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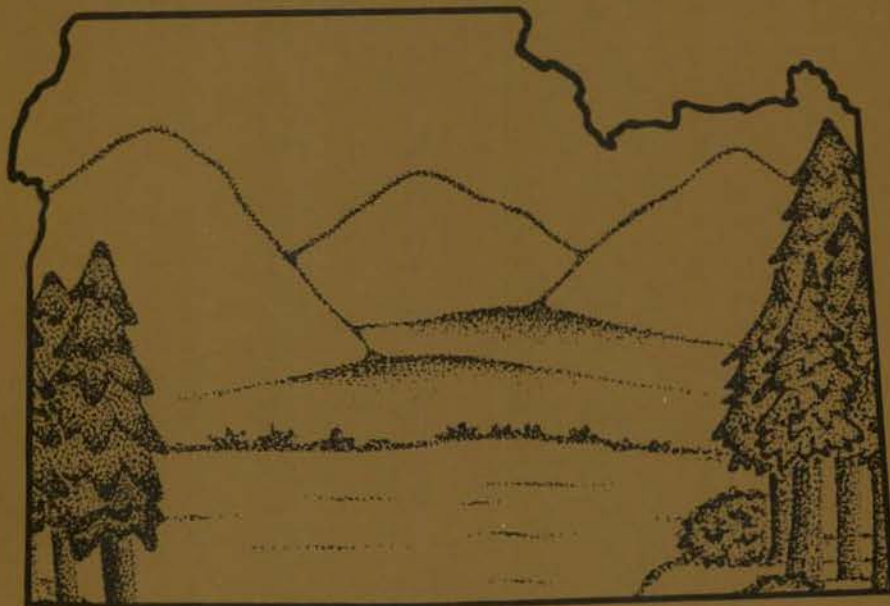


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# Priorities for Recreation Among Natural Resource Uses in Idaho



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# Priorities for Recreation Among Natural Resource Uses in Idaho

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## Introduction

This research report focuses on the preferences of Idaho residents for recreational development among possible uses of funds for development of natural and water resources. Preferences will be related to social background characteristics and to relevant orientations toward leisure and toward the preservation of resources.

Leisure and recreation have become increasingly significant aspects of life in our society as leisure time has increased. The meaning of and growth of leisure and recreation are discussed in greater detail in a companion report (Carlson and Sargent 1977). Planning problems associated with the increase of leisure time have led researchers to focus on the factors affecting an individual's attitudes toward various aspects of recreation. Increasingly in the development and management of recreational facilities, recognition is given to the need for public input into the decision-making process. Sometimes that need for public input must be met quickly and, unless previously developed research is available to assist the process, the requirement may be nearly impossible to meet in a satisfactory way.

Arnstein (paraphrased from Van der Smissen 1975:314-315) has identified 8 levels in the evolution of citizen participation in the decision making process:

1. **Manipulation** — citizens rubber stamp the desires of government officials who educate, persuade and advise the citizens, not the reverse.
2. **Therapy** — government assumes something is wrong with citizens which can be relieved by "blowing off steam."
3. **Information** — citizens become aware of rights, responsibilities and options (one-way communication).

4. **Consultation** — citizen's opinions and ideas are solicited through public hearings, surveys, etc. (two-way communication).
5. **Placation** — citizens begin to have some degree of influence. Government retains the right to judge the legitimacy of the advice.
6. **Partnership** — citizens and authorities agree to share planning and decision making via joint policy boards, planning committees. Decisions are not subject to unilateral change.
7. **Delegated power** — citizens achieve dominant decision making authority or have power over authorities (powerholders).
8. **Citizen control** — residents of an area are in charge of policy and management decisions.

While the latter stages of this evolution will not soon be achieved in recreation management (and may not even be desirable), there is and will continue to be a push to reach the middle stages of consultation, placation and partnership.

Public input has increasingly been sought through the device of the formal open hearing. Public hearings, however, have often produced less than satisfactory results. The first problem is to attain sufficient attention to assure a reasonable turnout for the hearing in the face of competing uses of an individual's time. Thus, the problem arises of the representativeness of those present for the hearing. Only the most extreme views may be heard. To meld the resulting disjointed positions into a workable policy may be an impossible task. Schramm and Burn (1970) comment that formal public hearings often take place late in the planning program after most of the actual plan formulation work has been completed.

Research, which can be done under less time pressure and which can reach a representative sample of all residents in the area concerned, may contribute to solving some of the problems of public input in decision making.

Many studies of leisure and recreation have been reported by other authors but often with shortcomings and omissions. Some deal only with a sample of recreation users, thus ignoring the attitudes and behavior of non-users. Other studies fail to separate in-state users from out-of-state recreationists. Data are available to us from a randomly selected, representative sample of the population of Idaho. Thus, we have input from users and non-users alike but only from in-state residents.

Other studies have also frequently failed to insist that people make choices, allowing them to respond in an ambivalent fashion to the use of natural resources. The device that we have used to ascertain the preference of residents in recreation matters is priority rankings of several recreation-related resources among competing natural resource developments which would potentially use public funds. Thus, our respondents must choose in much the same manner that management decisions must be reached. Two mutually exclusive users cannot be given the identical rank by any one individual. Respondents must decide how much emphasis should be placed on recreation relative to other societal goals for natural resource use.

“Knowledge of how intensely people support or oppose a particular issue is of little help in settling societal goals unless one also has information about other concerns competing for attention. Resources — time, energy, and organization capabilities and money — are limited. Increased effort on one problem usually necessitates less emphasis on others. To provide information essential for establishing priorities, it is necessary to ascertain

the relative value of activities that comprise a set within which supporting resources may be interchanged” (Dillman 1974:206).

Dillman points out that values are more general than attitudes since values may encompass several objects or concerns. Values tend to be more enduring and therefore more useful in a potential time series. Use of the more general value allows for an assessment of relative importance among societal goals competing for the same scarce resources. The concepts and procedures used in this study — priority rankings and orientations toward leisure and toward the preservation of natural resources — fall more into the category of values than attitudes on specific projects.

Information from this research should be useful to recreation resource managers and others involved in the decision making process, and should contribute to the theory of leisure and recreation as well. Specific objectives of this report are:

1. To determine the priority given by Idaho residents to certain recreational uses among other natural resource and water resource uses.
2. To determine the social background factors which may be related to the ranking of recreational use preferences.
3. To assess orientations toward leisure in general and relate those orientations to the ranking of recreational uses.
4. To assess orientations toward the preservation or use of natural resources and relate those orientations to the ranking of recreational uses.
5. To determine the trade-offs and choices among resource uses which people would make if they were in direct charge of the decision making process.

## Methodology

For the purposes of this study, leisure refers to a general orientation toward work and non-work; recreation refers to more specific activities associated primarily with outdoor recreation of the types available in Idaho.

Data for this project were abstracted from a larger questionnaire which included items covering attitudes toward many areas of natural resource and land use, several of them referring directly to leisure and recreation (Carlson 1974). The questionnaire was administered by interviewers to a random cluster sample of Idaho residents and produced 848 usable cases (91% return rate). Sample characteristics generally corresponded with census characteristics of the state (1970 Census).<sup>1</sup>

Two scales developed in earlier studies were also used in this study — orientation scale and the preservation scale. The leisure-orientation scale, originated by Burdge (1961), is defined as a group of attitudes which may be interpreted as the disposition of an individual or groups of individuals

toward leisure vs. work. Burdge began with 103 items and after testing reduced them to an 11-item scale. Yoesting and Burkhead (1971) further analyzed and tested this scale with a series of statistical techniques and emerged with a 5-item scale.<sup>2</sup>

The preservation scale used here was first developed in Carlson (1974). Regression and factor analysis techniques were used to isolate from numerous questions about natural resource use 5 items which appear to have a common

<sup>1</sup>For a more detailed discussion of this questionnaire, see Carlson and Sargent (1977).

<sup>2</sup>Items constituting the leisure-orientation scale were: (1) I generally feel guilty when I enjoy leisure for more than a short time, (2) leisure serves a useful purpose in life, (3) the primary satisfaction I get out of life is working, (4) I feel guilty when I am recreating because I am not working and (5) most people spend too much time enjoying themselves today.

underlying continuum ranging from strong to weak orientation toward resource preservation vs. resource use.<sup>3</sup>

This analysis uses several sets of priority rankings that were included in the questionnaire. The first set deals with general resource items, the second with water resource items. The specific instructions in the questionnaire related to the general resource items were:

*...we would like to focus on the area of publically owned natural resources in Idaho. Our government manages natural resources for a variety of uses. Some of these uses are listed below. Please look at each type of use carefully and decide how important it is to the welfare of the people of Idaho.*

*First, please rank the four uses you believe should receive the highest priority in terms of the welfare of the people of Idaho (1 for highest priority, 2 for the next highest priority, continuing until you have ranked four items).*

*Second, please rank the four uses you believe should receive the lowest priority...*

These instructions were followed by 13 uses of natural resources:

- Develop campgrounds for outdoor camping.
- Emphasize timber production.
- Control pollution of natural resources (water, air, land).
- Develop forests for more recreational use.
- Explore for and mine valuable minerals.
- Maintain rivers and streams in their free-flowing condition for recreation use.
- Increase agricultural production by reclaiming land.
- Maintain wildlife threatened by extinction.
- Establish more wilderness area.
- Encourage farmers to adopt better conservation practices.
- Develop more hydroelectric power by constructing dams as the need arises.
- Increase the use of forest and range land for grazing.
- Emphasize geothermal energy development.

Instructions for the water resource items were:

*One of the areas of natural resources you considered above was that of water resources.*

*Considering what you know about the present uses of Idaho's water resources, how important do you believe each of the following uses of water resources is in terms of the welfare of the people in Idaho, between now and the year 2000...*

The same directions were given for ranking the items, followed by 9 water resource uses:

- Flood control.
- Hydroelectric power generation.
- To dispose of sewage and industrial wastes.
- For industrial water supply.
- Maintain streams and rivers in their free-flowing conditions for recreation use.
- To develop more lakes and reservoirs for recreational use.
- For agricultural irrigation.
- For commercial navigation.
- For domestic and municipal water supply.

Two items appear in both sets — *hydroelectric power* and *free-flowing rivers*. There were some minor differences in the priority rankings according to the set in which the item appeared and those differences will be noted. From these 22 natural resource and water resource items, we have chosen 7 that in a sense relate to recreation, i.e., the average resident is more likely to make use of the resource during his leisure time rather than during his work time. Those 7 items are:

- Develop campgrounds for outdoor camping.
- Develop forests for more recreational use.
- Maintain wildlife threatened by extinction.
- Establish more wilderness area.
- Maintain rivers and streams in their free-flowing condition for recreation use (as a natural resource use).
- Maintain rivers and streams in their free-flowing condition for recreation use (as a water resource use).
- To develop more lakes and reservoirs for recreational use.

Ranking items either high or low left some unranked. We took this into account by collapsing the ranks into categories with (1) high priority, (2) not ranked and (3) low priority. Thus, while some information was lost, we were able to analyze the data with the SPSS computer program using the crosstabulation and regression procedures.

## Results and Discussion

### Priority Rankings

Of the 7 recreation-related natural or water resource uses selected for analysis, none received a high priority rating

<sup>3</sup>Items constituting the preservation scale were: (1) We have enough state parks in Idaho, (2) we have enough legally designated wild and scenic rivers in Idaho, (3) enough land has been set aside for wildlife protection and recreation use, (4) we have enough area legally designated as wilderness in Idaho and (5) we have enough national parks and national recreation areas.

from as many as half the respondents (Table 1). Four uses — *develop campgrounds*, *recreational use of forests*, *preserve wilderness* and *lakes for recreation* — received less than 20% high priority marks, with *lakes for recreation* receiving 60% low priority marks. On the other hand, *free-flowing rivers* as both a natural resource and a water resource and *maintain wildlife* received more than 40% high priority ratings. *Free-flowing rivers as a natural resource* and *maintain wildlife* were rated low priority by less than 20% of the respondents but *free-flowing rivers as a water resource* was ranked low priority by 30% of those surveyed.

If we use the obtained mean (Table 1) on each of these priority rankings, and combine natural and water resource items, the 7 chosen items would rank thus:

	Rank among recreational uses	Rank among natural resource uses <sup>4</sup>	Rank among water resource uses <sup>4</sup>
Maintain wildlife threatened by extinction	1	2	
Maintain rivers and streams in their free-flowing condition for recreation use	2	3	
Maintain rivers and streams in their free-flowing condition for recreation use	3		4
Establish more wilderness area	4	10	
Develop campgrounds for outdoor camping	5	12	
Develop forests for more recreational use	6	13	
Develop more lakes and reservoirs for recreational use	7		8

<sup>4</sup>See Appendix Table 1.

Resource uses which relate in some degree not only to recreational use but also to conservation of natural resources rank higher than do uses which are more recreational only.

The lack of a strong desire to increase strictly recreational facilities is not unique to Idaho. O'Leary (1976) reported a study in northwest Washington where a change in land-use classification resulted in a sudden and large increase in

Table 1. Priority rankings for recreation-related uses of natural resources and water resources.

Use of resource	High priority	Not ranked	Low priority	Mean <sup>1</sup>
	%	%	%	%
<b>Natural Resources</b>				
Maintain wildlife	43	39	18	1.752
Free-flowing rivers (NR)	41	40	19	1.785
Preserve wilderness	18	45	38	2.197
Develop campgrounds	16	45	39	2.232
Recreation use of forests	13	46	41	2.276
<b>Water Resources</b>				
Free-flowing rivers (WR)	43	18	39	1.966
Lakes for recreation	17	23	60	2.432

<sup>1</sup>Possible means ranged from 1.0 (high priority) to 3.0 (low priority).

nonlocal (tourist) use of the leisure area. Rather than being pleased with the increased revenue, most local people felt the newcomers were intruders into the traditional community leisure space (which far exceeded the boundaries of the community). Before the change, roads and campsites had been little developed and locals could use the recreational opportunities with no restriction. Increased development brought not only rules but fees, loss of solitude, increased vandalism and traffic. There was also fear of long-run social change due to the influx of "outsiders".

A case study in Pennsylvania on local objectives for development of the region found the primary interest was on **local** recreational opportunities and improving the environment for **local** enjoyment (Schramm and Burt 1970). Local attitudes in the Pennsylvania study were most favorable toward programs of economic growth and social and environmental improvement (including increasing the amount of "outside" money spent on recreation), but growth attitudes were tempered by conservatism toward changing essential features of a valued life-style. People preferred gradual changes over which they felt there could be some local control.

Idaho residents seem to follow a similar pattern to the Washington and Pennsylvania residents who were surveyed. They prefer to place emphasis on maintaining existing amenities but are not anxious for further development of facilities.

For results of this study to be of use to resource managers, planners and recreation researchers, the background characteristics of the respondents must be considered as they relate to the priority rankings. Leisure orientations and preservation orientations will also be related to the rankings.

Analysis of the leisure scale indicates that Idaho residents have a definite positive orientation toward leisure. Younger, better educated people were the most leisure-oriented. Those in white collar occupations were more positive to leisure while farmers and residents of southeast Idaho were least favorable (Appendix Table 2). More detailed analysis of these items are presented in Carlson (1976) and Carlson and Sargent (1977).

The preservation scale indicates that while Idaho residents are not strongly for preservation, neither are they strongly opposed to it. Significant background variables associated with a positive preservation orientation were a younger age and an urban childhood resident (Appendix Table 3) while those with a rural childhood remained most negative to preservation of resources regardless of whether they stayed in the rural area or later became urban residents.

Carlson and Sargent (1977) noted that those most leisure oriented and those most preservation-oriented were most likely to oppose easy access to recreation, preferring instead that recreation be more remote. An orientation toward leisure apparently had no relationship to preferences for tax support vs. user's fees for recreation facilities, but those positive to preservation were more likely to favor tax support. Both those who have a high leisure orientation and those who have a high preservation orientation apparently favor some regulations on the use of recreation resources. However, Idaho residents definitely prefer state control of recreation to federal control.

An orientation favoring preservation of natural resources was the only distinguishing characteristic of those giving relatively high priority rank to 3 of the 7 recreational resource uses — *develop campgrounds*, *recreational use of forests* and *lakes for recreation* (Appendix Tables 4, 5 and 6). The standardized regression coefficient beta for the preservation scale was  $-.215$  on *develop campgrounds*,  $-.154$  on *forests for recreation* and  $-.188$  on *lakes for recreation* ( $P < .001$ )<sup>5</sup> indicating that those more preservation-oriented were more likely to favor these developments. Other variables such as age, education, income, etc., appeared not to be pertinent.

Both younger age ( $P < .05$ ) and a positive orientation toward preservation of natural resources ( $P < .001$ ) were related to a high priority rank for *free-flowing rivers as a natural resource* use and to wilderness areas, with the preservation scale explaining a large part of the variance in rankings. High priorities for *free-flowing rivers as a water resource* and *maintaining wildlife* were also related to a younger age and a positive orientation toward *preservation of natural resources* ( $P < .001$ ) and to a lesser extent to a nonfarm occupation ( $P < .05$ ). When the preservation scale is used, the leisure scale apparently adds insignificantly to the explanation of the variance in ranking of priorities (Appendix Tables 7, 8, 9 and 10).

### Relationship Between Resource Uses

To explore the relationship between the various possible uses of natural and water resources, we used a factor-analysis procedure which identifies underlying patterns of relationships between variables and allows variables to be arranged in sets which account for more of the variance in the data than would any other combinations of variables. Two sets of variables appeared in the factor analysis which are relevant to our discussion (Table 2). If we use a factor loading (regression coefficient) of  $.40$  as the critical level for

<sup>5</sup>P = probability of obtaining a significant f-ratio by chance.

including a variable in a set, a generally accepted practice, then we had one set consisting of *free-flowing rivers* with minus loadings and *minerals* and *hydroelectric power* with positive loadings. The second set is composed of *develop campgrounds* and *forests for recreation*, both with plus loadings. The first set might be called a "resource consumption" factor with emphasis on the use of the resource. The opposite end of the resource consumption factor appears to be a preservationist orientation focusing on *free-flowing rivers*. The closeness of pollution control and preservation of wilderness to the  $.40$  cut-off point lends additional support to this notion. The second set could be viewed as a "recreational" factor, focusing on the use of the resource for recreational purposes. While the resource consumption items show up as being opposed to the recreational items in factor 2, they are far from the cut-off point, thus indicating less polarization on the recreational-consumption continuum than on the consumption-preservation continuum.

### Pollution Control

The appearance of *pollution control* among the preservation items and its position as No. 1 high priority for natural resource uses with Idaho residents (Appendix Table 1) is consistent with findings in other studies. Faich (1971) discerned these connections between the environmental movement and recreation: non-work time may be spent on behalf of environmental protection directly through voluntary organizations, and projection of areas for outdoor recreation is a major focus of the environmental movement. Faich reports that about one-third of recreationists belong to some type of recreation or conservation group. Members may join a group more to register their opinion on environmental action than for recreational opportunities.

Others have also observed *pollution-control* with other preservation items. Dunlop (1975) in a study in Washington found 51% of the sample felt more funds should be devoted

Table 2. Factor analysis, priorities for use of natural resources and water resources.

	Factor loading	Mean		Factor loading	Mean
<b>Factor No. 1 Resource Consumption</b>					
Minerals	.432 <sup>1</sup>	2.223	Free-flowing rivers (WR)	-.656 <sup>1</sup>	1.966
Hydroelectric power (WR)	.437 <sup>1</sup>	2.151	Free-flowing rivers (NR)	-.624 <sup>1</sup>	1.785
Timber products	.351	1.985	Pollution control	-.395	1.479
Industrial water	.296	2.397	Preserve wilderness	-.369	2.197
Agricultural production	.289	2.037	Maintain wildlife	-.294	1.750
Forests for grazing	.243	2.164			
Hydropower	.244	2.001			
Average mean		2.065			1.835
variance explained		32.3%			
<b>Factor No. 2 Recreational Use</b>					
Forests for recreation	.592 <sup>1</sup>	2.276	Minerals	-.244	2.323
Develop campgrounds	.570 <sup>1</sup>	2.232	Timber	-.219	1.985
Lakes for recreation	.332	2.432	Domestic water	-.210	1.425
Average mean		1.878			2.313
variance explained		13.4%			

<sup>1</sup>.400 is used as the critical level on factor loadings.

to protection of forests and other natural areas for public enjoyment, 35% gave high priority to protecting endangered species of wildlife but 69% said more should be spent on pollution control. Dillman (1974) also reports that a ranking of major categories of government services by Washington residents produces *law and order* as No. 1 priority, followed by *pollution control* as No. 2 priority and *protect nature* as No. 3.

Dunlop (1975) divides recreational activities into two groups — consumptive and appreciative. Consumptive activities involve taking something from the environment, such as hunting or fishing. Appreciative activities (hiking, camping, etc.) attempt to enjoy the natural environment without altering it. Other studies have referred to these divisions of activity as “harvest” and “expressive”. While Dunlop did not find a strong association between types of recreation activities and environmental concern, he did find those who preferred appreciative activities more concerned than others about environmental problems. There was more concern for protecting areas directly useful for favorite activity than for environmental issues in general.

### Inconsistent Rankings

Several resource uses which appear in the factor analysis are mutually exclusive because it is impossible to use a resource both ways concurrently. Most respondents gave a low priority to one use and a high priority to the opposed one, but some gave both uses one of the four high priority ranks, a seemingly inconsistent position. This phenomenon occurred in the following:

- *Free-flowing rivers* (as a natural resource) and *develop hydropower* (13% gave both uses one of the high priority ranks)
- *Wilderness areas* and *timber* (8% gave both uses high priority)
- *Wilderness areas* and *minerals* (4% gave both high priority)

Seven recreational uses of natural and water resources were selected for this study and their ranking by Idaho residents in terms of priorities among competing resource uses was explored. Three uses — *maintain wildlife*, *free-flowing rivers as a natural resource* and *free-flowing rivers as a water resource* — were ranked in the top half of the potential uses. The other four uses — *preserve wilderness*, *develop campgrounds*, *recreational use of forests* and *lakes for recreation* — ranked in the lower half of all priorities.

Along with social background variables such as age, income, education and occupation, orientations toward leisure (the leisure scale) and toward preservation of resources (the preservation scale) were considered. Only the preservation orientation was related to the ranking of *develop campgrounds*, *recreational use of forests* and *lakes for recreation*. A positive position on the preservation scale

- *Free-flowing rivers* (as a water resource) and *hydroelectric power* (26% gave both high priority)
- *Free-flowing rivers* (as a water resource) and *water for agricultural irrigation* (40% gave both high priority)

Several other uses are opposed to each other in the sense of being potential sources of conflict when both occur in the same area, but are not mutually exclusive. Examples of these opposed uses and the percentage of respondents giving both a high priority are:

Use	Competing use	% giving both high priority
Campgrounds	Timber	8
Pollution control	Timber	52
	Minerals	42
	Agricultural production	50
	Hydropower	48
Forests for recreation	Timber	11
	Minerals	4
Maintain wildlife	Timber	30
	Minerals	25
	Increase agricultural production	18
Lakes for recreation	Agricultural irrigation	14

Some of the inconsistency in ranking uses may come from a failure of respondents to think through the consequences of attempting to develop both uses concurrently. Some respondents may also prefer one type of development in their own area and another type elsewhere in the state. A greater part of the seeming inconsistency likely comes from a wish for balanced development within the state. This is particularly true for *maintain wildlife* — people were generally very favorable to this but 25 to 30% would not want wildlife maintained at the expense of locking up other natural resource development. *Pollution control* also was highly desired, not at the expense of natural resource development but rather in conjunction with it.

## Summary

and to a lesser extent a younger age were related to high priorities for *free-flowing rivers* (as a natural resource use) and for *wilderness area*. The same two variables (preservation orientation and younger age) were associated with a high priority rank for *free-flowing rivers as a water resource* and *maintaining wildlife*. Farmers were more opposed to *free-flowing rivers* and *maintaining wildlife* than were non-farmers.

Although Idaho residents have a definite positive orientation toward leisure, the leisure scale did not appear to explain variations in the way competing resource uses were ranked.

Factor analysis produced two sets of resource uses. One was a resource consumption group consisting of extractive uses such as *minerals*, *timber* and *hydroelectric power* with



plus loadings, opposed by preservationist uses such as *free-flowing rivers* and *wilderness* with minus loadings. The second set consisted of recreational uses (*develop campgrounds, forests for recreation* and *lakes for recreation*) with plus loadings. Indications are that while the preservationist uses were generally given a higher priority than the consumptive uses, priorities in the consumption-preservation set were also polarized. This polarization does not occur to such an extent with the strictly recreational uses.

Also appearing among the resource consumption items was *pollution control*. This is consistent with other studies which have found a link between recreation and environmental concerns. *Pollution control* ranked first among natural resource uses.

Several respondents gave high priority ranks to both a recreation use and a competing, but not necessarily

mutually exclusive, extractive use. We feel this is best explained by the desire on the part of Idaho residents for balanced development of recreation-preservation but not at the expense of non-development of resources. This is particularly apparent if *pollution control* is included in the preservation items.

Recreation in Idaho is often of an informal nature not requiring much site development — a favorite fishing hole, a spot to pull the camper off the road, a scenic walk or drive. Specific formal development such as campgrounds and facilities on lakes which might bring intruders into local leisure space is not highly sought. People obviously prefer to and believe it possible to use Idaho's natural resources for economic development but in a manner which does not add to pollution and which does not destroy or interfere with existing recreational opportunities.

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# Appendix

**Appendix Table 1. Priorities for natural resource and water resource use, by rank (by means).**

Rank	Use	High priority %	Not ranked %	Low priority %	Mean <sup>1</sup>
<b>Natural resource uses</b>					
1	Control pollution of natural resources (water, air, land)	63	26	11	1.479
2	Maintain wildlife threatened by extinction	43	39	18	1.752
3	Maintain rivers and streams in their free-flowing condition for recreation use	41	40	19	1.785
4	Encourage farmers to adopt better conservation practices	37	44	19	1.824
5	Emphasize geothermal energy development	31	49	20	1.897
6	Emphasize timber production	29	43	28	1.985
7	Increase agricultural production by reclaiming more land	24	48	27	2.037
8	Develop more hydroelectric power by constructing dams as the need arises	21	42	36	2.151
9	Increase the use of forest and range land for grazing	18	48	34	2.164
10	Establish more wilderness area	18	45	38	2.197
11	Explore for and mine valuable minerals	16	46	38	2.223
12	Develop campgrounds for outdoor camping	16	45	39	2.260
13	Develop forests for more recreational use	13	46	41	2.276
<b>Water resource uses</b>					
1	For agricultural irrigation	72	14	14	1.422
2	For domestic and municipal water supply	72	14	14	1.425
3	Flood control	59	19	22	1.631
4	Maintain streams and rivers in their free-flowing conditions for recreation use	43	18	39	1.966
5	Hydroelectric power generation	41	17	41	2.001
6	To dispose of sewage and industrial wastes	40	17	43	2.033
7	For industrial water supply	19	22	59	2.397
8	To develop more lakes and reservoirs for recreational use	17	23	60	2.432
9	For commercial navigation	3	23	74	2.703

<sup>1</sup>Possible means ranged from 1.0 (high priority) to 3.0 (low priority).

**Appendix Table 2. Regression coefficients (beta), leisure scale<sup>1</sup> with background variables.**

Background variables	Beta	F
Age	-.19	18.717 <sup>2</sup>
Education	.12	6.666 <sup>3</sup>
Income	-.02	.163
Size of childhood community	.05	1.144
Size of present community	.03	.494
Farm occupation	-.12	7.070 <sup>3</sup>
White collar occupation	.10	5.612 <sup>4</sup>
Blue collar occupation	.00	
North Idaho area	-.04	.721
Southeast Idaho area	-.11	6.112 <sup>4</sup>
Southwest Idaho area	.00	
F = 11.044 <sup>2</sup> R <sup>2</sup> = .150		

<sup>1</sup>See text for items included in the Leisure Scale.

<sup>2</sup>P < .001 (P = Probability of obtaining a significant F-ratio by chance)

<sup>3</sup>P < .01

<sup>4</sup>P < .05

**Appendix Table 3. Regression coefficients (beta), preservation scale<sup>1</sup> with background variables.**

Background variables	Beta	F
Age	-.13	8.685 <sup>2</sup>
Education	.09	3.437
Income	-.03	.521
Size of childhood community	.12	6.926 <sup>2</sup>
Size of present community	.04	.753
Farm occupation	-.08	3.246
White collar occupation	-.02	.162
Blue collar occupation	.00	
North Idaho area	.04	.637
Southeast Idaho area	-.04	.595
Southwest Idaho area	.00	
F = 5.941 <sup>3</sup> R <sup>2</sup> = .087		

<sup>1</sup>See text for items included in the Preservation Scale.

<sup>2</sup>P < .01

<sup>3</sup>P < .001 (P = Probability of obtaining a significant F-ratio by chance)

**Appendix Table 4. Regression coefficients (beta), priority for developing campgrounds with background variables, leisure scale, preservation scale.**

Background variables	Beta	F
Age	.004	.006
Education	.028	.325
Income	-.070	2.569
Size of childhood residence	.053	1.269
Size of present residence	-.040	.742
Farm occupation	.025	.261
White collar occupation	.034	.458
Blue collar occupation	.009	.032
North area of Idaho	.023	.230
Southeast area of Idaho	.000	.000
Southwest area of Idaho	.000	
Leisure scale	.001	.000
Preservation scale	-.215	23.367 <sup>1</sup>
F = 2.469 <sup>1</sup> R <sup>2</sup> = .050		

<sup>1</sup>P < .001 (P = Probability of obtaining a significant F-ratio by chance)

**Appendix Table 6. Regression coefficients (beta), priority for lakes for recreation with background variables, leisure scale and preservation scale.**

Background variables	Beta	F
Age	.020	.179
Education	.033	.466
Income	.031	.489
Size of childhood residence	-.030	.410
Size of present residence	-.033	.511
Farm occupation	-.035	.521
White collar occupation	-.041	.667
Blue collar occupation	-.036	.567
North area of Idaho	-.019	.159
Southeast area of Idaho	.056	1.414
Southwest area of Idaho	.000	
Leisure scale	.022	.224
Preservation scale	-.188	17.889 <sup>2</sup>
F = 2.376 <sup>1</sup> R <sup>2</sup> = .048		

<sup>1</sup>P < .01

<sup>2</sup>P < .001 (P = Probability of obtaining a significant F-ratio by chance)

**Appendix Table 5. Regression coefficients (beta), priority for recreational use of forests with background variables, leisure scale and preservation scale.**

Background variables	Beta	F
Age	-.039	.673
Education	.023	.216
Income	.010	.000
Size of childhood residence	-.053	1.219
Size of present residence	-.007	.021
Farm occupation	.108	.235
White collar occupation	-.054	1.102
Blue collar occupation	-.023	.231
North area of Idaho	-.005	.011
Southeast area of Idaho	.042	.769
Southwest area of Idaho	.000	
Leisure scale	.018	.444
Preservation scale	-.154	11.931 <sup>2</sup>
F = 1.786 <sup>1</sup> R <sup>2</sup> = .037		

<sup>1</sup>P < .05

<sup>2</sup>P < .001 (P = Probability of obtaining a significant F-ratio by chance)

**Appendix Table 7. Regression coefficients (beta), priority for free-flowing rivers (as a natural resource) with background variables, leisure scale and preservation scale.**

Background variables	Beta	F
Age	.108	5.854 <sup>1</sup>
Education	.068	2.266
Income	.031	.555
Size of childhood residence	-.013	.087
Size of present residence	-.056	1.611
Farm occupation	.052	1.320
White collar occupation	-.090	3.560
Blue collar occupation	-.006	.016
North area of Idaho	-.010	.046
Southeast area of Idaho	.066	2.190
Southwest area of Idaho	.000	
Leisure scale	.080	3.459
Preservation scale	-.274	43.510 <sup>2</sup>
F = 9.323 <sup>2</sup> R <sup>2</sup> = .166		

<sup>1</sup>P < .05

<sup>2</sup>P < .001 (P = Probability of obtaining a significant F-ratio by chance)

Appendix Table 8. Regression coefficients (beta), priority for wilderness areas with background variables, leisure scale and preservation scale.

Background variables	Beta	F
Age	.099	4.889 <sup>1</sup>
Education	.010	.048
Income	.057	1.931
Size of childhood residence	.029	.408
Size of present residence	-.036	.683
Farm occupation	-.008	.033
White collar occupation	-.006	.014
Blue collar occupation	.012	.067
North Idaho area	.055	1.458
Southeast Idaho area	.070	2.444
Southwest Idaho area	.000	
Leisure scale	-.055	1.626
Preservation scale	-.332	63.365 <sup>2</sup>
F = 8.861 <sup>2</sup> R <sup>2</sup> = .159		

<sup>1</sup>p < .05

<sup>2</sup>p < .001 (P = Probability of obtaining a significant F-ratio by chance)

Appendix Table 10. Regression coefficients (beta), priority for maintain wildlife with background variables, leisure scale and preservation scale.

Background variables	Beta	F
Age	.184	15.862 <sup>1</sup>
Education	.005	.011
Income	.073	2.906
Size of childhood residence	.070	2.276
Size of present residence	-.005	.010
Farm occupation	.100	4.221 <sup>2</sup>
White collar occupation	-.018	.132
Blue collar occupation	-.057	1.478
North area of Idaho	-.015	.099
Southeast area of Idaho	.032	.483
Southwest area of Idaho	.000	
Leisure scale	-.070	2.445
Preservation scale	-.116	7.110 <sup>1</sup>
F = 4.890 <sup>1</sup> R <sup>2</sup> = .095		

<sup>1</sup>p < .001 (P = Probability of obtaining a significant F-ratio by chance)

Appendix Table 9. Regression coefficients (beta), priority for free-flowing rivers (as a water resource) with background variables, leisure scale and preservation scale.

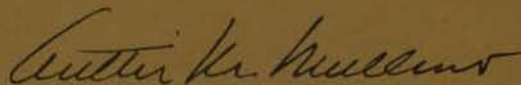
Background variables	Beta	F
Age	.135	9.276 <sup>1</sup>
Education	-.064	2.010
Income	.061	2.262
Size of childhood residence	-.013	.090
Size of present residence	.000	.000
Farm occupation	.090	3.997 <sup>2</sup>
White collar occupation	-.018	.149
Blue collar occupation	.002	.002
North Idaho area	-.075	2.702
Southeast Idaho area	.040	.831
Southwest Idaho area	.000	
Leisure scale	.053	1.492
Preservation scale	-.244	34.496 <sup>1</sup>
F = 9.447 <sup>1</sup> R <sup>2</sup> = .168		

<sup>1</sup>p < .001 (P = Probability of obtaining a significant F-ratio by chance)

<sup>2</sup>p < .05



*The State is truly our campus. We desire to work for all citizens of the State striving to provide the best possible educational and research information and its application through Cooperative Extension in order to provide a high quality food supply, a strong economy for the State and a quality of life desired by all.*



Auttis M. Mullins  
Dean, College of Agriculture  
University of Idaho



## SERVING THE STATE

This is the three-fold charge of the College of Agriculture at your state Land-Grant institution, the University of Idaho. To fulfill this charge, the College extends its faculty and resources to all parts of the state.

**Service** ... The Cooperative Extension Service has active programs in 42 of Idaho's 44 counties. Current organization places major emphasis on county office contact and multi-county specialists to better serve all the people. These College of Agriculture faculty members are supported cooperatively by federal, state and county funding to work with agriculture, home economics, youth and community development.

**Research** ... Agricultural Research scientists are located at the campus in Moscow, at Research and Extension Centers near Aberdeen, Caldwell, Parma, Sandpoint, Tetonía, Twin Falls and at the U.S. Sheep Experiment Station, Dubois and the USDA/ARS Soil and Water Laboratory at Kimberly. Their work includes research on every major agricultural program in Idaho and on economic and community development activities that apply to the state as a whole.

**Teaching** ... Centers of College of Agriculture teaching are the University classrooms and laboratories where agriculture students can earn bachelor of science degrees in any of 20 major fields, or work for master's and Ph.D. degrees in their specialties. And beyond these are the variety of workshops and training sessions developed throughout the state for adults and youth by College of Agriculture faculty.