perceiving land or water through the eyes of the public. The results can contribute to decision-making in two ways:

1. Once the resource manager is aware of the public perception of aesthetics and land use practices, he can better tailor his management (or projected management) to fit public values and desires.

2. The public sense of enthusiasm and effectance toward the planning-management process should be greatly enhanced by participation through an on-site evaluation process.

RESEARCH PROCEDURE

For this study, the research procedure was strongly influenced by those used by prior researchers in related areas (Sonnenfeld 1966, 1969; Shafer 1969a, 1969b; Hamilton 1971). The construction of the actual measurement instrument was accomplished by selecting various aspects of the instruments used by the researchers cited above.

The Measurement Instrument

The questionnaire utilized in this research effort was composed of two parts: (1) questions dealing with the socioeconomic characteristics of the respondents and their families, and (2) a semantic differential scale utilized to measure perceptual responses.

The respondents answered questions on general socioeconomic variables such as age, sex, parental occupation(s), income, and background characteristics (Appendix A). These physical, social, economic, demographic, and cultural characteristics of the respondents were measured in an attempt to test and extend hypotheses in regard to determinants of preferences and perceptions.

Measurement of perceptions is a difficult task, as mental images are not readily observable. For this task, the results of open-ended and/or free-response methods would prove too difficult to systematize and quantify. For the purposes of this study, the practical method for measuring perceptions is a form of rating scale. In this research, the semantic differential scaling technique was utilized. Word groups such as the following were used:

Pleasant . . . . . Unpleasant
Useless . . . . . Useful
Valuable . . . . . Worthless
Disordered . . . . . Ordered
Perfect . . . . . Imperfect

Several precautions were taken in an attempt to draw valid and significant data from this scaling technique. The semantic differential scale employed represented a bipolar scale of attributes for the different environments. Care was taken to insure that the word pairs were debatable with each pole being definite. Any ambiguity in the word pairs chosen could cause a bimodal distribution of frequencies. The "positive" and "negative" poles of the scale were alternated (as above) in an attempt to keep the individual from responding in rote manner down one or the other side of the scale.

High-sounding, uncommon words or expressions and technical terminologies were avoided. An attempt was made to include word pairs which were as "objective" as possible. However, any word chosen would have a value depending upon the respondents' attitudes and their image of visual satisfaction. Word pairs susceptible to only one definition would have been ideal, however, even the selection of such word pairs is a subjective task.

Although additional techniques need to be explored, partially to test the efficacy of the semantic differential as well as to generate further insights into response patterns to visual stimuli, the use of the semantic differential as a valid instrument in exploring the connotations of environment is warranted. The semantic scale was designed to collect percpetual data for set observation points located at one mile intervals on a segment of the Lower Priest River. Three observation points form the data base for this analysis.

Data Collection

Data were collected during the summer of 1975 with a pretest occurring during the latter part of the summer of 1974. The size of the sample was limited by the lateness of the spring in 1975. The high water made it impossible to be on the river until late in the summer. Data were collected by taking two people down the three mile stretch of river in a canoe stopping at each evaluation station. At each station the respondents filled out two evaluation forms, one for evaluating the upstream environment and one for evaluating the downstream environment. A total of 41 respondents completed the evaluation forms. These respondents were recreationists camping at the campground located at the beginning of the three mile segment. The interviewer also stayed at the same campground.

REVIEW OF LITERATURE

The 1960's seem to be an important decade for research into aesthetics and the natural environment. Much work has been accomplished, but little has been done to pull the results together. Initially this section will briefly review general theories of aesthetics followed by a discussion of research related to natural environment aesthetics.

Theory of Aesthetics and Perception

The appreciation of beauty is an everyday experience for most people, but it is little understood even by those to whom it occurs most frequently. Without reflection, most persons can use such words as "beautiful", "pretty", "elegant", or "neat" with a fair degree of consistency and intelligibility. However, if one individual talks to others concerning their experiences he finds that there are wide divergences of opinion. According to Gilbert White (1966:119), "Perception of 'dirty' water, 'ugly' landscapes, 'barren wastes', 'murky' hazes, does not appear to conform to any universal aesthetic." Aesthetics is not inherent in any environment, but is socially and culturally perceived and defined.

"The aesthetic experience is the experience of a certain kind of value. There are many different kinds of value: moral value, economic value, practical value, religious value, political value, intellectual value, and others. Among these various kinds is aesthetic value, one of the common names of which is beauty (Lee, 1938:5)."[1]

While Osgood, Suci, and Tannenbaum (1957) feel that attitudes are synonymous with the evaluative dimension of "semantic space", the question arises of whether any particular preferences (positive or negative) is affectively liked or disliked or whether it is cognitively evaluated as good or bad. It is entirely possible that any individual may "like" something that is "bad" or "dislike" something that is "good". The aesthetic value is, then, not inherently found in any one part of an environment but in people's reactions to thier total environment.

At present, the question at issue is where aesthetic value can be found. Even though nature is a seen (perceived) phenomena, it is often excluded or disregarded in the study of aesthetics. Can aesthetic value be found in nature: Is there any relation between the non-aesthetic aspects and the aesthetic? Can one influence the other in any way? Can the aesthetic value be affected by aspects of the object which are non'aesthetic?

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[1]A detailed discussion of attitudes and values can be found in Rokeach (1972:1974).

One perceives an object in light of all his experience with that or similar objects. At the moment of perception, the individual is not aware of the whole body of past experience, even though these past experiences are factors in making the present perception what it is. Insofar as the individual's behavior is modified by previous events and past experience, we may refer to what Day (1969:134) calls "learned perceptual resolution". It might be conceived that the amount to which this secondary aspect can influence the perception of an object is slight and unimportant. This influence upon perception may be slight, but even so, it does not follow that it is unimportant. The secondary aspects may be what determine whether the object is perceived with pleasure or with displeasure, leaving "images" as the actual objects of the aesthetic experience. What the individual sees, "perceptually represents some sort of compromise between what is presented by autochthonous processes and what is selected by behavioral ones (Bruner and Goodman, 1947:33-36)."

Many of the habits of perception of most persons are molded by criticism, either "official" or "unofficial". Especially influential is either supposedly expert of professional criticism, or the expressed preferences of one's pears. Criticism in pointing out what to see, forms habits of perception in the observer and the observer begins to look for similar things in what appears to be similar situations. White (1966:108) states that the individual's "perception and judgment at each point is bound to occur in a framework of habitual behavior and of social guidance exercised through constraints or incentives". Perceptual distortion allows the observer of unfamiliar phenomena to adjust to a familiar (habitual) orientation. White (1966:110-111) feels that "there can be no thoroughly objective perception of the environment, only degrees of distortion which are minimized inrigorous scientific description". This does no illustrate full and adequate perception and much of the potential aesthetic value may be missed by the observer. The degree to which perception may be influenced or distorted by selected background factors will be tested in this study.

Related Research

An aesthetic product has to accomplish two things: it has to gain and to maintain the attention of an audience. Therefore, judgments of satisfaction about the physical environment are a manifestation of arousing visual stimuli which sustains the interest of the perceiver.

Schlissler's (1969) experiments with respondent analysis of pictures by subjective ratings and by eye fixation lead him to suggest that the human observer can be used to estimate areas of informativeness within visual scenes. Irvin Child (1962) carries this idea further by researching the possibility of personal preferences as an expression of aesthetic sensitivity. Child attempted to assess the significance of the average or group order of preference which emerges in most research efforts where respondents are asked to rank a set of stimuli in order or preference. An all-male college student sample was used to rank twelve sets of postcardsize painting reproductions, each set comprising sixty pictures. Each set of pictures was ranked independently from the other eleven picture sets. Child provided an external criterion of aesthetic value by bringing in a third group comprised of males

and females in the field of art to judge the aesthetic merit of each picture. These "experts" were in agreement with each other much more often than were the student groups expressing personal preference. Child concluded that "the ordering of a set of pictures by the preferences of a group of unselected students, then, has generally very little to do with their aesthetic value" (Child, 1962:503). Child (1965) carried this research a step further by assessing the personality correlates of aesthetic judgment in the college students utilized in his previous experiment. The general pattern of the findings suggests that good aesthetic judgment is to a large degree the outcome of a generally cognitive approach to the world. In engaging and rewarding the attention of the person of this inclination, the conditions of diversity, complexity, novelty and ambiguity must be present in a relatively balanced composition.

Sonnenfeld (1966) reported on a five-year study of environmental perception involving sample populations from both Delaware and northern Alaska. Tests for measurement of variations in environmental perception were concerned with "establishing the range of conscious environmental attitudes, preferences, and sensitivities of different populations and possible reasons for these in terms of a variety of physiological, experiential, and personality variables" (Sonnenfeld, 1966:71). In testing the visual impact of the landscape, a set of fifty pairs of photo slides were used in which four environmental elements--vegetation, topography, water features, and temperature--were systematically varied.

Home environment, sex, and age were sources of variation in environmental perception. Non-natives differed significantly from natives in environmental preferences. Additional sources of differences stemmed from a function of occupational or professional orientations and previous environmental experience. Marital status, length of area residence and hypothesized personality contrasts also appeared to influence perception.

Culture, society and economy are likely to be the major and most wide-reaching determinants of space and landscape preference but their effectiveness may be questioned. Sonnenfeld (1966) felt he reduced the bias of his work by concentrating on a native/non-native analysis.

In a later study Sonnenfeld (1969) attempted to assess the role of personality factors affecting differential response to the physical environment. It was recognized that different populations vary in their perceptions of both the utility and the quality of the environment. It was also noted that some diversity was observable within certain populations.

A sematic differential scale was used for defining physical environmental concepts (good-bad, dark-light, cold-hot, beautiful-ugly, etc.). Physical, attractiveness, and wilderness factors were developed from this scale. Previous environmental experiences and exposures were highly relative to sensing and perception of the environment.

Within-population differences found in this and previous studies conducted by Sonnenfeld suggest the possible existence of "environmental personality types" (Sonnenfeld, 1969 95). Perception varied in relation to how the

individual viewed the concept of "nature" and "environment". The contrasting considerations of the environment as challenging or friendly and non-demanding initiated differing responses in perception. Sonnenfeld felt that these differences gave some evidence to the possibility of a personality dimension. In fact he concludes by saying, "I am willing to predict that consistent environmental personality types will be found among all populations, regardless of the contrast in cultural values otherwise distinguishing between them, and regardless of the contrast in environments they occupy" (Sonnenfeld 1969:97).

Shafer (1969b) suggests that further research be conceived around the concepts of environmental perception and familiarity with that environment and the effect of lifestyle and cultural background on natural environment perceptions. "The simple fact remains that recreation is not outdoors, but people's reactions to outdoors" (Shafer, 1969b:80).

Winkel, Malek and Thiel (1969) re-emphasize the importance of personality factors in environmental attitudes. They suggest that possible personality dimensions to be examined are those related to the "individual's tolerance for complexity and the extent to which the person feels he has a measure of control over his destiny or feels that he is unable to avoid being manipulated by those in power" (Winkel, et al., 1969:202).

The belief in the operation of covert processes being responsible for overt behavioral changes is inherent in most of the studies revolving around the concept of the environmental personality. White (1966) suggests that four factors play some part in the formation and change of environmental attitudes: the decision situation, the individual's degree of experience with the environment, his perception of his own role, and his competence in dealing with its complexity. Lowenthal (1966) pointed out that environmental choices can often be fleeting. For this reason he feels that the effects which the passage of time has upon these conglomerate categories should be of vital concern.

Shafer (1969a) used on site interviews to sample wilderness hikers in an attempt to find a means of quantifying the qualitative values of wilderness reaction. The statements used to describe the qualities of a recreation experience explored five realms of experience: physical, emotional, aesthetic, educational, and social experiences. "Aesthetic values were ten times and emotional values were eight to nine times more important to the average respondent than social values. Physical experiences were five to six times, and education experiences were one to two times more important than the social values" (Shafer, 1969a:194).

Although the social values were rated as relatively unimportant, this does not warrant the conclusions that social values were the least important of the wilderness values. "The fact that 85 percent of the hikers were in groups of two or more suggests there is some sort of social factor involved" (Shafer, 1969a:196).

In an attempt to determine how forest owners react to forest management and to gain information about aesthetic forestry, Hamilton (1971) utilized

the "alternative" method of color photographic prints. The most disturbing single feature to these forest owners was logging debris. The most aesthetically unpleasant photographs showed high-graded forest areas where cutting was done earlier and produced slash with dead leaves remaining on the branches. Where an attempt had been made to clean up the slash, viewers of the photographs found it less disturbing.

Sewell (1971) used interviews and questionnaires to study perceptions and attitudes of engineers and public health officials. Not only did Sewell want to identify perceptions and attitudes, but he also wanted to attempt to account for variations in them. Both groups of professionals generally relied on measurements of physical attributes to assess the "seriousness" of a problem. The degree of public awareness or the extent of complaints were normally regarded as an index of "seriousness". It was also clear that both groups were influenced by the conventional wisdom and practices of their respective professions. Sewell likens these professions to "closed systems" (Sewell, 1971:40). Both groups tended to follow the conventions of their professions and both groups perceived their jobs and roles as highly qualified to work in the public interest. Peer consultation and contact within both groups was frequent, however, consultation and contact outside the agency or firm was not considered necessary. Observed differences in perception by subgroups of each profession may have resulted from differences in functions performed by those subgroups.

Lucas (1970) noted the discrepancy between perceived wilderness and officially designated areas. In his study of the Quetico-Superior Area he elicited information on three aspects of wilderness perception: (1) the importance of the area's wilderness qualities as an attraction; (2) the area considered wilderness, and (3) the amounts and type of use considered appropriate in the wilderness. The sample was composed of approximately three hundred groups of visitors to the area and was randomly distributed across the total area and throughout the summer season. These groups were personally interviewed by the researchers. The wilderness views of the groups differed on all three aspects studied. Between group variation was greatly reduced when visitors were classified on the basis of the type of recreation they were engaging in. The caution inserted at this point indicates the error in concluding a casual relationship between type of recreation and wilderness perception. The type of recreation chosen may express a cluster of motives and abilities--both of which have been significantly influenced by other variables. Contrary to expectations, remoteness did not appear to affect wilderness perception. Heavy and inappropriate recreational use appeared most distracting with respondents showing little awareness of timber cutting in the area. By type of recreational activity, however, canoeists observed logging practices less often than boaters but found it more objectionable with approximately half of those encountering it expressing a dislike.

A similar study was conducted in Ontario's Algonquin Provincial Park in 1963 (Lucas, 1970). This area is similar to the Quetico-Superior area but is subject to heavier use. The same general differences were found between canoeists and boaters in the in the two areas. These parallel findings on the two study areas have bolstered the confidence of researchers in the validity of the methodology utilized.

FINDINGS

As discussed earlier, the research findings were obtained from on-site evaluations conducted on Lower Priest River. Respondents were canoed down a three mile stretch with stops at each mile to score their evaluations of upstream and downstream views.

For purposes of this analysis, the on-site evaluations were combined to form a total evaluation scale ranging from 1 (low evaluation) to 7 (high evaluation). This was done for both the upstream and downstream for the three evaluation stations. These total scales were then utilized as dependent variables in a regression procedure. Independent variables in the regression model were sex, age, childhood residence, present residence, education level, occupation (classified as blue collar and white collar from the Census Bureau categories), social status (from the Duncan Index), and income level.

Table 7 presents the regression coefficients for each evaluation station. As can be seen, only two variables produced statistically significant influences on aesthetic evaluation and these were on the first station. Social status was inversely related to aesthetic evaluation on the upstream evaluation of station 1. This same relationship held for upstream evaluations on station 2 and downstream evaluations on stations 2 and 3, whereas a positive relationship resulted on the downstream evaluation of station 1 and the upstream evaluation of station 3. Age was positively related to the aesthetic evaluation on all stations. That is, the older the respondent, the higher the aesthetic evaluation score. Of primary interest is the relative order of the independent variables in contributing to the overall evaluation score. Table 8 presents the rank of each independent variable for the six evaluations made. To summarize the information, the average rank is also computed. As can be seen, social status and age are the two most influencial variables in explaining one's aesthetic perceptions. These are followed by one's occupation, childhood residence, and income level respectively. Age and childhood residence most consistently produce the same influence. The larger the size of one's chidhood residence, the higher the evaluation score. These findings follow in general the findings of other studies in that they show the strong influence of social class differences on aesthetic evaluation.

Table 7. Regression coefficients for aesthetic scale and background variables for each evaluation station

	Station 1 (mile one)		Station 2 (mile two)		Station 3 (mile three)	
	Upstream Beta	Downstream Beta	Upstream Beta	Downstream Beta	Upstream Beta	Downstream Beta
Sex (001)	.27	.07	.05	.13	.15	.32
Age (002)	.69*	.30	.28	.52	.28	.49
Ch. Res. (008)	.16	.42	.32	.19	.38	.26
Pr. Res (009)	.11	-.33	-.10	-.20	-.23	-.37
Educ. (011)	-.39	.14	-.39	-.22	-.12	-.23
Occ. Cen. (013	1.23	-1.11	.14	.04	-.44	.23
Occ. Dun. (014)	-1.27*	.77	-.16	-.39	.16	-.39
Income (017)	-.83	.28	-.09	-.23	.03	-.58
Constant	5.66	3.50	5.37	5.39	4.74	5.88
$\bar{x}$	5.32	5.33	5.17	5.12	5.36	5.31
S.D.	.65	.95	.83	.84	.82	.97

*Significant at .05 level

IMPLICATIONS OF FINDINGS

Several aspects of this study have implications for public involvement in the evaluation of aesthetic qualities of natural resources. A primary factor is the utility of the procedure used here as ameans for securing public input. Observations of the respondents by the interviewer as well as observing the evaluating forms indicates a strong tendency to form a response set after the first evaluation station. These response sets tended toward the extremes of the evaluation scales as can be seen by observing the standard deviations in Table 6. This implies that for repeated evaluations of similar types of environments, the semantic differential may have limited utility. Its simplicity may not result in valid results. For varied types of scenic environments, it may have more usefulness.

The ranking of independent variables further substantiates the existing research indicating variable perceptions of environmental quality by selected background characteristics. These findings suggest that managers should have some knowledge about the users of a given resource in order to best manage both the resource and the user. Such knowledge will lead to better resource management.

In summary, this procedure did not prove to be ideally suited to the aesthetic evaluation of a potential wild and scenic river. Other means of public involvement in this aspect of classification need to be explored. Perhaps this is one sphere of evaluation that can best be handled by professionals adhering to a set of evaluation criteria. Perhaps the most logical place for public in aesthetic evaluation is in the establishment of the criteria used for classification.

Table 8. Rankings of independent variables for all evaluation stations

	rank								
	1	2	3	4	5	6	7	8	$\bar{X}$ rank
Sex	0	0	0	0	1	2	1	2	6.67
Age	1	1	2	1	1	0	0	0	3.00
Child Residence	0	2	1	0	0	2	1	0	4.33
Present Residence	0	0	0	3	1	1	0	1	5.17
Education	1	0	0	1	1	0	3	0	5.17
Occupation	2	1	0	0	1	0	0	2	4.17
Social Status	1	2	1	1	1	0	0	0	2.83
Income	1	0	2	0	0	1	1	1	4.67

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PART III

PUBLIC ATTITUDES TOWARD RECREATIONAL USES OF WATER

James K. Van Leuven

INTRODUCTION

Changes in water and land use management alternatives rarely occur public input into the decision-making process. This has been expecially true in recent years owing to requirements imposed by environmental impact statements and with public sentiment generally favoring full disclosure of intended policy changes.

Nevertheless, the quality of public input into the decision-making process is often varied and diffuse. On the one hand, records of public meeting participation are compiled by management agencies. A wholly different record of public involvement is then often portrayed by the mass media. And finally, the general public often holds an altogether different general view seldom visible to either the management agencies or to the mass media.

This subproject, therefore, focuses on two public attitude surveys taken in 1974 and 1975. In both surveys two general issues formed the problems under study. These are: How do Bonner County, Idaho residents prioritize their attitudes toward alternative water and land use issues? What are the attitudinal patterns among recreational land use preferences? In addition, the 1974 survey gave special attention to the relationship between community involvement and general preferences toward water uses. In 1975 additional consideration was given to answering the question, how do the personal value profiles of affected publics influence their selection of alternative uses of water.

The 1974 sample of 400 respondents included 20 from each of 20 voting precincts in Bonner County, Idaho. Within each precinct aerial maps were used to select the 20 respondents proportional to geographic housing concentration. In city zones (Sandpoint, Priest River, Clark Fork, Oldtown) respondents were chosen randomly within selected city blocks. Proportional representation was likewise given to mixed rural and city precincts.

The same sampling procedure was followed in 1975, but same size was cut to slightly more than half to compensate for the 30-40 minutes required to administer the social value analysis by the interviewer.

Responses to key survey questions are reported here on a question by question basis.

Most Important Water Uses

The attitudes of Bonner County residents toward the most important uses of Idaho water at first appear paradoxical (see Table 9). This is the case because the top-ranked choices are domestic water supply, free-flowing bodies of water, and hydroelectric power. Nevertheless, the composite picture when coupled with data from other statewide surveys suggests that Idahoans are selectively preservation and development oriented. Apparently, then translate the abundance of Northern Idaho water into the opportunity to promote competing water uses.

Because specific preferences reflected competing uses, a more general priority question was asked in 1975. Respondents were asked to rank order four more general water uses: hydroelectric power, irrigation water, recreational development, scenic wilderness. Results indicate that they gave a much lower overall priority to using water for recreational development than to hydroelectric power, scenic wilderness. Results indicate that they gave a much lower overall priority to using water for recreational development than to hydroelectric power, scenic wilderness, and irrigation water (Table 10).

Land Adjacent to Rivers and Lakes

When considering preferences toward land use adjacent to Idaho rivers and lakes, respondents were asked to rank order their top three land use preferences, then in 1975 were asked to give a simple directional response (favor, neutral, oppose) toward each of the same uses (Tables 11 and 12).

Taken together the two measures indicate an overall preference for scenic wilderness, irrigated farmland, and recreational development; a midstance toward timber production, residences and cabins; and the least-favored overall preferences toward related business, industrial and manufacturing outlets.

Who Should Manage Land Adjacent to Water?

Idahoans view the stewardship of lands adjacent to rivers and lakes as a fundamental issue. In fact, the intensity of this general concern can be seen as foreshadowing any specific consideration for management alternatives for lands immediately bounding the Priest River under study here (Tables 13 and 14).

In terms of management responsibility for lakefront and riverfront property the public expressed strong preferences for: 1) private control by landowners both in 1974 and 1975. In 1974 this was followed by: 2) local authorities under federal guidelines, state parks department, state authorities

Table 9

What should be the most important water uses of Idaho's lakes and rivers?
Rank your top three choices beginning with number 1.

	Ranked First		Ranked Second		Ranked Third		Marked Not Ranked	Not Marked
	N	%	N	%	N	%	N	N
Flood control protection	27	23.3	51	44.0	38	32.8	30	207
Domestic water supply	102	54.5	45	24.1	40	2.14	30	136
Hydroelectric power	42	41.2	40	39.2	20	19.6	20	231
Fish production	22	16.1	48	35.0	67	48.9	24	192
Mineral extraction	1	20.0	2	40.0	2	40.0	4	346
Sewage and water disposal	11	35.5	10	32.3	10	32.3	14	308
Recreational use	33	19.4	58	34.1	79	46.5	11	172
Maintain free-flowing	55	42.0	41	31.3	35	26.7	24	198
Other	10	50.0	5	25.0	5	25.0	3	330

Table 10

Generally, which of the following uses of Idaho's water and adjacent lands are the most important? Rank your choices in order beginning with number 1.

	First Choice		Second Choice		Third Choice		Fourth Choice	
	N	%	N	%	N	%	N	%
Hydroelectric Power	69	38.5	41	22.9	33	18.4	36	20.1
Irrigation Water	55	28.5	82	42.5	45	23.3	11	5.7
Recreational Development	24	13.0	52	28.3	68	37.0	40	21.7
Scenic Wilderness	58	32.4	26	14.5	45	25.1	50	27.9

Table 11

What should be the most important uses of land adjacent to Idaho's rivers and lakes? Rank your top three choices beginning with number 1.

	Ranked First		Ranked Second		Ranked Third		Marked Not Ranked	Not Marked
	N	%	N	%	N	%	N	N
Irrigated farmland	78	46.7	53	31.7	36	21.6	39	147
Residences/summer homes	32	31.7	30	29.7	39	38.6	16	236
Timber production	58	33.0	69	39.2	49	27.8	37	140
Recreational use	52	25.7	80	39.6	70	34.7	20	131
Retail/commercial business	0	0.0	3	37.5	5	62.5	5	340
Industrial, manufacturing	2	7.1	12	42.9	14	50.0	5	320
Wilderness	70	38.9	46	25.6	64	35.6	30	143
Other	9	60.0	--	----	6	40.0	3	335

Table 12

1975 - Generally, how do you feel toward each of the following uses of land adjacent to Idaho's rivers and lakes?

	Favor this use		Neutral to this use		Oppose this use		No response
	N	%	N	%	N	%	N
Industrial, Manufacturing	39	18.9	34	16.5	133	64.6	2
Irrigated farmland	167	81.5	29	14.1	9	4.4	3
Recreational development	151	74.0	32	15.7	21	10.3	4
Residences, cabins	96	46.4	58	28.0	53	25.6	1
Retail business	49	23.7	45	21.7	113	54.6	1
Scenic wilderness	174	84.5	19	9.2	13	6.3	2
Timber production	112	54.1	35	16.9	60	29.0	1

Table 13

1974 - Who should manage lands adjacent to rivers and lakes?
Rank your top three choices beginning with number 1.

	Ranked First		Ranked Second		Ranked Third		Marked Not Ranked	Not Marked
	N	%	N	%	N	%	N	N
Landowners	150	76.5	21	10.7	25	6.8	42	113
County and municipal agencies	23	18.9	62	50.8	37	30.3	21	208
State highway department	0	0.0	3	33.3	6	66.7	3	339
State parks department	27	25.5	29	27.4	50	47.2	12	233
U.S. Forest Service	20	19.8	44	43.6	37	36.6	22	228
U.S. Park Service	11	17.2	27	42.2	26	40.6	12	275
Local authorities under federal guidelines	38	32.5	43	36.8	36	30.8	116	218
State authorities under federal guidelines	23	25.0	36	29.1	33	35.9	12	247
Other	5	17.9	14	50.0	9	32.1	9	315

Table 14

1975 - Who should manage lands adjacent to Idaho's rivers and lakes?

Rank your choices in order beginning with number 1.

	Ranked First		Ranked Second		Ranked Third		Marked Not Ranked	Not Marked
	N	%	N	%	N	%	N	N
Landowners	78	73.6	17	8.2	6	2.9	8	99
County and Municipal Agents	19	29.7	28	43.8	10	15.6	2	149
State Highway Department	0	0.0	2	8.7	4	17.4	0	202
State Parks Department	10	19.2	14	26.9	15	28.8	2	167
U.S. Forest Service	14	29.2	18	37.5	6	12.5	3	167
U.S. Park Service	5	14.3	6	17.1	12	34.3	1	184
Local authorities under federal guidelines	11	19.0	22	37.9	12	20.7	2	161
State authorities under federal guidelines	26	38.8	19	28.4	8	11.9	1	154
Other	4	44.4	2	22.2	2	22.2	6	93

under federal guidelines, 3) U.S. Forest Service, 4) county and municipal agencies, and 5) the U.S. Parks Service.

The pattern changed noticeably by 1975 when 1) private ownership and control was followed by 2) state authorities under federal guidelines, 3) county and municipal agencies, 4) U.S. Forest Service, state parks department, local authorities under federal guidelines, and the U.S. Parks Service.

Between measurement periods, a number of statewide public issues became more intense (forest practices act, wild and scenic rivers study, energy development needs). Once these public issues took hold, the changes were reflected by public support being consolidated into fewer preferred resource management groups, namely county and municipal agencies, state authorities under federal guidelines, and the U.S. Forest Service.

Additional Recreational Facilities

Needed recreational facilities most often cited by Bonner County residents in Table 15 can be grouped under three headings as follows:

1. Day camping and recreational use

    a. Camping with vehicle access
    b. Boat launching

2. Long-term camping and recreational use

    a. Camping without vehicle access
    b. Trails
    c. Wilderness

3. Commercial development

    a. Resort facilities
    b. Other commercial development

Seen in this light, respondents placed a not unexpected high priority on day use, a second overall priority to long term use, and unmistakeably less preference to commercial recreational development.

Public Involvement Groups

Just how the people of Bonner County judge water and land use alternatives depends partially on their participation in community organizations. More important still are public perceptions of the importance of community organizations in a decision-making process. Thus, the people of Bonner County are not unlike those of other areas faced with water and land use decision alternatives. They size up the dimensions of public issues partially in terms of their perceptions of the relative importance of different community organizations and governmental agencies.

Table 15

What kinds of additional recreational facilities are needed on lands adjacent to rivers and lakes in this area? Rank your top three choices beginning with number 1.

	Ranked First		Ranked Second		Ranked Third		Marked Not Ranked		Not Marked	
	N	%	N	%	N	%	N	%	N	%
Camping with vehicle access	75	21.9	35	10.2	28	8.2	27	7.6	179	52.2
Camping without vehicle access	41	12.0	36	10.5	40	11.7	21	6.1	205	59.8
Resort facilities	4	1.2	15	4.4	7	2.0	11	3.2	306	89.2
Other commercial development	4	1.2	4	1.2	4	1.2	0	0.0	331	96.5
Boat launching	33	9.6	55	16.0	24	7.0	24	7.0	207	60.3
Wilderness shelters	32	9.3	49	14.3	52	15.2	21	6.1	189	55.1
Trails	32	9.3	51	14.9	57	16.6	24	7.0	179	52.2
No additional facilities	51	14.8	12	3.5	27	7.8	28	8.1	226	65.7

Moreover, many local, state and federal groups routinely vie for public attention in the mass media and through public involvement programs. The public is likely to perceive this visibility as an accurate indication of the relative contribution of various groups to the decision-making process. Moreover, public perceptions of community groups and governmental agencies are affected by groups' past histories and more general beliefs about government.

Respondents were asked what effect would well-publicized open meetings by several community groups have on local opinion formation and action concerning water and land use decisions. As Table 16 indicates, the groups judged to have the most impact on decision-making were the Bonner County Planning dnd Zoning Commission, Idaho Fish and Game, Bonner County commissioners, U.S. Forest Service, Sportsmen's groups, U.S. Army Corps of Engineers, and the Soil Conservation Service in that order.

Recreational Land Use Preferences

Twenty-four Likert-scaled land use statements were given as part of the 1974 and 1975 surveys. Eight of the statements were measured each year to be used as time-series data. Cross-examination of the data indicates that the same respondents made discernible shifts between measurement periods. That is, Table 17 reports that by 1975 noticeably higher priorities were given to (1) legally designated wild and scenic rivers, and (2) more state parks.

Conversely, the public expressed remarkably less support the second year for (1) wilderness as a land use, (2) pursuit of leasure, and (3) consideration of other's desires in land-use decisions.

There is no reason to believe that these changes do not reflect changing conditions in the larger American society during these same periods. Tables 18 and 19 reports the Likert-scaled questions which were administered one, but not both, years. Most of these items were also asked on a separate Idaho land-use survey and comparisons can be made. Responses to these questions suggest that Bonner County residents distinctly favor (1) managing trees on a rotating basis, and (2) requiring recreational users to pay the costs of operating public facilities designed to serve them at Idaho river and lake sites.

Social Value Measurement

Measures of personal values as underlying determinents of public opinion were also included in the 1975 attitude survey. In recent years, resource managers and social planners have been concerned about the difficulties of incorporating public opinion surveys into any overall resource decision-making matrix.

A critical question is, how can a price tag be placed on the social values that the public attaches to particular water and land use preferences?

Table 16

What effect would well-published open meetings conducted by each of the following groups have on local opinion and action concerning water and land use? Please check one of the three answer blanks for each organization.

	No Effect		Slight Effect		Important Effect		Not Marked	
	N	%	N	%	N	%	N	No Response
Bonner County Commissioners	36	12.6	106	37.2	143	50.2	15	67
Soil Conservation Service	43	16.1	135	50.6	89	33.3	24	76
Sportsmen's Group	28	9.9	119	42.2	135	47.9	18	67
Corps of Engineers	64	24.2	109	41.1	92	34.7	24	78
Chamber of Commerce	54	20.1	154	57.2	61	22.7	25	73
Bonner Co. Planning/Zoning	35	12.8	95	34.7	144	52.6	19	74
U.S. Forest Service	34	12.3	108	39.1	134	48.6	17	74
Gun Control Group	107	40.7	104	39.5	52	19.8	28	76
State Fish and Game	22	8.1	111	40.8	139	51.1	19	76
Federal Officials from Washington	105	39.2	110	41.0	53	19.8	23	76
Civic Clubs	63	23.4	138	51.3	68	25.3	22	76
Panhandle Planning and Development	51	19.7	135	52.1	73	28.2	31	77

Table 17. Frequency of distribution of recreational land use statements (1974 and 1975)

		Strongly Agree 1	2	3	4	5	6	7	8	9	Strongly Disagree 10	Mean	Standard Deviation
Idle land is a benefit to society	74N	64	11	30	20	28	36	12	30	12	65		
	%	20.8	3.6	9.7	6.5	9.1	11.7	3.9	9.7	3.9	21.1	5.500	3.307
	75N	27	2	10	11	42	65	4	15	9	13		
	%	13.6	1.0	5.1	5.6	21.2	32.8	2.0	7.6	4.5	6.6	5.374	2.425
We have enough state parks in Idaho	74N	60	11	39	14	31	22	13	53	16	55		
	%	19.1	3.5	12.4	4.5	9.9	7.0	4.1	16.9	5.1	17.5	5.576	3.250
	75N	12	2	13	11	55	50	5	16	7	12		
	%	6.6	1.1	7.1	6.0	30.1	27.3	2.7	8.7	3.8	6.6	5.574	2.147
Leisure activity serves a useful purpose in life	74N	172	25	38	22	45	4	0	0	2	9		
	%	54.1	7.9	11.7	6.9	14.2	1.3	0	0	0.6	2.8	2.550	2.591
	75N	35	8	29	6	111	9	2	1	2	0		
	%	17.2	3.9	14.3	3.0	54.7	4.4	1.0	0.5	1.0	0	3.995	1.733
In land use decisions the rights and desires of others are just as important as my own rights and desires	74N	160	30	36	17	48	4	3	7	3	19		
	%	48.9	9.2	11.0	5.2	14.7	1.2	0.9	2.1	0.9	5.8	2.917	2.583
	75N	49	5	23	6	100	10	5	1	1	2		
	%	24.3	2.5	11.4	3.0	49.5	5.0	2.5	0.5	0.5	1.0	3.881	1.969
We have enough legally designated wild and scenic rivers in Idaho	74N	53	15	19	10	37	19	17	30	21	95		
	%	16.8	4.7	6.0	3.2	11.7	6.0	5.4	9.5	6.6	30.1	6.256	3.399
	75N	13	4	4	5	50	46	4	11	14	25		
	%	7.4	2.3	2.3	2.8	28.4	26.1	2.3	6.3	8.0	14.2	6.085	2.470
Enough land has been set aside for wildlife protection and recreational use	74N	39	13	15	13	23	32	14	38	24	113		
	%	12.0	4.0	4.6	4.0	7.1	9.9	4.3	11.7	7.4	34.9	6.843	3.222
	75N	15	4	6	5	37	65	6	15	10	27		
	%	7.9	2.1	3.2	2.6	19.5	34.2	3.2	7.9	5.3	14.2	6.095	2.452

Table 17 continued

		Strongly Agree 1	2	3	4	5	6	7	8	9	Strongly Disagree 10	Mean	Standard Deviation
A person should have	74N	94	17	32	20	49	14	11	30	12	47		
the right to use his	%	28.8	5.2	9.8	6.1	15.0	4.3	3.4	9.2	3.7	14.4	4.687	3.267
own land in any way he	75N	55	5	11	4	85	29	5	2	1	8		
wishes	%	26.8	2.4	5.4	2.0	41.5	14.1	2.4	1.0	0.5	3.9	4.161	2.334
I consider myself well-	74N	17	16	36	20	17	59	19	52	21	60		
informed about the	%	5.3	5.0	11.3	6.3	5.3	18.6	6.0	16.4	6.6	18.9	6.553	4.520
Wild and Scenic Rivers	75N	13	2	14	6	23	100	10	8	5	23		
Act	%	6.4	1.0	6.9	2.9	11.3	49.0	4.9	3.9	2.5	11.3	5.917	2.201

Table 18. Frequency distribution of recreational land use statements (1974)

		Strongly Agree 1	2	3	4	5	6	7	8	9	Strongly Disagree 10	Mean	Standard Deviation
A view is just as beautiful from a roadside overlook as from a trail deep in a forest	N	40	12	22	15	30	22	10	33	34	110		
	%	12.2	3.7	6.7	4.6	9.1	6.7	3.0	10.1	10.4	33.5	6.744	3.275
All forms of recreation should be made easily accessible to everyone	N	63	17	26	15	40	19	7	29	25	93		
	%	18.9	5.1	7.8	4.5	12.0	5.7	2.1	8.7	7.5	27.8	5.943	3.473
Federal government agencies are better able to regulate water related recreation than are state government agencies	N	10	3	16	4	6	37	7	33	20	181		
	%	3.2	0.9	5.0	1.3	1.9	11.7	2.2	10.4	6.3	57.1	8.312	2.506
People realize their goals in life by using their land most profitably.	N	66	25	54	25	38	14	18	18	12	37		
	%	21.5	8.1	17.6	8.1	12.4	4.6	5.9	5.9	3.9	12.1	4.560	3.040
Trees should be managed as if they were a crop to be harvested on a rotating basis	N	156	33	39	11	40	7	3	5	8	20		
	%	48.4	10.2	12.1	3.4	12.4	2.2	0.9	1.6	2.5	6.2	2.975	2.695
If needed for national security purposes, the government should be able to re-classify fedeally owned lands in this area	N	52	24	40	25	52	13	8	17	12	79		
	%	16.1	7.5	12.4	7.8	16.1	4.0	2.5	5.3	3.7	24.5	5.429	3.320

Table 18 continued

		Strongly Agree 1	2	3	4	5	6	7	8	9	Strongly Disagree 10	Mean	Standard Deviation
The users of Idaho's lakes and streams should bear the bulk of the cost for operating these facilities.	N	103	43	38	17	40	11	7	23	5	31		
	%	32.3	13.5	11.9	5.3	12.5	3.4	2.2	7.2	1.6	9.7	3.875	3.039
Charges for camping in a state recreational area are justified as a means of discouraging overuse	N	76	15	33	11	32	26	9	29	19	73		
	%	23.5	4.6	10.2	3.4	9.9	8.0	2.8	9.0	5.9	22.6	5.452	3.471
Technology is advancing so rapidly that we need not worry about using up our natural resources	N	3	1	2	0	33	33	4	27	15	243		
	%	0.9	0.3	0.6	0.0	0.9	10.0	1.2	8.2	4.5	73.4	9.163	1.683
Land which has a high value for other uses should never be used as natural, open, or space	N	20	6	19	8	19	36	17	58	32	94		
	%	6.5	1.9	6.1	2.6	6.1	11.7	5.5	18.8	10.4	30.4	7.259	2.774

Table 19. Frequency distribution of recreational land use statements (1975)

		Strongly Agree 1	2	3	4	5	6	7	8	9	Strongly Disagree 10	Mean	Standard Deviation
I generally feel guilty when I enjoy leisure for more than a short period of time	N	4	3	4	9	29	79	12	18	9	30		
	%	2.0	1.5	2.0	4.6	14.7	40.1	6.1	9.1	4.6	15.2	6.528	2.069
We have enough areas legally designated as wilderness in Idaho	N	21	6	8	4	50	37	6	13	7	20		
	%	12.2	3.5	4.7	2.3	29.1	21.5	3.5	7.6	4.1	11.6	5.547	2.610
The primary satisfaction I get out of life is working	N	15	6	21	8	73	44	5	11	3	16		
	%	7.4	3.0	10.4	4.0	36.1	21.8	2.5	5.4	1.5	7.9	5.252	2.213
Most people spend too much time enjoying themselves today	N	12	4	7	7	41	67	9	25	11	15		
	%	6.1	2.0	3.5	3.5	20.7	33.8	4.5	12.6	5.6	7.6	6.000	2.189
I feel guilty when I am recreating because I am not working	N	4	2	1	1	13	109	9	23	11	28		
	%	2.0	1.0	0.5	0.5	6.5	54.2	4.5	11.2	5.5	13.9	6.766	1.855
We have enough national parks and national recreation areas	N	15	5	8	9	52	60	3	15	6	11		
	%	8.2	2.7	4.3	4.9	28.3	32.6	1.6	8.2	3.3	6.0	5.489	2.168

In a general sense, this question portends a need to understand the process by which personal values direct the selection of one public opinion preference over another. Thus, a more adequate measure of conceived preferential behavior is designed to give the public's view more systematic accord in establishing societal goals.

By using a value framework, the resource manager can better gauge how the public justifies its own criteria in selecting one management alternative over another. Secondly, the value framework focuses attention on overall priorities beyond point-in-time and point-in-place attitudes toward specific public issues. In fact, isolated attitudes are all too often measured without sufficiently anchoring them to the respondent's overall priority profile or ranking system.

The value framework utilized here emphasizes the relations between (1) attitudes toward resource management alternatives, (2) personal value hierarchies, and (3) personal values served by various resource management alternatives.

Employing the Rokeach Value Survey (Table 20) indicates how the 1975 sample of Bonner County residents ranked Rokeach's terminal values in comparison with a 1971 national value survey conducted by the National Opinion Research Center.

A second preliminary value measure was employed to compare the values clustered around four separate management alternatives. Respondents were asked to rank order the values that they saw as being most served by four water management alternatives: hydroelectric power, irrigation water, recreational development, and scenic wilderness (see Tables 21, 22, 23 and 24).

For decision making purposes these value clusters will be more useful once the four management alternatives are broken down in terms of whether or not respondents initially favor or oppose each of the management alternatives. In this way it is possible to make specific predictions about attitudes toward each of the management alternatives by calculation that combines the individual value profiles with the values respondents see as being served by their attitudes toward each of the management alternatives.

More information is needed, however, to cast these preliminary social value measures into an overall decision-making matrix. For one thing, the value clusters could be given accurate, composite scale values if respondents were first asked to indicate whether or not they favored the particular management alternatives. Social value theory predicts that favored attitudes will be reflected by top-ranked values and that disfavored attitudes by low-ranked values. Additional analysis of the social value data employed here is now being conducted under a related project.

Table 20. Terminal values for U.S. adult citizens and for Bonner County residents

Values	1971 (N=1,430)-National	1975 (N=208)-Bonner County
Terminal Values		
A comfortable life (a prosperous life)	10.6 (13)	9.6 (11)
An exciting life (a stimulating, active life)	15.2 (18)	12.2 (17)
A sense of accomplishment (lasting contribution)	9.6 (11)	8.6 (9)
A world of peace (free of war and conflict)	2.9 (1)	7.3 (5)
A world of beauty (beauty of nature and the arts)	12.5 (15)	10.2 (12)
Equality (brotherhood, equal opportunity for all)	7.6 (4)	7.0 (3)
Family Security (taking care of loved ones)	4.2 (2)	5.3 (1)
Freedom (independence, free choice)	5.3 (3)	6.5 (2)
Happiness (contentedness)	7.7 (6)	7.9 (6)
Inner harmony (freedom from inner conflict)	10.2 (12)	7.9 (7)
Mature love (sexual and spiritual intimacy)	11.9 (14)	11.4 (15)
National security (protection from attack)	9.0 (8)	10.4 (13)
Pleasure (an enjoyable, leisurely life)	14.7 (16)	11.4 (16)
Salvation (saved, eternal life)	9.2 (9)	10.7 (14)
Self-respect (self-esteem)	7.7 (5)	7.1 (4)
Social recognition (respect, admiration)	14.9 (17)	14.3 (18)
True friendship (close companionship)	9.4 (10)	8.8 (10)
Wisdom (a mature understanding of life)	8.2 (7)	8.0 (8)

Table 21. Values most served if hydroelectric power were the primary use of Idaho's water

1. A comfortable life
2. Family security
3. National security
4. A sense of accomplishment
5. Wisdom
6. Pleasure
7. Freedom
8. Equality
9. A world at peace
10. A world of beauty

Table 22. Values most served if irrigation water were the primary use of Idaho water

1. Family security
2. A comfortable life
3. A sense of accomplishment
4. A world of beauty
5. Happiness
6. Freedom
7. Wisdom
8. Self respect
9. Equality
10. Pleasure

Table 23. Values most served if recreational development were the primary use of Idaho water

1. Pleasure
2. A world of beauty
3. Happiness
4. Wisdom
5. An exciting life
6. Freedom
7. A comfortable life
8. Inner harmony
9. Equality
10. A sense of accomplishment

Table 24. Values most served if scenic wilderness were the primary use of Idaho water

1. A world of beauty
2. Pleasure
3. Happiness
4. Inner harmony
5. Wisdom
6. A sense of accomplishment
7. Freedom
8. An exciting life
9. A comfortable life
10. A world of peace

PART IV

LEGAL OWNERSHIP PRIORITY AND CLASSIFICATION CRITERIA

Douglas L. Grant

The problem discussed in this report is whether or not the water level of Priest Lake during the summer could be lowered about six inches in order to provide more water for a Priest River wild, scenic or recreational river area below the lake. The short answer is that this proposal raises several unresolved legal issues which only the courts or legislative amendment can settle. The pros and cons regarding these issues are discussed below, but in most cases no confident prediction of outcome is (or could be) made.

Nature of Lake Level Maintenance Rights

The Idaho legislature has enacted several statutes pertaining to water level maintenance in Priest Lake.

> I.C. §67-4304. "The governor is hereby authorized and directed to appropriate in trust for the people of the state of Idaho all the unappropriated water of Priest [and two other] . . . Lakes or so much thereof as may be necessary to preserve said lakes in their present condition. The preservation of said water in said lakes for scenic beauty, health, recreation, transportation and commercial purposes necessary and desirable for all the inhabitants of the state is hereby declared to be a beneficial use of such water.
>
> ". . . no proof of completion of any works of diversion shall be required, but [a water] license shall issue at any time upon proof of beneficial use to which said waters are not devoted.
>
> "Each succeeding governor in office shall be deemed to be a holder of such permit in trust for the people of the state."

> I.C. §70-501. "The state reclamation engineer [now the director of the Department of Water Resources] is hereby authorized to prepare plans and specifications for the construction of an outlet control structure to be located in Priest River which will regulate the level of Priest Lake, located in Bonner County, Idaho, at a level which will preserve for the use of the people the beach, boating and other recreational facilities which are now located on said lake."

> I.C. §70-507. "The Priest Lake outlet control structure shall, when constructed, be under the supervision and control of the director of the department of water administration, who may enter into contracts for a period of one (1) year or more with persons or corporations, by him deemed qualified to operate and maintain, at their sole expense, said outlet control structure or any other control structure erected as a replacement thereof: provided, however, that under no circumstances shall the water surface level of Priest Lake be maintained or regulated by said director of the department of water administration above 3.0 feet on the present United States Geological Survey Priest Lake outlet gage with gage datum of 2434.64 feet above mean

sea level, datum of 1929, supplementary adjustment of 1947, or released below 0.1 feet on said gage; provided further, that the water surface level of Priest Lake shall be maintained at 3.0 feet on the United States Geological Survey Priest Lake outlet gage, from and after the time each year following the run-off of accumulated winter snows, when the surface level of the waters of Priest Lake has receded to such elevation, until the time after the close of the main recreational season, as determined by said director of the department of water administration, that said lake waters may be released and the surface level permitted to recede below said elevation 3.0."

The first statute was enacted in 1927. The latter two were passed in 1950, although the provision of Idaho Code §70-507 requiring maintenance of the lake level at 3.0 feet on the outlet gage during part of each year was not added until 1957 and the current formulation of the time period for maintenance ("until the time after the close of the main recreational season . . ." etc.) was not adopted until 1961.

Presumably a permit and license were issued in accordance with Idaho Code §67-4304 shortly after its enactment in 1927, although I have no specific information on this point. Until recently there was serious doubt about the validity of the kind of appropriation contemplated by that statute. The water level maintenance scheme raised three issues: (1) May the state, through the governor, appropriate water and obtain a priority date? The Idaho Supreme Court decision in State Water Conservation Board v. Enking, 56 Idaho 722, 58 P.2d 779 (1936) arguably compelled a negative answer to this question. (2) Does the use of water for scenic beauty, health, and recreation constitute a beneficial use of water as required for a valid appropriation? This issue had never been directly before the Idaho Supreme Court. Arguably the mention of certain water uses in the Idaho Constitution--but not scenic beauty, health, or recreation--would support an inference that such uses could not be deemed beneficial. (3) Can an appropriation be made without an actual physical diversion of water from its natural condition of locus? Again, this issue had never been directly before the Idaho Supreme Court. Some Idaho cases, however, arguably could be read as suggesting that the Idaho Constitution requires an actual physical diversion for an appropriation.

In a landmark case decided last year, State Dept. of Parks v. Idahp Dept. of Water Administration, 530 P.2d 924 (Idaho 1974), the Idaho Court faced essentially the same three questions and answered them all in the affirmative. Specifically, the court upheld a statutorily authorized instream appropriation of certain water of Malad Canyon by the state park board in trust for the people of Idaho for scenic beauty and recreational purposes. There do not seem to be significant differences between the Malad Canyon and the Priest Lake appropriation statutes. The Malad Canyon statute authorizes and directs the appropriation to be made by an agency within the executive branch of state government, while the Priest Lake statute authorizes and directs it to be made by the chief official of the executive branch. The declaration in the Malad Canyon statute that recreation and scenic beauty uses in the canyon are beneficial was upheld according to the principal opinion in the case, because:

> "[w]e find no basis upon which to disturb that declaration of the legislature that in this instance those values and benefits constitute "beneficial uses.'" (Emphasis added)

The underlined words suggest that the Court would not necessarily allow appropriations of water for scenic beauty and recreational purposes on an across the board basis. A concurring opinion suggests that recreational and scenic water uses might not be beneficial, despite a legislative declaration to that effect, in the face of severe demand for water for more desirable uses for more urgent needs. It is unlikely that such a severe demand would be found in the Priest Lake area. Finally, the Court ruled that the Idaho Constitution does not require any physical diversion for an appropriation and that the legislature could--and in the Malad Canyon statute did intend to--authorize an appropriation without the traditional element. The Priest Lake statute is even clearer than the Malad Canyon statute in dispensing with the diversion requirement. Thus, there is a very strong probability that the Priest Lake water level appropriation statute is constitutionally valid and that the Governor holds an appropriation of water in trust for the people with a priority date as of the time of issuance of a permit under the statute (presumably in 1927 or shortly thereafter).

The foregoing discussion relates to Idaho Code 67-4304 (hereinafter called the appropriation statute). It is now necessary to assess the impact of the other two statutes--Idaho Code 70-501 and 70-507 (hereinafter called the outlet dam statutes). The appropriation statute had the effect of protecting the natural lake levels existing at the time of issuance of a license from depletion due to subsequent appropriations of water. The outlet dam stautes apparently have a further impact. Pursuant to authority granted in section 70-507 the outlet dam is operated by Washington Water Power Company under an agreement which is due for renewal in 1976. A recent study of the hydrology of Priest Lake reports:

> "The present system of operations [of the outlet dam] results in abnormally low summer flows in Priest River in August and September and sudden abnormally high flows in the river when the stored water is released in October." P. Doyle, Analysis of Alternative Water Release Operations for Priest Lake, Idaho (unpublished master's thesis, University of Idaho, 1974).

As a corollary of this, the lake level would have to be higher in August and September than would be the case without the outlet dam. The matter is further complicated by the following information:

> "The stoplogs are installed in the dam each year following spring runoff as gage height approaches 3.0 ft. (gage height of 0.0 ft. is the normal datum) and in recent years have been removed on successive weekends in late October . . . . The gage height has varied from 2.9 to 3.4 ft. during the summer, and occasionally the lake level has risen while river flow decreased probably due to the installation of additional stoplogs. Thus, the present operation meets neither the terms of the Operating Agreement (1956) between Washington Water Power Company and the state of Idaho nor Section 70-507 of the Idaho Code which states that the lake level will be

maintained at the 3.0 level during the recreation season and not above this level." Id. at 11.

This situation generates some uncertainty regarding the effect of a release of water from Priest Lake to augment the flow of a wild, scenic or recreational river area downstream from the Lake.

The possible results of such a release of water are that:

1. The water level of Priest Lake would be drawn below that established by both the outlet dam and the appropriation statutes (if, indeed, the two statutes establish different levels);

2. The water level would be drawn below that established by the outlet dam statutes but now below the level of the appropriation statute;

3. the water level would not be drawn below that established by either statute.

The water level implied by the appropriation statute probably would be viewed as a vested property right under state law. See State Dept. of Parks v. Idaho Dept. of Water Administration, 530 P.2d 924 (Idaho 1974). The same might be true of the outlet dam level, i.e., arguably the outlet dam statutes are in aid of the earlier appropriation statute and establish an additional lake level appropriation of water right. This is more speculative, however. It may instead be concluded that the outlet dam statutes are merely police power regulations which do not constitute vested property rights of the state. The significance of this distinction between a proprietary or a regulatory characterization of the outlet dam statutes will be made apparent in the next section.

Relation of Federal and State Water Rights

Under section 13(c) of the Wild and Scenic Rivers Act, the designation of a stream as a national wild, scenic or recreational river constitutes a reservation of the unappropriated waters of such stream in a quantity necessary to accomplish the purposes of the Act. The reserved right has a priority date which takes its place along with the priority dates of other water rights for purposes of administration under the appropriation doctrine. The priority date of a reserved water right in a section 5 study river, such as the Priest, is uncertain. The reservation could be viewed as becoming effective: (1) when, and if, the river is permanently included in the wild and scenic rivers system by subsequent act of Congress, (2) in 1968 when the Wild and Scenic Rivers Act was passed by Congress, or (3) in the case of land otherwise withdrawn from entry under federal public land laws, when the original withdrawal was made. The legislative history of the Act yields no clear solution to the problem of determining the priority date. The authors of a careful study of the Wild and Scenic Rivers Act argue that the priority should date from the time of the passage of the Act in 1968, i.e., alternative (2) above. Tarlock

and Tippy, The Wild and Scenic Rivers Act of 1968 55 Cornell L. Rev. 707, 738-39 (1970). If either alternative (1) or (2) above is the correct one, then a state water right for maintenance of the water level of Priest Lake under the provisions of the Idaho Code discussed above would be senior in time to a federal reserved water right for minimum flow maintenance in Priest River. Also, it should be noted that the federal right would reach only water which is unappropriated at the time of the reservation. It would not affect or impair any prior valid state water right for the purpose of water level maintenance in Priest Lake. See 113 Cong. Rec. 21747 and 21748.

Section 13(b) of the Wild and Scenic Rivers Act Provides:

> "Under the provisions of this chapter, any taking by the United States of a water right which is vested under either State or Federal law at the time such river is included in the national wild and scenic rivers system shall entitle the owner thereof to just compensation."

Thus, an appropriation of water under either the appropriation statute of the outlet dam statutes (if these statutes are viewed as creating a vested water right under state law) could not be impaired without the payment of just compensation in connection with exercise of the federal power or eminent domain. On the other hand, if the outlet dam statutes are viewed as merely regulatory in nature (rather than as creating a property right held by the state in trust for the public) then under the supremacy clause of the United States Constitution, a valid federal statute of administrative regulation could require the lowering of the level of Priest Lake below the statutory level without resort to eminent domain and the payment of just compensation. Thus, it could be vitally important to determine whether the current lake level statutes create property rights in the state of merely regulate. Unfortunately, the question can be answered definitively only by a court.

Federal Eminent Domain

Assuming that additional water for a wild, scenic or recreational river area below Priest Lake could be acquired from the lake only by exercise of the power of eminent domain, it must then be asked whether there is in fact a federal power of eminent domain for this purpose. The portion of section 13(b) (quoted immediately above) which requires the payment of just compensation upon a taking by the United States of a vested water right obviously contemplates that water rights may be condemned to accomplish the purpose of the Act. Several questions arise concerning the scope of such a power, however,

The first question is whether water rights in Priest Lake could be condemned to augment or regularize the flow of Priest River so that the river would more readily qualify for inclusion within the national wild and scenic rivers system. Sections 1(b) and 2(b) of the National Wild and Scenic Rivers Act provide in part:

> Section 1(b). "It is hereby declared to be the policy of the United States that certain selected rivers of the Nation

> which with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition and that they and their immediate environs shall be protected for the benefit and enjoyment of present and future generations . . . ."
>
> Section 2(b). "A wild, scenic or recreational river area eligible to be included in the system is a free-flowing stream and the related adjacent area that possesses one or more of the values referred to in section 1, subsection (b) of the Act . . ."

The present tense wording of these provisions seems to imply that to be eligible for inclusion in the system a river must presently have the necessary values. In other words, it is probable that condemnation of water rights to augment flow may not be employed to produce enough of the desired values to qualify a river for inclusion in the system if the river did not already possess such values in sufficient quantity and quality.

A second question is whether condemnation of vested water rights can be utilized to enhance existing values which are sufficient to justify inclusion of a river in the system but which could be improved upon by augmentation of the river flow. The declaration of policy in section 1(b) above refers only to preservation and protection, not enhancement. Section 10(a), however, includes the statement that: "[e]ach component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system . . . ." (Emphasis added.) The reference to enhancement is arguably helpful to a proponent of condemnation of Priest Lake water rights for the purpose of augmenting the flow of Priest River during dry years of dry periods of a year. The reference is not conclusive, however. An opponent of such condemnation might question whether section 10, which relates to administration, should be construed to apply to matters of property acquisition, i.e., water rights held by others, as distinguished from administering what is already there. Also, there is some ambiguity in the phrase "enhance the values which caused it to be included in said system." An opponent of condemnation might argue that the values protected have a time dimension. Suppose, for example, that a stream was included in the system because of outstandingly remarkable scenic and recreational values present during the spring and early summer, but flow during August was regularly too low for those values to be present. It might be argued that there are no scenic and recreational values to be enhanced during August by stream flow augmentation and that enhancement means to make greater what already exists, not to create when there is nothing. A proponent of condemnation would, of course, reject the time dimension premise of the argument. There is no clear solution in the statute or the legislative history to the problem of choosing between these positions, although the opponent's argument might be getting too cute with words to be persuasive. (Similarly, a proponent of condemnation might argue that he is only trying to "preserve" in August what was there earlier in the summer or to "preserve" in dry years values that are present in wet years; but this argument may be suspect for the same reason.)

Although the scope of the power of eminent domain with respect to water rights is incapable of precise delineation at the present time, let us assume for the sake of moving on to a third question that vested water rights may be condemned to accomplish the purposes of the Act and that the purposes include augmentation of flow during dry years or dry periods--without regard to whether that would be preservation or enhancement. The next issue is whether the exercise of this power of eminent domain is restricted by any special or peculiar limitations in the Act. Section 6(a) of the Act confers the power to condemn "lands and interests in land," but this power is subject to several limitations, including the following two:

> (1) The lands and interests in land which are acquired must be "within the authorized boundaries of . . . the component of the national wild and scenic rivers system . . . ."
> (2) "Lands owned by a State may be acquired only by donation," i.e., they cannot be acquired by condemnation.

If a water right is deemed "land" or an "interest in land" as those terms are used in section 6(a), then requirement (2) above would forbid condemnation of a state owned water right, such as the Priest Lake water right. If Priest Lake is not included along with Priest River in the national wild and scenic rivers system, then perhaps even requirement (1) would be a barrier since arguably at least, the situs of the water right would be outside the system. Thus, further inquiry into the terms "lands" and "interests in land" in section 6(a) is crucial.

It might be argued that those terms should be construed to include water rights because if they are not, there is no express delegation of power to acquire vested water rights anywhere in the Act, yet section 13(b), supra p. 87, implies that such water rights may be condemned by the United States. In response, it might be contended that section 13(b) is an implicit delegation of such power so that no express delegation elsewhere in the Act is needed.

It is obvious that these terms as used in section 6 (a) refer to soil, e.g., one clause prohibits the acquisition of fee title to an average of not more than 100 acres per mile on both sides of the river. The problem is to determine whether the terms refer not only to soil but to other kinds of property, including water rights. Black's Law Dictionary states:

> "LAND, in the most general sense, comprehends any ground, soil, or earth whatsoever; as fields, meadows, pastures, woods, moors, waters, marshes, furzes, and heath." (Emphasis added.) Accord, 73C.J.S., Property 7(1951).

In this broad sense, an interest in land could include a water right. The real question, of course, is whether or not the United States Congress was using the term "land" in this broad sense when it enacted section 6 (a) of the Wild and Scenic Rivers Act. The only clue from legislative history is the following colloquy between Senators Church and Allott regarding S. 119:

> "Mr. CHURCH. The bill contains a limited power of condemnation.
> Mr. ALLOTT. Will the Senator explain that, and state where that limited power is?

Mr. CHURCH. Yes. Wherever 50 percent or more of the land within any wild river area is publicly owned, now power of condemnation is conferred by the bill, except as to the acquisition of scenic easements.

Mr. ALLOTT. Does the Senator mean where more than 50 percent is publicly owned?

Mr. CHURCH. Yes. Where more than 50 percent is publicly owned, there is no power of condemnation except for a scenic easement. Where less than 50 percent is publicly owned, there is a limited right of condemnation conferred to Section 5 (d) of the bill. It is limited to acquiring a maximum of 100 acres per mile on both sides of the stream, tributary or river.

Section 5 (a) of the bill sets the maximum acreage for the boundaries as 320 acres per mile, on both sides of the stream, tributary, or river.

So the bill does two things: It establishes the maximum area of the boundaries themselves; and, within the boundaries, it limits the condemnation authority to cases where less than half the river bank is in the public domain.

Mr. ALLOTT. The power of condemnation does not apply, then, to any portion outside the portion described in the bill?

Mr. CHURCH. It does not.

Mr. ALLOTT. Does it apply to water rights?

Mr. CHURCH. It applies to property rights, which may include water rights, but only if just compensation is made." (Emphasis added.) 113 Cong. Rec. 21748 (1967).

Senator Church's final comment bears close scrutiny. The first part ("It applies to property rights, which may include water rights . . .") seems to refer to the limited right of condemnation conferred by section 5 (d) of S. 119. The last part evidently refers to section 6 (f) of S.119 as it was written at the time of discussion. The Senate passed S.119 without changing these provisions. S.119 eventually became law but only after much of the language of original S.119 was replaced by provisions of a wild and scenic rivers bill passed by the House of Representatives. Original section 6 (f) was retained by renumbered, and it now appears as section 13 (b) of the Wild and Scenic Rivers Act, supra p. 87. Original section 5 (d) was dropped and replaced by provisions which now appear in section 6 of the Wild and Scenic Rivers Act. Thus, in order to evaluate the current significance of the Church-Allott coloquy, one must first analyze original section 5 (d) of S.119 and then compare it with section 6 of the law that was finally enacted by Congress.

Section 5 (d) of S.119, as it existed when being discussed by Senator Church and Allott read in part as follows:

"Within the exterior bounds of a national wild or scenic river area, the Secretary of the Interior or the Secretary of Agriculture may acquire lands or interests therein by donation, purchase with donated or appropriated funds, exchange, or otherwise: Provided that on both sides of the stream, tributary or river a total of not more than one hundred acres per mile may be acquired in fee

> under the authority of this act . . ." Provided further, that neither Secretary may acquire lands, waters, or interests therein by condemnation without the owner's consent when 50 percentum or more of the acreage with the entire national wild or scenic river area is owned by Federal, State, or local government agencies, but this limitation shall not apply to the acquisition of scenic easements. Lands owned by a State may be acquired only with the consent of the owner . . . ."

This section consists basically of two parts. First, there is the conferral of a power to acquire "lands or interests therein," by any procedure, including condemnation. (See also 40 U.S.C. §257) Then, there are provisos limiting the general power which the first part confers. Waters are explicitly mentioned only in the second proviso, i.e., the one limiting condemnation where 50 percent or more of the acreage within a component of the system is governmentally owned. It might plausibly be argued that there would be no point in mentioning waters in a limiting clause unless the general conferral of power to acquire "lands and interests therein" was intended in the broad sense, i.e., to include water rights, rather than in a narrow sense. Further support for this argument may be found in the Church-Allott colloquy quoted above. The final comment of Senator Church, the principal sponsor of S.119, seems to interpret the conferral of the power of eminent domain in section 5 (d) in the broad sense, i.e., to apply "to property rights, which may include water rights . . . ."

In response it might be contended that even if the first part of section 5 (d) uses "lands and interests therein" in the broad sense, the limiting clauses which follow do not--otherwise there would be no need expressly to mention waters in addition to lands in the limiting clause which states "neither Secretary may acquire lands, waters, or interests therein by condemnation without . . . ." Similarly (to continue the response), the word "lands" is used in the narrow sense, i.e., as not including water rights, in the following limitation which states: "Lands owned by a State may be acquired only with the consent of the owner."

Resolution of this argument is vitally important because the sentence from section 5(d) quoted immediately above (last sentence of preceding paragraph) would preclude federal condemnation of a state owned water right if the word "lands" in that sentence is given a broad construction so as to include water rights. The source of the problem may be imprecision of draftsmanship which can be definitively settled only by a court.

Another factor muddies the waters even more. As noted earlier, original section 5 (d) of S.119 never became law but was replaced by what is now designated as section 6 of the Wild and Scenic Rivers Act. The pertinent provisions for present purposes are:

> "(a) The Secretary of the Interior and the Secretary of Agriculture are each authorized to acquire lands and interests in land within the authorized boundaries of any component of the national wild and scenic rivers system . . . which is administered by him, but he shall not acquire fee title to an average of more than 100

> acres per mile on both sides of the river. Lands owned by a State may be acquired only by donation . . . .
> "(b) If 50 percentum or more of the entire acreage within a federally administered wild, scenic or recreational river area is owned by the United States, by the State of States within which it lies, or by political subdivisions of those States, neither Secretary shall acquire fee title to any lands by condemnation under the authority of this chapter . . . ."

This language follows the pattern and general substance of old section 5 (d). First there is a conferral of power to acquire "lands and interests in land" followed by limiting provisions, although there is no mention of waters even in a limiting clause. There is still the limitation that "[l]ands owned by a State may be acquired only by donation . . . ." The controversy stated earlier concerning old section 5 (d) and the Church-Allott colloquy regarding it remains unresolved and, still, only a court can provide the definitive answer. Suffice it to say that a plausible argument can be made to the effect that section 6 (a) bars condemnation of a state owned water right.

Other Eminent Domain Issues

If federal condemnation of the State of Idaho's Priest Lake water right is authorized, there are the additional problems to consider of to whom just compensation should be paid and how the amount should be computed. Idaho Code §67-4304 provides that the water right is held by each succeeding governor in trust for the people of the state. It seems clear that the governor would be a party to any condemnation proceeding and, presumably, any compensation paid to him would be held in trust for the people of the state. Would the beneficiaries of the water right--riparian landowners, others owning land near Priest Lake, and members of the public in general who use the lake for recreation, enjoyment of scenic beauty, ets.--also have a claim for compensation? Essentially the same issue was litigated in Linning v. United States, 328 F.2d 603 (5th Cir. 1964) when the federal government condemned tidal land owned by the State of Florida in trust for all the citizens of Florida. Various citizens and taxpayers sought to intervene in the proceeding, but their petition was denied upon the ground that: "[o]wnership by or in trust for the public does not create an ownership interest in individual citizens and taxpayers such as requires or permits them to parties to a condemnation action by the United States." Accord, 4A Nichols, Eminent Domain §5.91 (3d ed. 1970). Thus, users of the lake would have no direct right to compensation by claiming to be beneficiaries of the public trust.

Could property owners in the vicinity of Priest Lake whose property values go down because of a lowering of the water level claim just compensation for such losses? It is assumed that none of the property of such persons would be taken or invaded by the federal government but only that the value of what they have would decrease because loss of some of the scenic beauty and recreational values of Priest Lake. If such is the case, these landowners probably would not be entitled to any compensation. The reason is that under the Fifth Amendment, which governs federal exercise of the eminent domain, compensation is due only if property is "taken". Consequential damage to a

parcel not taken is not compensable unless the interference with the parcel is so severe as to be tantamount to a deprivation of the beneficial use of the property. 4A Nichols, Eminent Domain §14.1[1] (3d ed. 1971).

There is, however, one other possible class of property owners who would be entitled to just compensation for the federal condemnation of (part of) the state's water right for maintenance of the water level of Priest Lake. Currently the outlet dam is operated in such a manner that the lake level is higher than would naturally be the case until the end of the main recreation season; then much of the stored water is released over a short period of time. It is possible (factual data to determine this is not available) that someone below the lake utilizes the water provided by the end-of-season drawdown and has an appropriation for that purpose. For example, Washington Water Power Company might (depending on the terms of its outlet dam operating agreement with the state) have a water right for power generation from such water. Federal condemnation of the state's lake level maintenance water right might also interfere with use of the water by the holder of the second water right. Idaho Code §42-222 gives the holder of the second water right a property interest protecting him against injury caused by change in the place of use of the earlier (condemned) water right. Thus, the federal government might also have to condemn part of a second water right in order to fully accomplish the purpose of condemning the state's lake level maintenance water right.

Turning now to the amount of compensation due upon condemnation of a water right, ordinarily the standard of payment is the market value of the property taken. In exceptional cases where there is no ascertainable market value, some other standard must be used. 4 Nichols, Eminent Domain §12.1 (3d ed. 1971) There is no ascertainable market for water rights owned by a state in trust for the public (indeed, the public trust most likely would preclude a voluntary sale of the water right by the state). However, there is (presumably) an ascertainable market for water rights in general, and this would be sufficient to invoke the market value measure of just compensation. See United States v. State of South Dakota, 329 F.2d 665 (8th Cir. 1964) (by implication). Even if there is no such ascertainable market within the relevant area, it may be possible to arrive at market value through a recognized valuation formula such as capitalization of income.

There is another exception to the market value rule that should be considered. Where a state, county or other governmental body is obligated to furnish the facilities which are being taken by eminent domain, or to continue to provide the services for which the facilities were required, just compensation may be measured by the cost of providing substitute facilities. A Annot., Eminent Domain: Cost of Substitute Facilities as Measure of Compensation Paid to State or Municipality for Condemnation of Public Property, 40 A.L.R.3d 142 (1971). If the state or other governmental body is not obligated to provide substitute facilities or services, compensation is not based on the cost of sbustitute facilities. There is some uncertainty in the cases with regard to when a governmental body is under a sufficient duty to provide substitute facilities to justify using the substitute facility doctrine to measure just compensation. There is no case authority involving condemnation of a water right held by a state in trust for the public, but there is at least a roughly analagous federal court case in which market value was held

to be the proper measure of just compensation. United States v. State of South Dakota, 329 F.2d (8th Cir. 1964) (upon federal condemnation of state park land the proper measure of compensation was market value, not the cost to acquire a substitute site); but see United States v. Certain Land in Brooklyn, 346 F.2d 690 (2d Cir. 1965). It could be argued however, that the public trust concept requires the state to use the eminent domain proceeds paid to it to provide a substitute water supply for maintenance of the lake level; but the validity of such an argument is speculative. See generally Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 Mich. L. Rev. 473 (1970).

If the proper measure of compensation is market value, rather than the cost of a substitute site, the state is, of course, entitled to the market value of the quantity of water condemned. Whether the state might also recover severance damages for injury to what remains is speculative both as to whether any severance damage would be due the state as owner in trust for the public and, if any is due, as to the amount. The burden would be on the state to show that a taking of part of its water right will cause damage to the remainder and to furnish a basis from which a reasonable and proper estimate of the amount of damage can be made. 4A Nichols, Eminent Domain §14.21 (3d ed. 1971).

PART V

ALTERNATIVES AND CRITERIA PLANS FOR CLASSIFICATION

The criteria for classification outlined below consider the definition of the Wild and Scenic Rivers Act and the relation of each portion of the river to this definition. This study is NOT intended to encourage or propose placing any portion of the Priest River into the Wild and Scenic Rivers System. On the other hand, it is not an attempt to discourage it either. We have attempted to take a neutral position by considering whether the river could qualify under the definition of the Act and if so for what classification would each portion qualify. We hope our information is objective and nonpartisan and that it indicates the conditions as they exist. If we have been successful, then policy and decision making groups and the public, hopefully, can use the information to assist them in making more knowledgeable and reasonable decisions.

There are many alternatives to consider in studying any river for wild and scenic river classification. What is most important is to identify those characteristics which make the river attractive or unattractive as a wild and scenic river. The purpose of this report is to identify such characteristics and then to set forth an analytical framework which permits them to be evaluated. This evaluation will be done in terms of the criteria originally intended in the Wild and Scenic River Act (PL 90-542) and then modified by "Guidelines for Wild and Scenic River Classification", U.S. Department of Agriculture, U.S. Department of Interior.

A matrix approach has been utilized to consider overall classification alternatives. The matrix will be combined with factor profile analysis on selected physical and economic characteristics of each portion or reach of the river. Additional consideration will then go to hydrologic characteristics. The public involvement and aesthetic considerations will be broached for the entire Priest River system as a whole. (Canadian border to the mouth of the Priest River.)

Physical and Economic Characteristics

The Priest River was divided, according to "natural boundaries", into six reaches to evaluate the physical features in relation to the definition of the Act and the guidelines. Reach I begins at the Canadian border and ends at its confluence with Upper Priest Lake. Reach II encompasses Upper Priest Lake, while reach III is the thoroughfare which links the two lakes. Reach IV embodies the main lake. Reach V extends from the outlet of the main lake to just above McAbee Falls, and reach VI covers the river areas from McAbee Falls to the slackwater at the mouth of Priest River.

Reach I--Canadian border to Upper Priest Lake--appears to have the most desirable characteristics for wild and scenic river classification. This reach of the river flows through an old mature cedar-hemlock forest in a beautiful setting. Much wildlife exists in the area and includes grizzly bear, caribou, elk, deer, and black bear as major features. The area also has certain features which detract from its desirability. A logging road follows the river for several miles within the 1/4 mile corridor. A bridge crosses the river about halfway between the Upper Lake and the Canadian border. Finally, logging clearcuts can be seen from the river on adjacent mountainsides and in the high country.

Reach II--Upper Priest Lake--also has many features which are quite favorable to the wild classification. There has not been any major recreational development in this area. There are no roads or railroads within 1/4 mile of this lake. Finally, it is a very natural environment which includes some very attractive features such as fish, wildlife, and spectacular scenery. However, Upper Priest Lake is a partially impounded lake which is regulated by the Priest Lake Dam at the outlet.

This third reach--the Thoroughfare--also appears to have many characteristics which would, on the surface, tend to support a wild and scenic river classification, but again there are some features which need to be evaluated. The Thoroughfare is also a regulated body of water. It has some recreational development along the southern end, and there is a large breakwater erected as an aid to navigation at the southern entrance. In addition, there is a road within the 1/4 mile corridor at the southern end.

Reach IV--Priest Lake--has many attractive features such as beautiful scenery, clear water, and large areas of relatively undeveloped land along its shores. In contrast, a relatively large proportion of the lake front land has been developed for summer home use. There are roads completely around the lake within what would be the 1/4 mile corridor. It is also a partially impounded large water body. The roads and recreational developments are highly visible both from the water and the shore of the lake. Finally, the outlet dam controls the lake level during summer months.

Reach V--outlet dam to above McAbee Falls--has several favorable aspects which make it somewhat attractive as a wild and scenic river. The character of the river changes from fast-moving rapids to a slow meander over this reach. Osprey and waterfowl nesting sites are located along this portion of the river. Trout and whitefish reside in the river during portions of the year. However, there is one major highway bridge across the river. The main highway parallels the river for several miles, and many secondary roads approach within the 1/4 mile corridor. Finally, there are some man-made structures along the river.

Reach VI--McAbee Falls to slackwater--this portion of the river has a number of attractive features related to floating the river. Below McAbee Falls the river tends to pick up speed. At Eight Mile Rapid the rover drops 75 feet in 1½ miles, creating one of the best whitewater experiences on the Priest River. There are several other rapids below this which also add to the interest and the character of the river. However, the land around the river in this reach is more intensively used, and it has considerably more development within the 1/4 mile corridor. Homes, farmsteads, highways, and the town of Priest River are all prominent features visible from the river.

What is clearly evident from the above descriptions is that there is no such thing as a reach of the Priest River which can be classified in a pure sense according to the Wild and Scenic Rivers Act. However, if the Guidelines for Wild and Scenic River Classification as published jointly by the U.S. Department of Agriculture and the U.S. Department of Interior are referred to, it is possible to develop a classification scheme for Priest River.

Matrices were constructed from physical and economic data to aid in evaluating the reaches of the river (Tables 25-27). Each characteristic or feature was then considered independently in factor profile analysis to evaluate its suitability relative to other reaches of the Priest River. The results derived from evaluation of the matrices and factor profile analysis were then combined in considering the possibilities for classifications for the river under the Act and guidelines established for wild and scenic rivers.

Preference categories from one to five--five being the most desirable for classification--were established for each feature in the factor profile analysis (Tables 28-30). These categories are arbitrary, and the basis used to develop them may or may not apply on other rivers. However, the analytical framework is consistent and should have wide applicability. The desirability of each reach was then graphed for a number of features.

Three distinct groups emerged when the data were analyzed. The first concerns characteristics which are quite broad and generally relate to publicly owned or used features (Table 25). The second group consists of features which are privately owned, and they are presented on a per reach basis (Table 26). The final group indicates the density of features per mile of reach (Table 27). All values are based on a per mile average estimate.

Features in the first group are of vital concern in considering a river for classification. The guidelines suggest that a classified portion of river should be of sufficient length to provide a "meaningful experience". Consequently, reaches II and III would almost certainly need to be combined, probably with reach I, if they are to meet this guideline (Figure 8a). The ownership of land may affect the feasibility of classification. Nearly all land above Priest Lake is already in public ownership, while private lands tends to increase downstream (Figure 8b). There are five in-stream structures in the Priest River (Figure 8c). These are located from the end of the thoroughfare to the mouth and detract from the river's natural, unaltered setting. One of these structures is a small dam at the outlet of Priest Lake, which in effect, can be employed to regulate the water level of reaches II through VI at some time during the year. This feature in itself may be sufficient to prevent classification of the river, since it is not, strictly speaking, a free-flowing stream. In addition to the structures in the stream, there are three bridges which span the river (Figure 8d), and over sixty miles of roadway are within one-quarter mile of the shoreline (Figure 8e). Most of the roads are in reach IV. Power lines become factors around Priest Lake and below (Figure 8f). At present, reach IV also supports the heaviest recreational use with reach VI probably the next most used. The best white water area on the Priest River is in reach VI at Eight Mile Rapids (Figure 8g). Scenery from the water level ranges from heavily forested rugged mountains near the Canadian border to meandering open stretches of predominantly agricultural land in reaches V and VI (Figure 8h).

While the first group concerned general features, the second group considers characteristics relevant to private ownership within each reach. Private ownership is prevalent from the mouth of the river to the thoroughfare with no appreciable amount of private land above the thoroughfare

Table 25. General physical data employed to evaluate the attractiveness and feasibility of reaches of the Priest River for consideration in the wild and scenic rivers system, 1974.

Factor (per reach)	Corridor Total	REACH I	II	III	IV	V	VI
Number of miles	88.1	18.4	3.6	2.1	20.0	31.2	12.8
Percent federal land	40	99	60	55	37	40	4
Percent state land	29	1	40	40	30	35	6
Percent private land	31	0	0	5	31	25	90
Miles of pipeline within 1/4 mile	0	0	0	0	0	0	0
Miles of power lines within 1/4 mile	69.75(+)	0	0	0.5	many	38	31.75
Miles of road within 1/4 mile	60.25	3.0	0	0.25	38	15	4
Number of bridges	3	1	0	0	0	2	0
Number of instream structures	5	0	0	0	2	2	1
Stream flow regulation	1	0	1	1	1	1	1
White water	some	some	none	none	none	good	excellent
General scenery	timber cedar, larch, fir	timber cedar, fir, hemlock	timber larch, fir	timber larch, fir	timber larch, fir	timber, ag	timber, ag

Table 26. Private physical and economic data per reach employed to evaluate the attractiveness and feasibility of reaches of the Priest River for consideration in the wild and scenic rivers system, 1974.

Factor (per reach)	Corridor Total	Reach I	II	III	IV	V	VI
Number of miles	88.1	18.4	3.6	2.1	20.0	31.2	12.8
Number of private ownership	1,296	0	0	23	969	151	148
Acres of private land	11,642	0	0	16	4,177	2,942	4,490
Number of areas of recreational property	2.113	0	0	16	844	685	568
Number of acres of agricultural land	3,086	0	0	0	176	487	2,422
Number of acres of timber land	6,381	0	0	0	3,103	1,767	1,499
Number of acres of city and commercial property	57	0	0	0	54	3.0	0
Number of lots	1,344	0	0	27	1,225	37	46
Number of major subdivisions	46	0	0	1	33	6	6
Number of buildings	1,545	0	0	23	1,341	42	137
Assessed value of buildings ($)	3,912,670	0	0	42,566	3,618,763	29,470	213,131
Assessed value per building ($)	2,532	0	0	1,850	2,999	702	1,556
Assessed value of buildings per acre ($)	366	0	0	2,660	866	10	14
Assessed value of land	2,358,349	0	0	58,500	1,830,607	200,993	258,362
Assessed value per acre of land ($)	203	0	0	3,656	438	68	58
Total assessed value ($)	6,271,019	0	0	101,066	5,449,370	230,463	471,493
Feet of private frontage	254,283	0	0	4,082	78,678	78,718	92,805

Table 27. Density of private physical and economic data employed to evaluate the attractiveness and feasibility of reaches of the Priest River for consideration in the wild and scenic rivers system, 1974.

Factor per mile	Corridor Total	Reach I	II	III	IV	V	VI
Number of miles	88.1	18.4	3.6	2.1	20.0	31.2	12.8
No. miles of road within 1/4 mile of shore	.68	.16	0	.12	1.89	.48	.31
Number of acres	132.1	0	0	7.6	208.9	94.3	350.7
Acres of recreational property	24.0	0	0	7.6	42.2	21.9	44.3
Acres of agricultural land	35.0	0	0	0	8.8	15.6	189.0
Acres of timber land	72.4	0	0	0	155.2	56.6	117.0
Acres of city and commercial property	.65	0	0	0	2.7	.1	0
Number of lots	15.3	0	0	12.86	61.25	1.19	3.59
Number of major subdivisions	.52	0	0	.48	1.65	.19	.47
Number of buildings	17.5	0	0	11.0	67.1	1.4	10.7
Number of assessed value of buildings ($)	44,412	0	0	20,270	180,938	945	16,651
Number of assessed value of buildings per acre ($)	148,513	0	0	36,406	646,102	73	4,835
Number of assessed value of land ($)	26,769	0	0	27,857	91,530	6,442	20,184
Number assessed value per acre for land ($)	50,543	0	0	46,544	210,802	1,677	5,868
Number total assessed value of property ($)	71,181	0	0	48,127	272,469	7,386	36,835
Feet of private frontage	2,866	0	0	1,944	3.934	2,523	7,250

Table 28. Preference rating scheme for general physical data employed to evaluate the attractiveness and feasibility of reaches of the Priest River for consideration in the wild and scenic river system, 1974.

Factor (per reach)	Preference Rating				
	I	II	III	IV	V
Number of miles	under 5	5-15	15-25	25-30	30 or more
Percent federal land	0-20	21-40	41-60	61-80	81-100
Percent state land	0-20	21-40	41-60	61-80	81-100
Percent private land	81-100	61-80	41-60	21-40	0-20
Miles of pipeline	over 50	20-50	5-20	0-.5	0
Miles of power lines within 1/4 mile	over 50	20-50	5-20	0-.5	0
Miles of road within 1/4 mile	18 or more	9-18	3-9	0-3	0
Number of bridges	3 or more	3	2	1	0
Number of instream structures	3 or more	3	2	1	0
Stream flow regulation	3 or more	3	2	1	0
White water	none	very little	some	good	excellent
General scene	poor	below average	average	above average	excellent

Table 29. Preference rating scheme per reach for private physical and economic factors employed in evaluating the attractiveness and feasibility of reaches of the Priest River for consideration in the wild and scenic rivers system, 1974.

Factor (per reach)	I	II	III	IV	V
Number of private ownerships	over 400	101-400	51-100	1-50	0
Acres of private land	over 3000	1001-3000	501-1000	1-500	0
Number of acres of recreational land	over 1000	501-1000	101-500	1-100	0
Number of acres of agricultural land	over 1000	501-1000	101-500	1-100	0
Number of acres of timber land	over 2000	501-2000	101-500	1-100	0
Number of acres of city & commercial	over 10	5-10	2-5	0-2	0
Number of lots	over 100	51-100	10-50	0-10	0
Number of major subdivisions	over 10	5-10	2-5	0-1	0
Number of buildings	over 500	201-500	51-200	1-50	0
Assessed value of buildings ($)	over 500,000	201,000-500,000	50,001-200,000	1-50,000	0
Assessed value per buildings ($)	over 2000	1001-2000	501-1000	1-500	0
Assessed value of buildings per acre ($)	over 1000	501-1000	101-500	1-100	0
Assessed value of land ($)	over 500,000	201,000-500,000	50,001-200,000	1,001-50,000	under 1,000
Assessed value per acre of land ($)	over 500	201-500	51-200	10-50	under 10
Total assessed value ($)	over 2,000,000	500,001-2,000,000	100,001-500,000	50,001-100,000	under 50,000
Feet of private frontage	over 100,000	50,001-100,000	10,001-50,000	1,001-10,000	under 1,000

Table 30. Preference rating schemd for desnity of physical and economic factors employed to evaluate the attractiveness and feasibility of reaches of the Priest River for consideration in the wild and scenic rivers system, 1974.

Factor (density)	Preference Rating				
	I	II	III	IV	V
Number of miles	over 30	26-30	16-25	1-15	0
Miles of road within 1/4 mile of shore	1.0	.51-1.0	.21-.50	.01-.20	0
Number of acres of private land	over 200	101-200	21-100	1-20	0
Acres of recreational land	over 30	21-30	11-20	1-10	0
Acres of agricultural land	over 50	21-50	11-20	1-10	0
Acres of timber land	over 150	101-150	51-100	1-50	0
Acres of city and commercial land	over 5	2-5	1-2	0-1	0
Number of lots	over 30	21-30	11-20	1-10	0
Number of major subdivisions	Over .5	.21-.50	.11-.20	.001-.10	0
Number of buildings	over 20	11-20	3-10	1-2	0
Assessed value of buildings ($)	over 50,000	5001-50,000	501-5000	1-500	0
Assessed value of buildings per acre ($)	over 100,000	50,001-100,000	5001-50,000	1-50,000	0
Assessed value of land ($)	over 50,000	20,001-50,000	10,001-20,000	5000-10,000	under 5000
Assessed value per acre of land ($)	over 100,000	50,001-100,000	5001-50,000	1-5000	0
Total assessed value of property ($)	over 200,000	100,001-200,000	10,001-100,000	5000-10,000	under 5000
Feet of private frontage	over 5000	2501-5000	1501-2500	501-1500	0-500

(Figure 9 a and b). Consequently, reaches I and II will have zero values in this group. Analyzing the characteristics of privately owned land reveals the following attributes concerning the corridor. There are about 1,300 private ownerships with about 75 percent of these in reach IV (Figure 9a). However, due to the larger parcel sizes in reach VI, more privately owned acreage is in reach VI than in reach IV with the remainder in reaches V and VI (Figure 9b). Agricultural land is concentrated in reach VI (Figure 9f), and half of the private timber land is in reach IV with the remainder in reaches V and VI (Figure 9g). These two uses generally have larger acreage per ownership than recreational property. Reach VI has the greatest acreage of recreational property (Figure 9e). Over 90 percent of the platted lots are located along Priest Lake and the majority of the subdivisions are also in reach IV (Figure 9c and d).

The amount and value of private property must be considered when evaluating the feasibility of a river for classification. If less than 50 percent of the river corridor is not federally owned, then the government has a right to condemn and purchase additional property. If more than 50 percent is already federally owned, the government may purchase scenic easements or buy land from owners wishing to sell. Fair market value is to be paid for any property rights purchased by the government. Land and buildings will be considered as separate components of property value in this sector and assessed values will be used as a gauge of market value. Most of the 1,545 buildings are located near the edge of Priest Lake with reach VI somewhat developed (Figure 9i). Average assessed value per building is greatest along Priest Lake followed by reaches III, VI and V (Figure 9k). Average assessed value of buildings per acre is greatest in reach III (Figure 9l) Assessed value of land is greatest in reach IV (Figure 9m), but assessed value per acre is greatest in reach III (Table 26 and Figure 9n). Total assessed value or private property is over twice as great in reach IV as inthe next highest reach of the river (Table 26 and Figure 9o). Another measure of private ownership pertinent to recreational property is the feet of privately owned water frontage. Private frontage tends to decrease as one goes upstream from the mouth (Figure 9p).

In addition to the number of features located within a reach, the density of features--group three--may be of prime importance in a classification scheme. Therefore, many features are reconsidered in terms of averages per mile of reach. Reach VI has an average of 350 acres of private land per mile of reach and reach IV has 209 acres per mile of reach (Figure 10b). Reach IV has the greatest number of lots and major subdivisions per mile of reach (Figure 10c and 10d). The density of private owned timber land is greatest along Priest Lake (Figure 10g) while agricultural land is most concentrated in reach IV (Figure 10f). Despite reach IV having the most acres of recreational property, reach VI has, on the average, the most acres of recreational land per mile of reach (Figure 10e). The density of buildings is greatest along Priest Lake and the assessed value of buildings per mile of reach is also greatest in this reach (Figure 10 i, j, and k). Assessed value of land per mile of reach and assessed value per acre of private land per mile of reach are greatest in reach IV (Figure 10 l and 10m). Total assessed value of private property per mile of reach is by far the greatest along Priest Lake (Figure 10n). Feet of private frontage per mile of reach is again of interest and is greatest in reach VI (Figure 10o). One public feature included in the density measures is the miles of

road within one-quarter mile of the river per mile of reach (Figure 10a). Most of the roads are concentrated around Priest Lake. Since there are nearly two miles of road per mile of "river" in this reach, there is an equivalent of a road nearly surrounding the Lake within the one-quarter mile corridor.

If the graphs from within any of the three above groups are overlain, the same trends appear (Figure 4). Reaches I and II tend to be the most preferable for Wild and scenic River classification. Reach IV is obviously the least desireable. The other reaches lay somewhere in-between and have more variation among the characteristics. Although Reach III does not show highly desireable characteristics, nearly all of the unattractive features are located at the lower end of the thoroughfare where it joins Priest Lake.

The combined average ratings for the three groups of profiles will be used as guidelines in determining the highest potential classification in the Wild and Scenic Rivers System for reaches of the Priest River. However, a single factor receiving a rating of one will generally result in a lower classification than the general guideline would suggest, unless it is not a crucial factor in classification. To be classified as wild, a reach should have an average rating of about 4.5 or higher. The range in average rating for a scenic classification is from about 3.0 to 4.5. The average rating for a recreational classification could be as low as 2.0. Any reach with an average rating below 2.0 should not be incorporated into the Wild and Scenic Rivers System.

Based on the physical, biological and economic characteristics, the reaches of the Priest River have the following potential for classification in the Wild and Scenic Rivers System. However, one alteration should be made prior to stating potential classifications. The lower boundary of reach III should be moved upstream about 1/2 mile (or 1/4 mile above the developed area). Then reaches I, II and III should be combined into one segment. This segment of the Priest River then has the potential for being classified as wild. Without the above alteration, reaches I and II could be classified as wild, but reach III could only be classified as scenic. The only major questionable features to a wild classification for this upper segment are the road which follows the river for a relatively short stretch and the bridge which crosses the river. Since this is not a heavily used road, it is felt that it could be an exception allowed by the guidelines. Figure 11a indicates two other low ratings, but one is length of reach which has been improved by combining reaches I, II and III while the other low rating concerns white water quality and this is not crucial to classification, per se.

Reach IV is Priest Lake. This is a large body of water and is not a free flowing stream. The highest potential classification would be recreational and even this is highly questionable. Figure 11 indicates that many features of this reach have quite low desireability ratings, the average rating is only about 1.6. This suggests that this reach should probably not be placed in the system at all.

Reach V is more favorable than reach IV but is considerably less favorable than the upper segment of the river (reaches I-III). None of the characteristics is rated in the lowest category, but the average rating of all characteristics is only about 3.1. Thus, reach V is a borderline case. It could possibly be classified scenic.

Reach VI, despite its fine white water, is slightly less desireable than reach V, basically due to the farming and development along the river. The average rating for reach VI is near 2.5. Consequently, reach VI has the potential for only a recreational classification. The question to consider next is the community attitude toward classification in general, and the sociological aspects involved.

Figure 8. Profile of general characteristics of reaches of the Priest River used to evaluate the attractiveness and feasibility of inclusion in the wild and scenic rivers system, 1974.

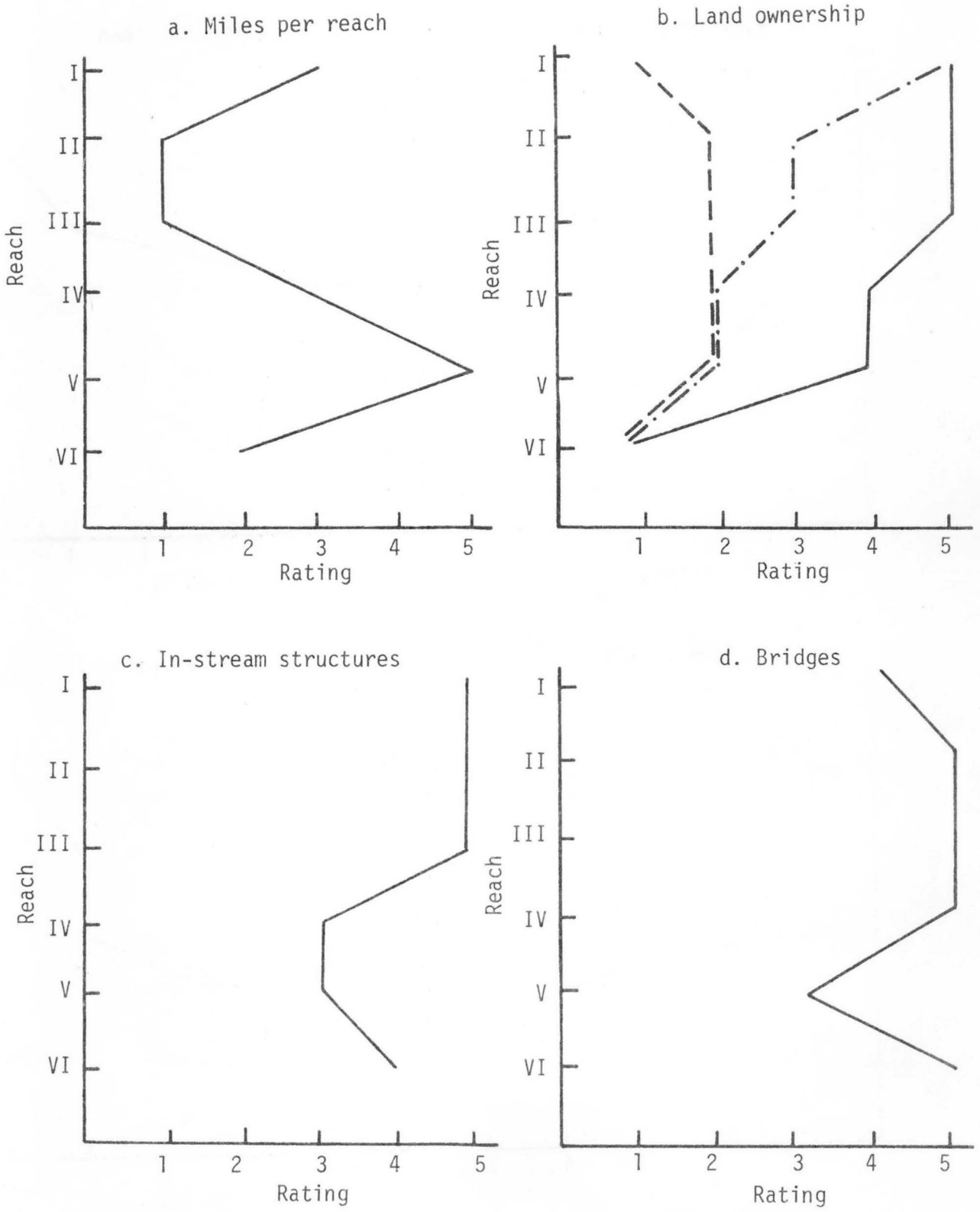


Figure 8 continued

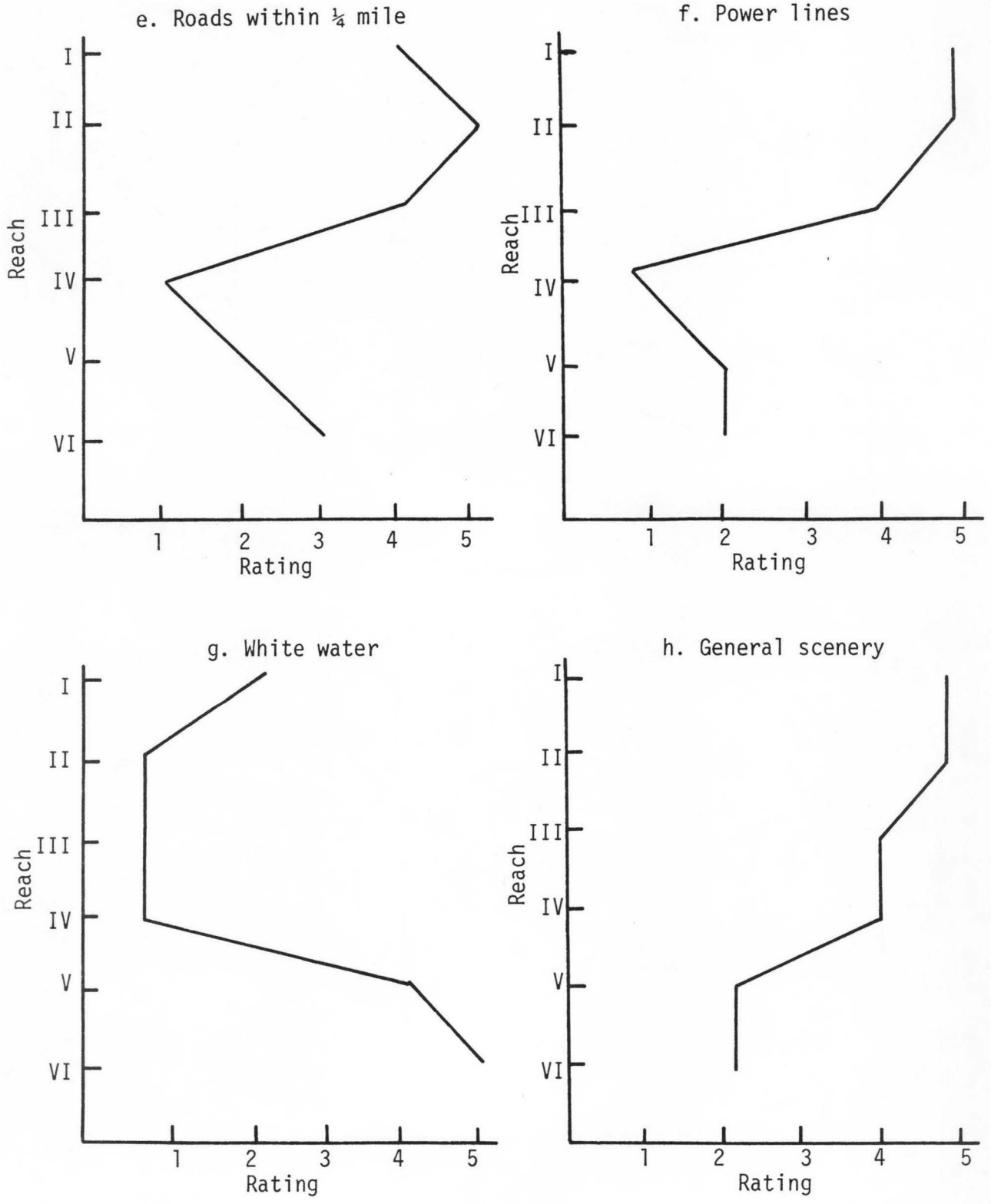


Figure 9. Profiles of physical and economic factors used to evaluate the attractiveness and feasibility of inclusion of the Priest River in the wild and scenic rivers system, 1974.

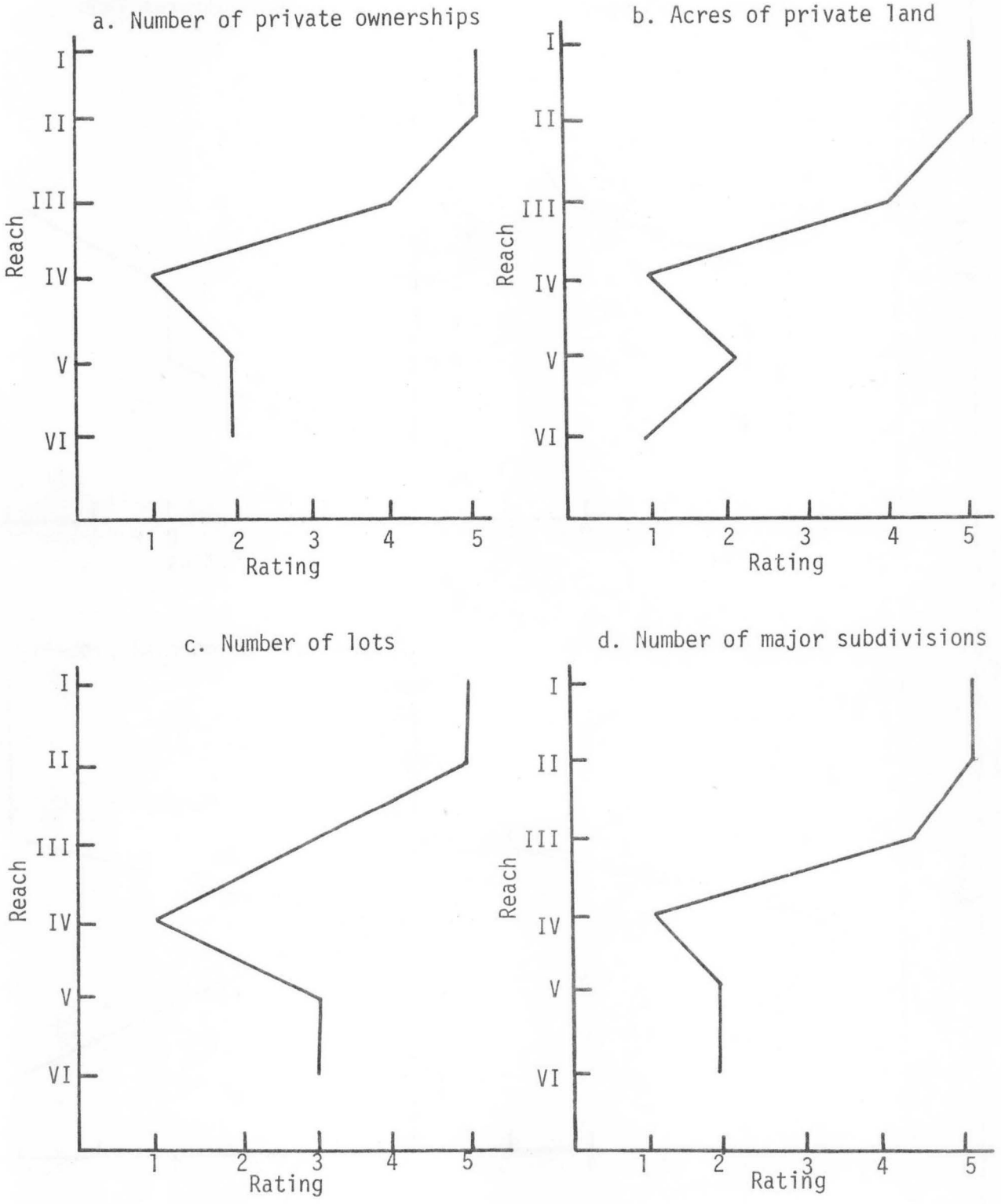


Figure 9 continued

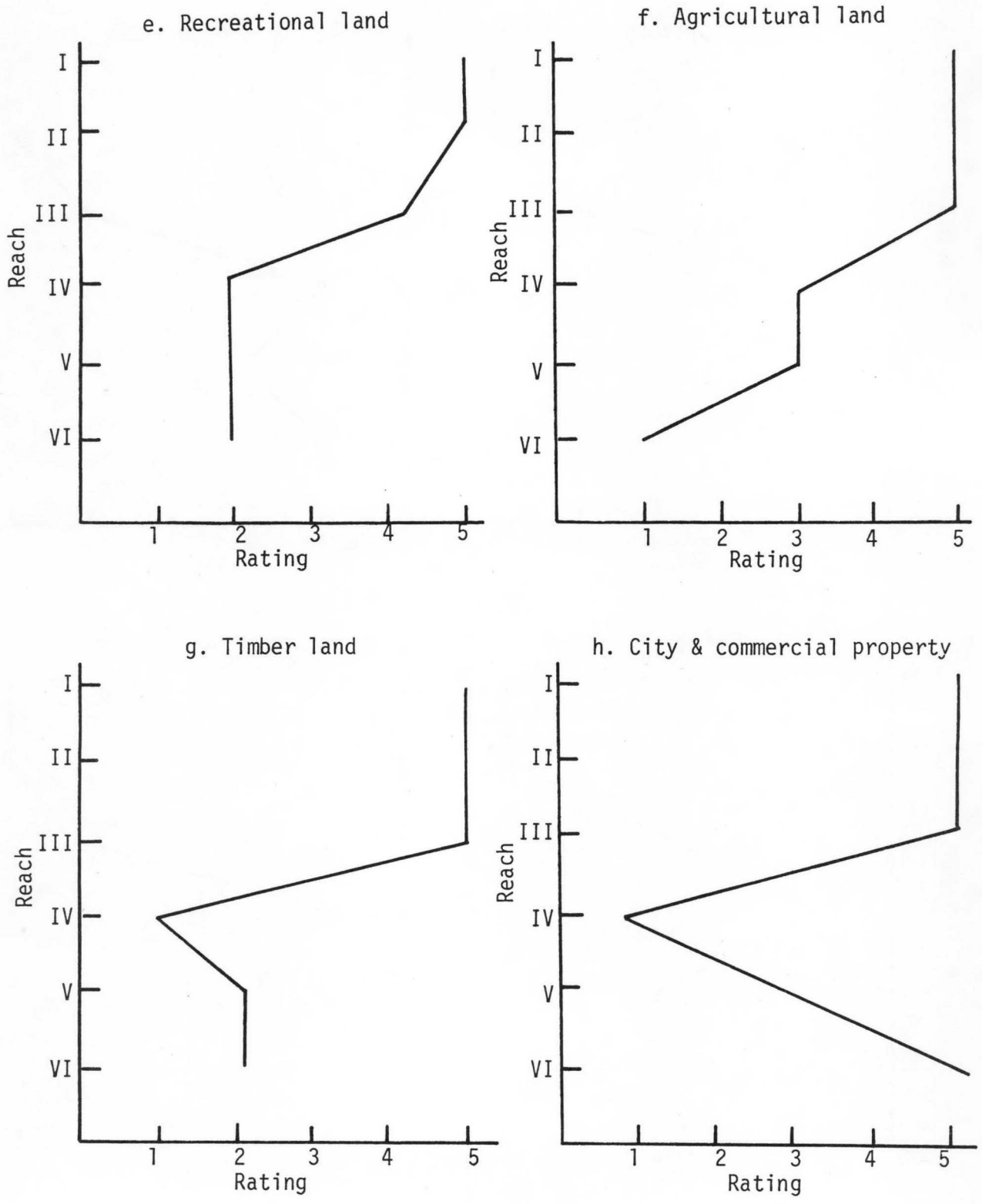
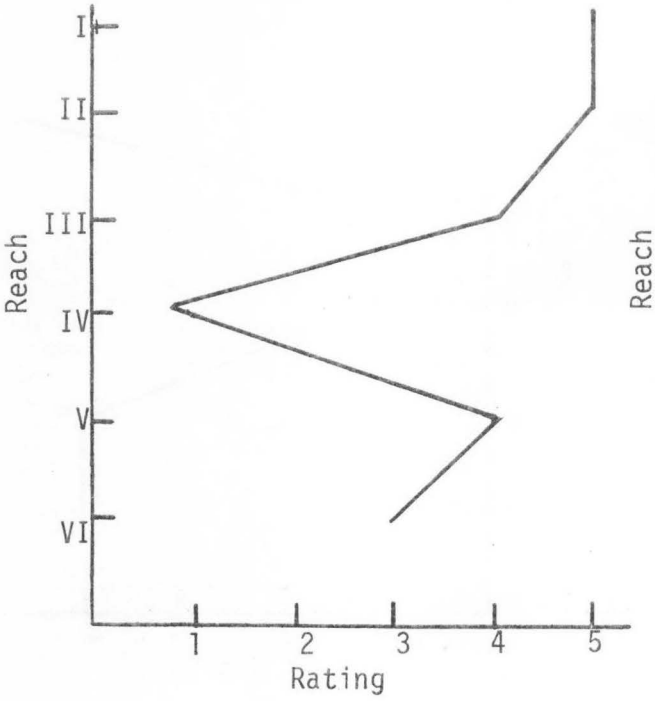
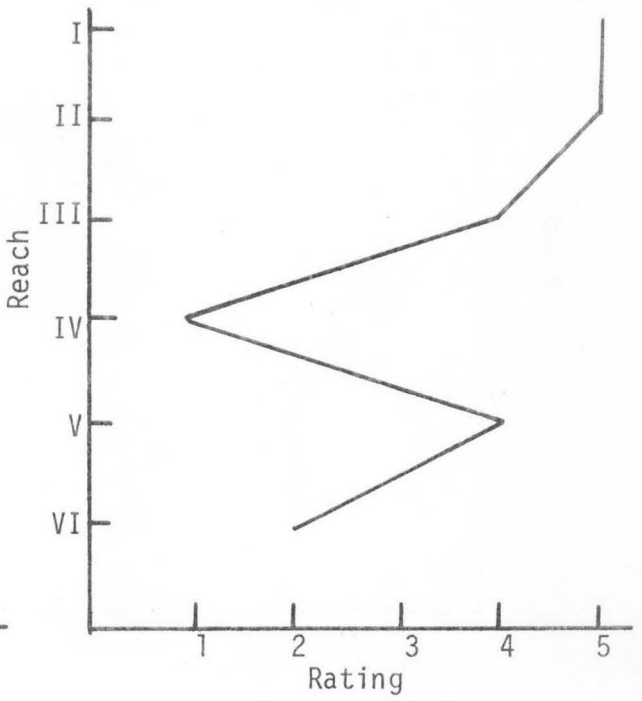


Figure 9 continued

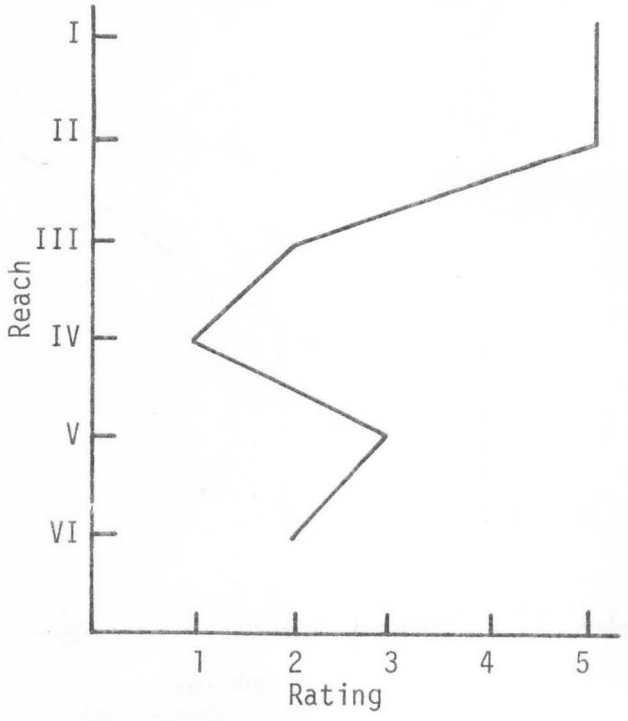
i. Number of buildings



j. Assessed Value of Buildings



k. Assessed value per building



l. Assessed value of buildings per acre

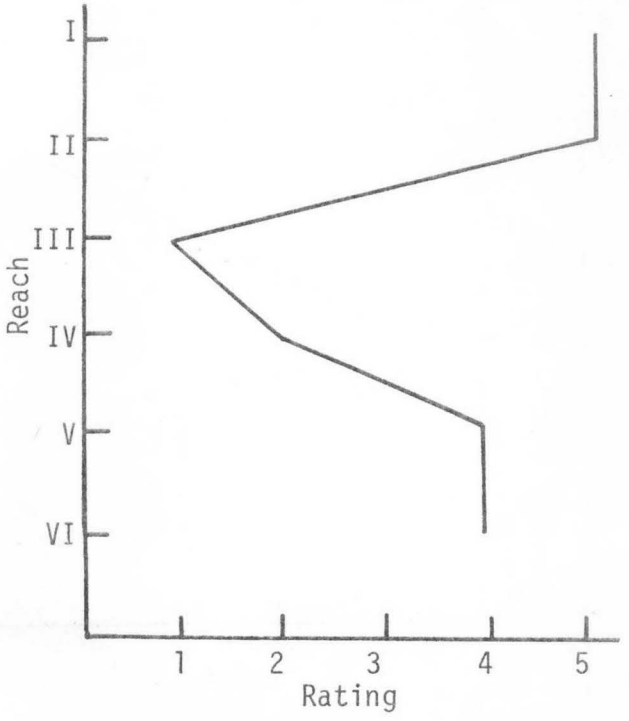
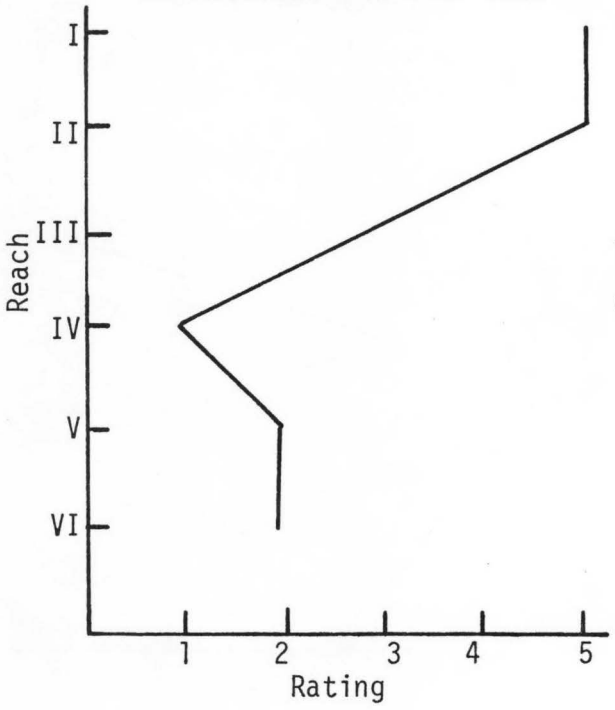
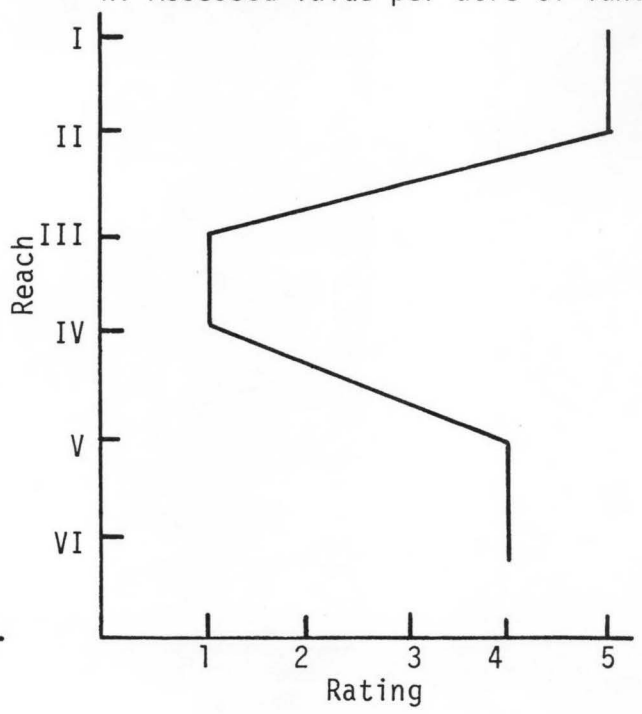


Figure 9 continued

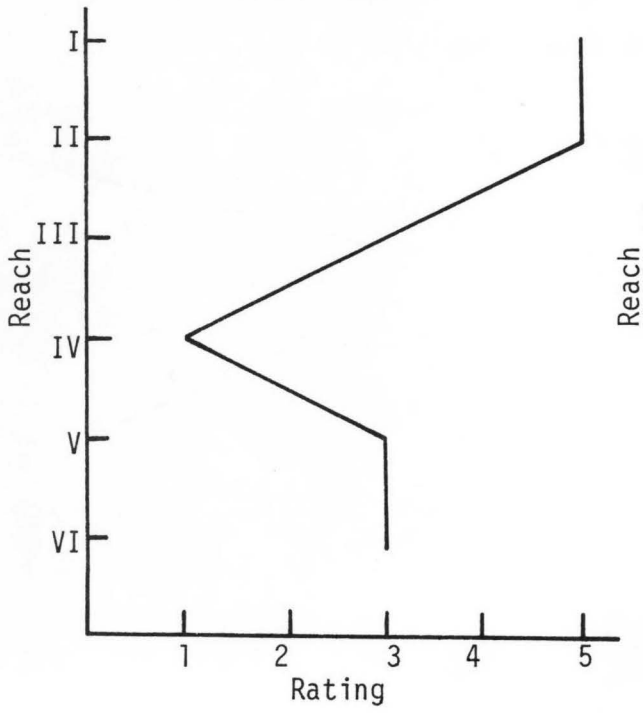
m. Assessed value of land



n. Assessed value per acre of land



o. Total assessed value



p. Feet of private frontage

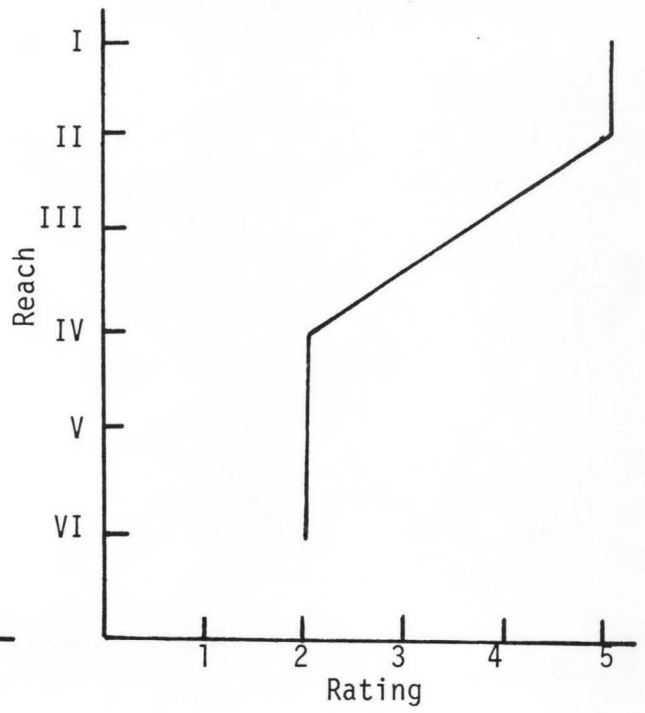


Figure 10. Profiles of density of physical and economic factors used to evaluate the attractiveness and feasibility of inclusion of reaches of the Priest River in the wild and scenic rivers system, 1974.

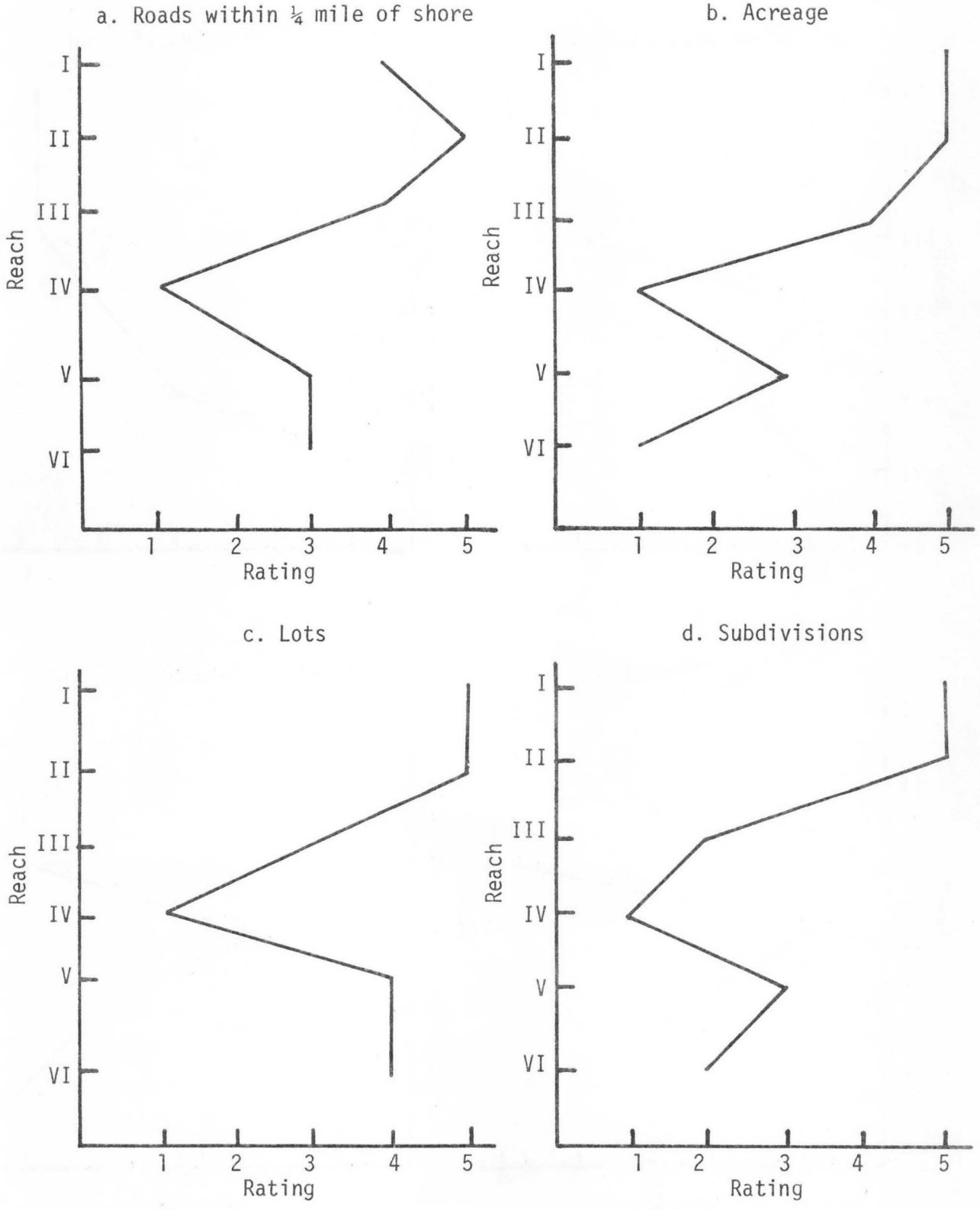


Figure 10 continued

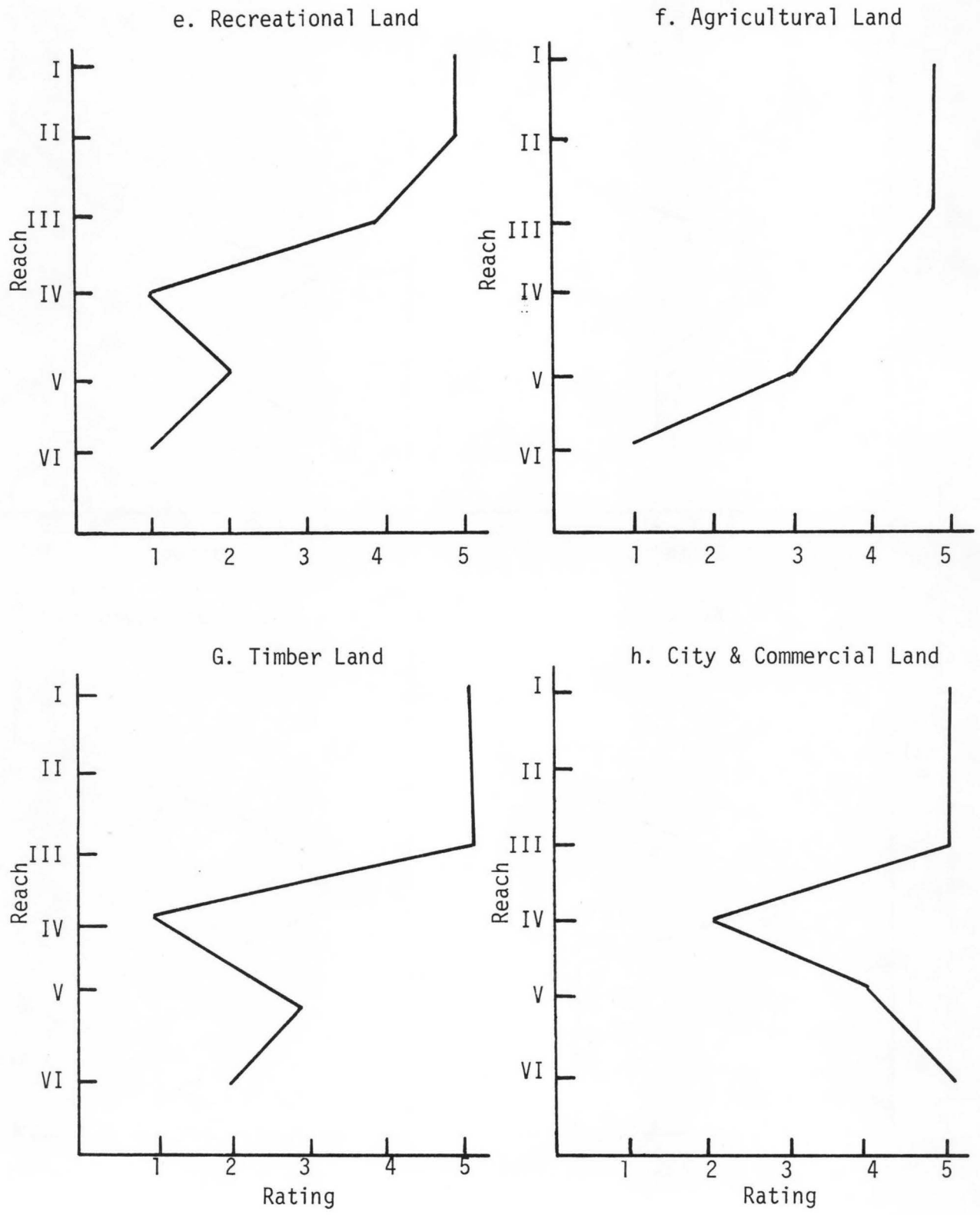
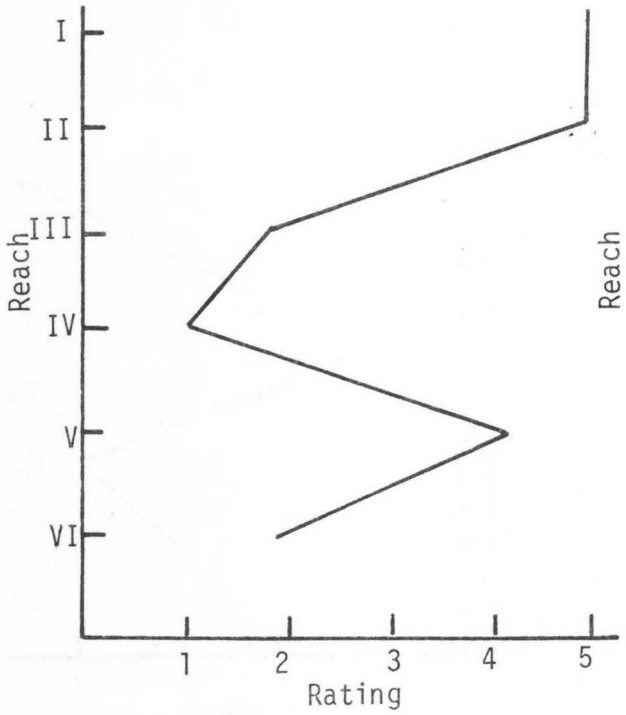
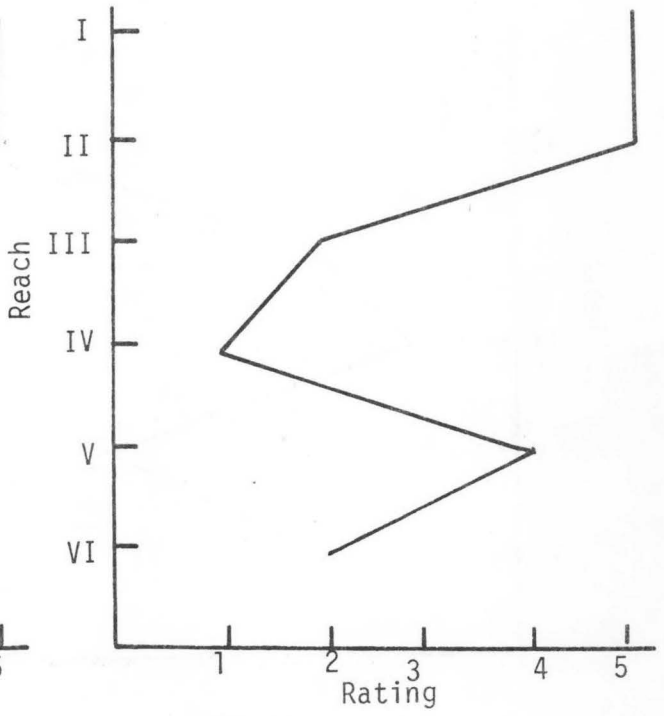


Figure 10 continued

i. Buildings



j. Assessed Value of Buildings



k. Assessed Value of Buildings per Acre

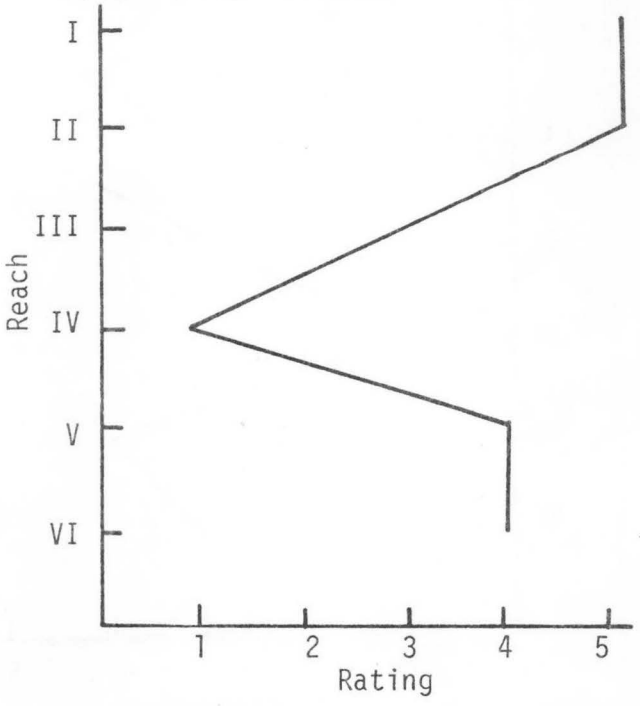
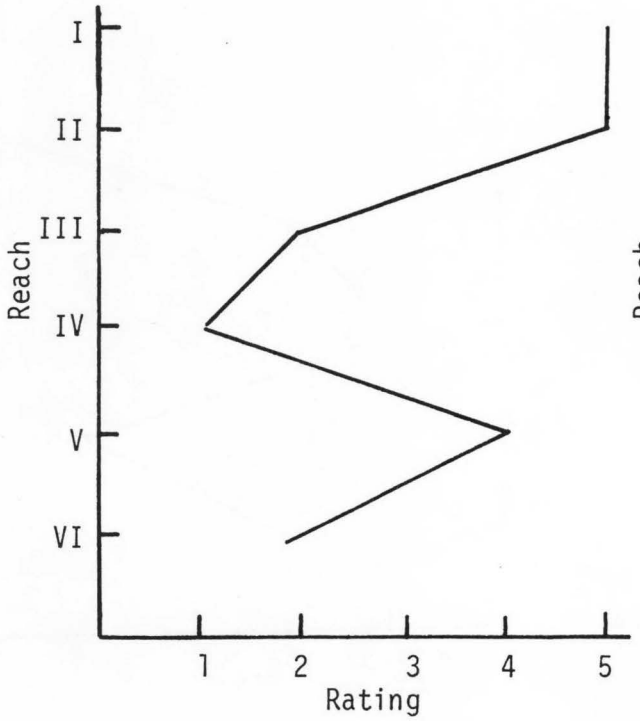
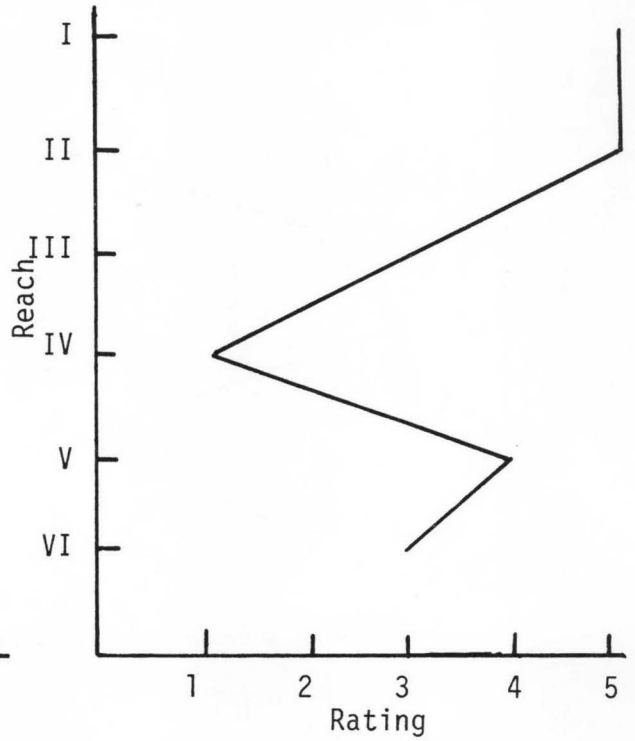


Figure 10 continued

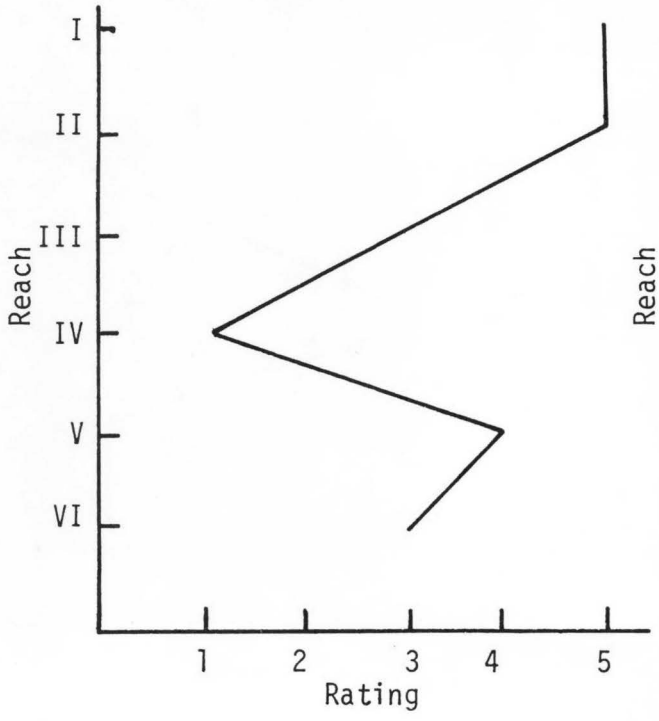
l. Assessed Value of Land



m. Assessed Value per Acre for Land



n. Total Assessed Value



o. Feet of Private Frontage

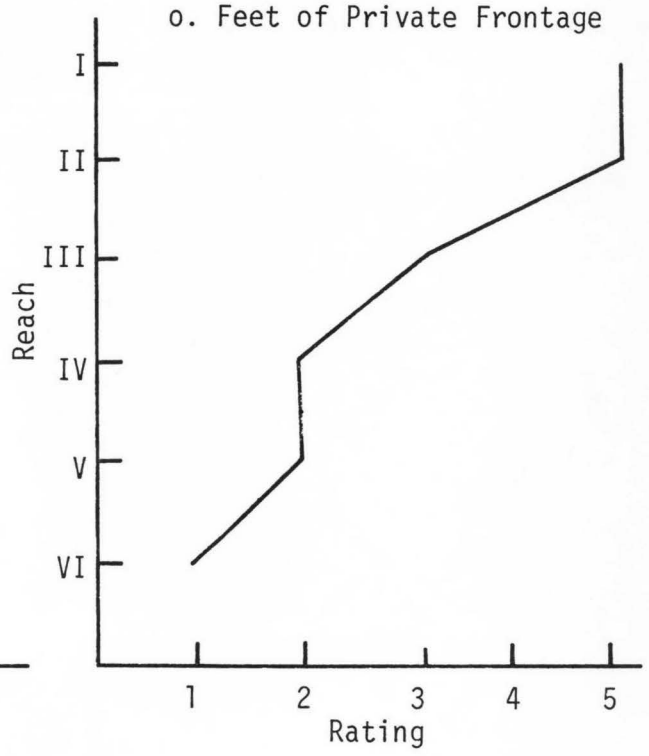
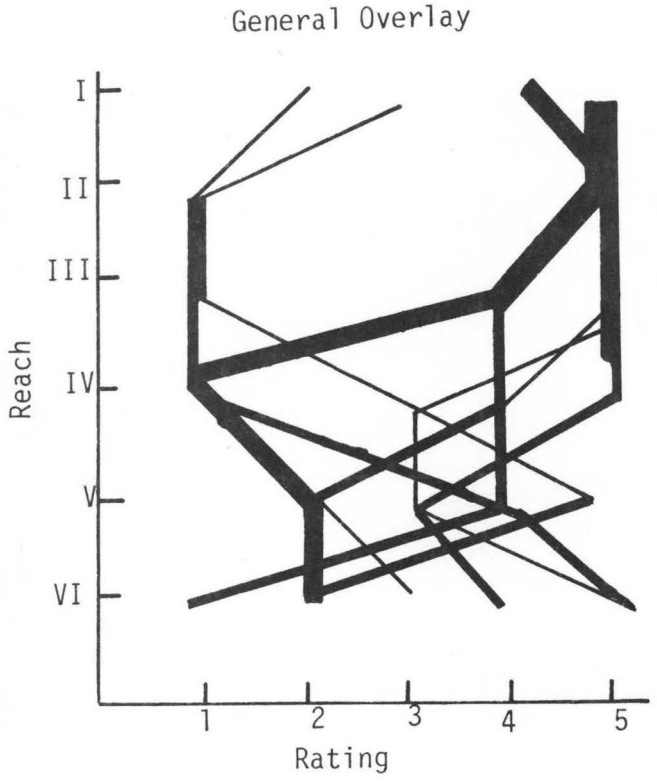
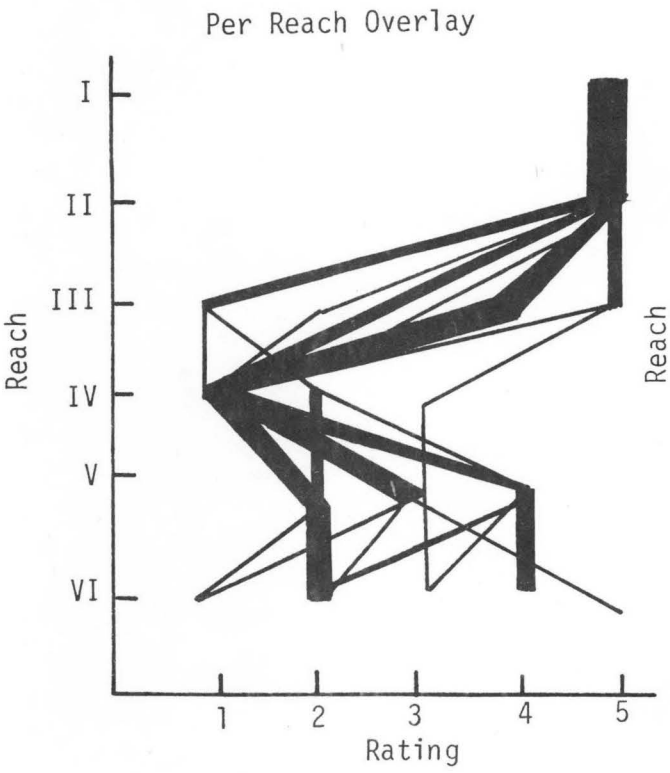
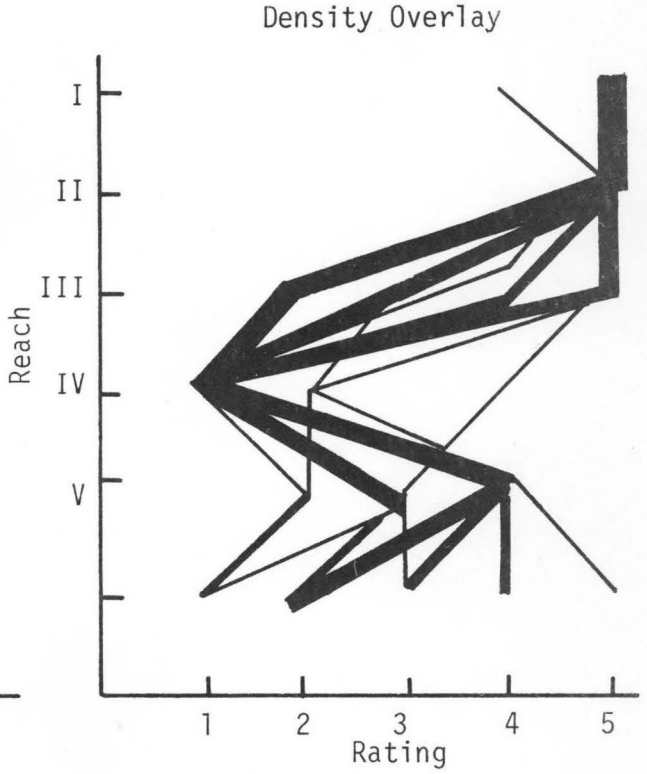


Figure 11. Overlays of factor profiles used to evaluate the Priest River for inclusion in the wild and scenic rivers system, 1974.







APPENDIX

University of Idaho

North Idaho Water and Land Use Survey

This survey is part of a research project funded by the
IDAHO WATER RESOURCES RESEARCH INSTITUTE

Before we begin the evaluation would you please take time to fill out the following questions about yourself. This information is necessary for proper analysis of the data. The information is confidential and will be presented only in summary form. You must complete this page before you can participate in the slide show evaluation or the float trip evaluation.

1. Sex: Male _____ Female _____

2. Age: _____

3. Date: _____

4. Time: _____

5. What is your present marital status? _____ single _____married
   _____ separated _____ divorced _____ widowed _____ other (specify)

6. In what size community did you spend most of your life up to age 18?

   _____ rural farm
   _____ rural non-farm
   _____ 100 - 2,499
   _____ 2,500 - 9,999
   _____ 10,000 - 49,999
   _____ 50,000 - 99,999
   _____ 100,000 or more

7. In what size community do you presently live? _____

8. What is your present post office and state of residence?

   _____
   Post office State Zip code

9. Please indicate the highest level of education that you and your spouse have completed.

	Yourself	Spouse (if married)
Less than high school (1-8)	_____	_____
Some high school (9-11)	_____	_____
High school graduate (12)	_____	_____
Some college or other training	_____	_____
College graduate	_____	_____
Graduate study	_____	_____

10. Please indicate your occupation and in one sentence tell what you do.

_____

11. Please indicate your spouses occupation and in one sentence tell what she/he does.

_____

12. What was your total family income before taxes last year (1973)?

_____ less than $3,999	_____ $10,000 - $14,999
_____ $4,000 - $5,999	_____ $15,000 - $24,999
_____ $6,000 - $7,999	_____ $25,000 - $49,999
_____ $8,000 - $9,999	_____ $50,000 or more

13. Please indicate which aspects of this project you will have participated in upon completion of this part.

_____ taken the canoe trip down the Priest River only.

_____ seen the slide show of the Priest River only.

_____ have taken the trip down the river and have seen the slide show.

14. How many times per year do you or your family visit the Priest Lake area for recreational purposes? _____

15. Weather Information:

Cloud cover: _____

Wind: _____

Precipitation: _____

General Comments:

INSTRUCTIONS

On this questionnaire you will find different concepts to be judged and beneath each a series of scales. You are to rate each segment of the environment on one of these scales.

If you feel that the concept at the top of the category is very closely related to one end of the scale, you should place your check-mark as follows:

fair X _____ _____ _____ _____ _____ _____ unfair

fair _____ _____ _____ OR _____ _____ X unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your checkmark as follows:

strong _____ X _____ _____ _____ _____ _____ weak

strong _____ _____ _____ OR _____ X _____ weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check follows:

active _____ _____ X _____ _____ _____ _____ passive

active _____ _____ _____ OR X _____ _____ passive

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe _____ _____ _____ X _____ _____ _____ dangerous

IMPORTANT:

(1) Place your check-mark in the middle of the spaces, not on the boundaries:

THIS NOT THIS

_____ _____ X _____ _____ X _____ _____

(2) Be sure you check every scale for every concept - do not omit any.

(3) Never put more than one check-mark on a single scale. Make each item a separate and independent judgment. It is your immediate "feelings" about the items that we want. There are no "right" or "wrong" answers.

BE SURE TO INDICATE SLIDE NUMBER OR STATION NUMBER.

Slide Number _____ (Only if viewing from slides)

Station Number _____ Direction of Evaluation N S E W

TOTAL LANDSCAPE IN GENERAL

pleasant	_____	_____	_____	_____	_____	_____	_____	unpleasant
chaotic	_____	_____	_____	_____	_____	_____	_____	ordered
calming	_____	_____	_____	_____	_____	_____	_____	exciting
imperfect	_____	_____	_____	_____	_____	_____	_____	perfect
attracting	_____	_____	_____	_____	_____	_____	_____	repelling

LANDFORMS

interesting	_____	_____	_____	_____	_____	_____	_____	boring
worthless	_____	_____	_____	_____	_____	_____	_____	valuable
attractive	_____	_____	_____	_____	_____	_____	_____	unattractive

VEGETATION

usual	_____	_____	_____	_____	_____	_____	_____	unusual
monotonous	_____	_____	_____	_____	_____	_____	_____	varied
satisfying	_____	_____	_____	_____	_____	_____	_____	annoying

WATER

exhilarating	_____	_____	_____	_____	_____	_____	_____	depressing
impure	_____	_____	_____	_____	_____	_____	_____	pure
appealing	_____	_____	_____	_____	_____	_____	_____	unappealing

SKY

soothing	_____	_____	_____	_____	_____	_____	_____	aggravating
disagreeable	_____	_____	_____	_____	_____	_____	_____	agreeable
colorful	_____	_____	_____	_____	_____	_____	_____	colorless

RIVER BOTTOM

positive _____ _____ _____ _____ _____ _____ _____ negative

passive _____ _____ _____ _____ _____ _____ _____ active

simple _____ _____ _____ _____ _____ _____ _____ complex

Discuss any aspect of the environment you are viewing that is particularly pleasing or desirable to you.

Discuss any aspect of the environment you are viewing that is particularly unpleasant or undesirable to you.

General comments: