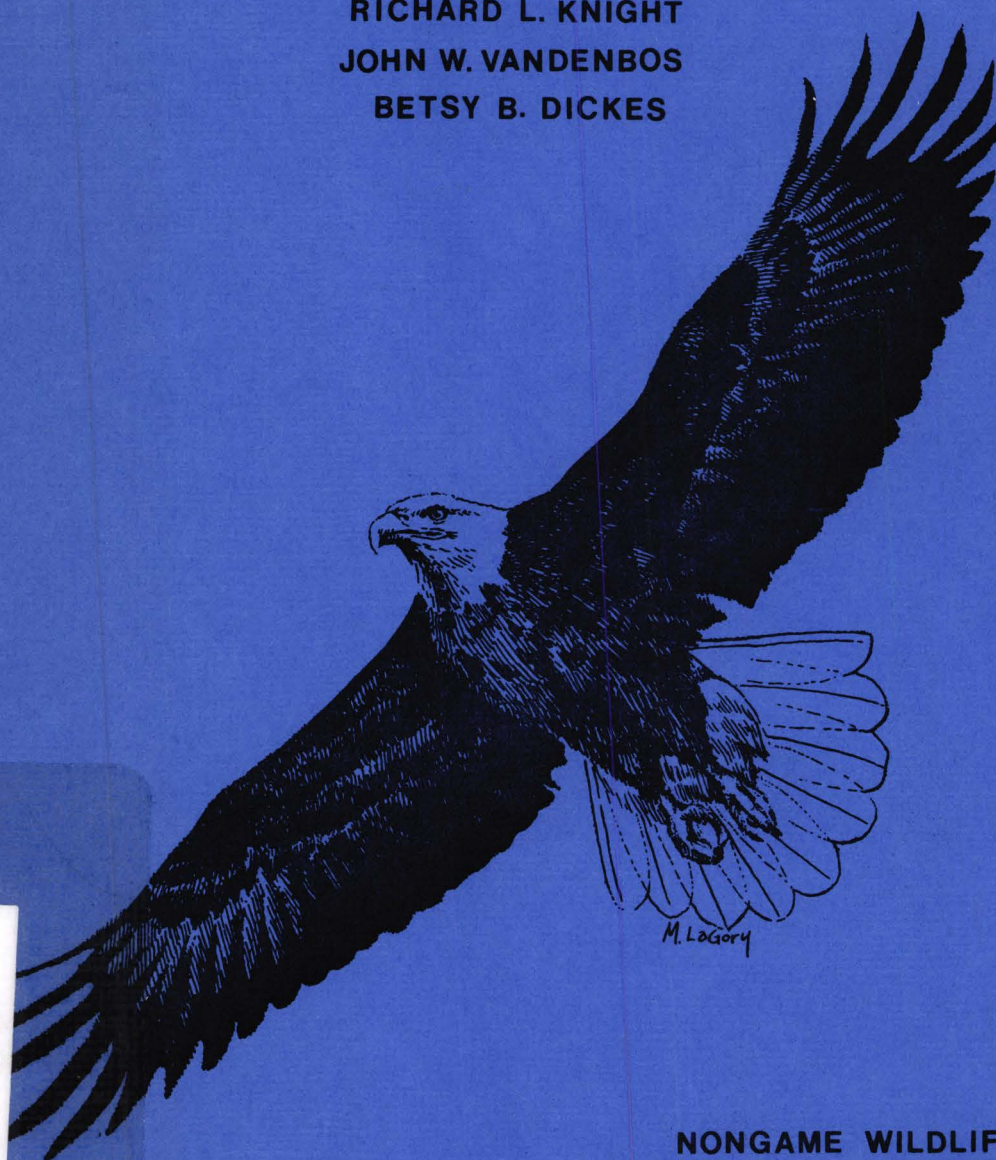


RESULTS OF A
RECREATIONAL-CONSUMER QUESTIONNAIRE
ON THE
SKAGIT RIVER BALD EAGLE NATURAL AREA
DURING WINTER 1980

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April 1980

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DEDICATION

This report is dedicated to Jack Adkins, Fred Martin and Chris Servheen, three individuals who have contributed much to the ecology and management of bald eagles on the Skagit River.

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ABSTRACT

During January and February 1980, 683 individuals were interviewed at 2 access areas at Rockport and Marblemount on the Skagit River. Sixty-three percent of the individuals interviewed were from urban areas exceeding populations of 100,000. Ninety-one percent of the responses indicated the primary purpose of the visit was for nature study and recreation. A smaller percentage of the responses were from individuals visiting the Skagit to fish (9%) and of these most indicated that they were from much smaller communities. Responses indicated that there was almost no polarization between various user groups. Hunting and trapping drew the highest negative responses (12 and 23% respectively) while there were no negative responses for fishing. A high percentage of "no opinion" responses indicated an education program aimed at consumptive and nonconsumptive users alike would be an effective management option.

INTRODUCTION

The historical impetus for application of scientific wildlife management principles came from an early recognition of the importance of these principles for enhancing the recreational values of consumptive activities, such as hunting, fishing, and trapping (Allen 1978). The number and diversity of interested user groups have expanded considerably since this early beginning. It is within the context of this expansion that many existing problems of the resource manager must be evaluated and examined. The difficulty of making decisions based on physical parameters alone has been increased due to the inclusion of a wider variety of social parameters, goals and values (Hendee 1974, Brown et al. 1976, O'Leary and Weeks 1979).

A major recent development making wildlife management more complex is the burgeoning growth of nonconsumptive use of the wildlife resource. While universities have responded well to this new challenge by adding nongame wildlife courses to their curricula (Crawford 1976), there still exists the largely unsolved problem of trying to integrate increasing behavioral and decision-making problems with attempts to maximize human satisfaction under a multiple-use management scheme (O'Leary and Weeks 1979). This has resulted in the compounding problem of wildlife managers who feel quite comfortable in attempting multi-species management techniques, but who are not prepared to deal with problems generated by conflicting human priorities on the wildlife resource.

The Skagit River exemplifies the difficulty resource management agencies encounter in trying to manage for both consumptive and nonconsumptive user groups. In view of increasing use of this area for nonconsumptive uses, we sought to determine the attitudes and characteristics of various user groups and thereby enhance management of this important area.

HISTORY AND DESCRIPTION OF STUDY AREA

This study was conducted on the Skagit River in Skagit County from Rockport to Marblemount (Figure 1). The area is approximately 70 miles east of Puget Sound and 100 road miles northeast of Seattle.

The Skagit River is the largest western drainage in northwestern Washington. It flows south and west through the North Cascades and bisects the North Cascades National Park (Servheen 1975). Three dams (George, Diablo, and Ross) presently exist on the Skagit while a fourth is being considered near Copper Creek.

The Skagit Valley is 2 to 3 miles wide in the Rockport area and narrows to less than 1 mile in width at Newhalem. Servheen (1975) stated that the valley has steep sides and a U-shaped form typical of a glaciated valley.

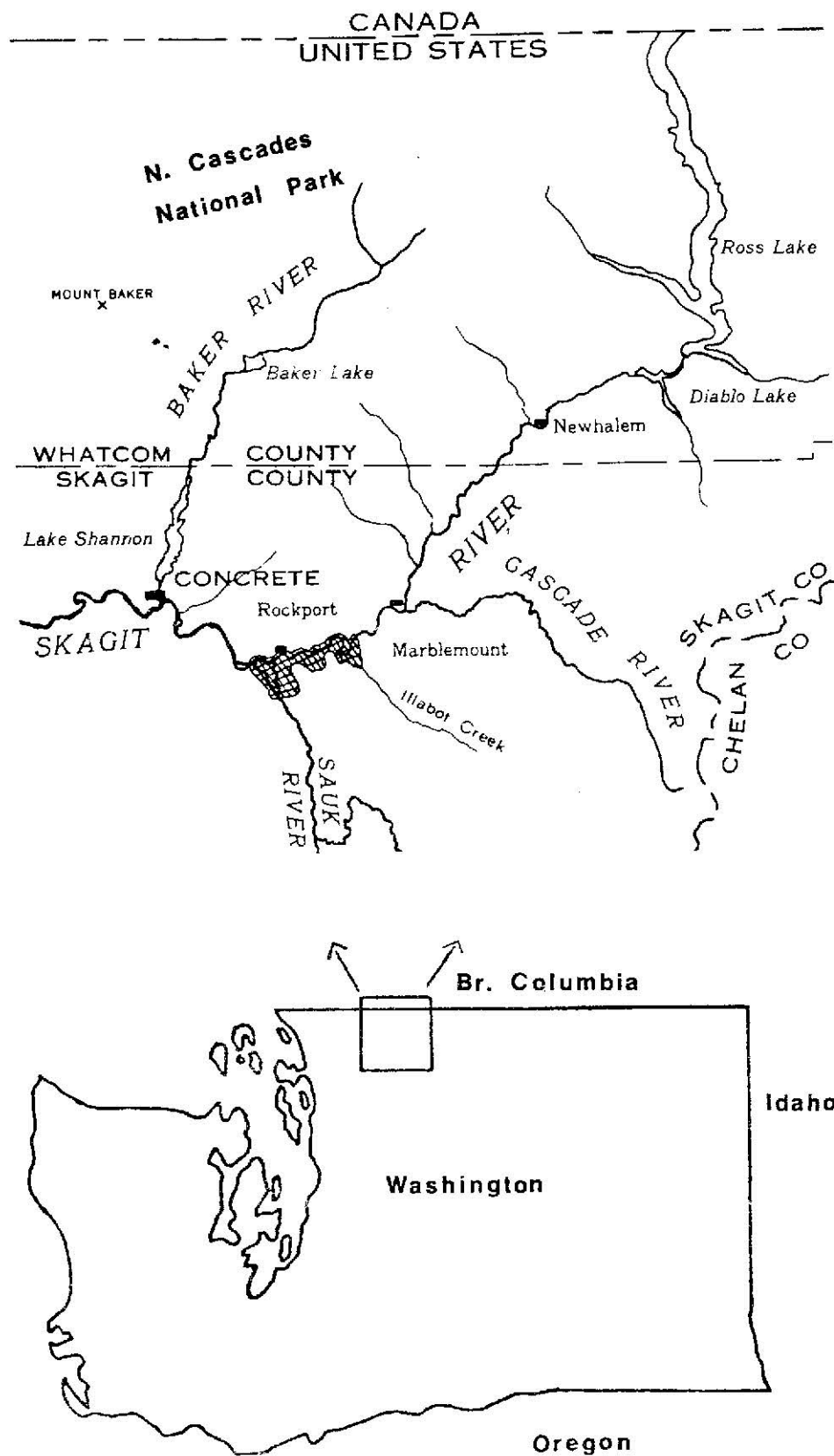


Figure 1. Skagit River. Interviews conducted between Rockport and Marblemount (taken from Servheen 1975).

Water quality in the Skagit is high. Above Burlington, the Skagit and all its tributaries are rated class AA. Water turbidity is low except during times of heavy stream flow. Gravel bars are common between Rockport and Marblemount. In the winter the valley's weather is characterized by heavy cloud cover.

The dominant vegetation along the Skagit is typical of the Western Hemlock (*Tsuga heterophylla*) life zone (Franklin and Dyrness 1973). According to Fred Martin (pers. comm. in Servheen 1975) the lower elevations were extensively logged from approximately 1913 to 1935. Land development and speculation, establishment of the North Cascades National Park, completion of the north cross-state highway up the Skagit Valley and over the Cascade crest, and close proximity to western Washington's population centers have greatly increased human pressure on this sensitive area. A detailed study of the wintering ecology of bald eagles of this area has been conducted by Servheen (1975) while the Nature Conservancy (1976) and Adkins (1977) have prepared descriptive management plans.

On 6 February 1976, Governor Daniel J. Evans dedicated the Skagit River Bald Eagle Natural Area between Rockport and Marblemount. In 1971 the Nature Conservancy initiated a campaign to protect critical wintering habitat of bald eagles along the Skagit River. During the next 5 years the Nature Conservancy was able to acquire over 850 acres at a cost of over \$300,000 (Nature Conservancy 1976). The Department of Game added an additional 650 acres creating a preserve of over 1,500 acres. At present, the Nature Conservancy owns approximately 300 acres and the Washington Department of Game owns and leases approximately 1,800 acres.

METHODS

Most wildlife managers who have used questionnaires are aware of the difficulties of conducting reliable and valid surveys. Questionnaire surveys are being increasingly employed in marketing research, public opinion polls and government studies. Personal interview questionnaires differ from mail survey questionnaires because they provide a person to ask or explain questions, to guide the respondent and to record answers (Filion 1978).

During weekends in January and February 1980, groups and individuals were contacted by the second author wearing a Department of Game uniform at 2 access areas on the Skagit River located at Rockport and Marblemount. The purpose of the questionnaire was briefly explained, then the questions were asked and answers recorded (Figure 2). The category "nature study" included such activities as bird watching, wildlife photography, and plant study. "Recreational use" included river rafting, picnicing or an activity without any clear goal other than simply being outdoors. No effort was made to elicit "correct" responses. The interviewer tried not to influence the respondent's motivation and thereby bias the answer although it is conceded that this is difficult to entirely eliminate (Barath and Cannell 1976).

As will be obvious when reading the results section, the number of responses and number of individuals interviewed are not the same for different questions. This was caused by the inability to obtain complete sets of answers from all individuals interviewed, particularly larger groups. For example, it was a simple matter to determine user activities of all individuals in a large group, yet it was more difficult to obtain their individual opinions of user activities. Individuals interviewed were allowed to give more than one response for several of the questions asked. As an example, an individual when asked her/his primary purpose of visit, was allowed to register one or all of the listed purposes (hunting, fishing, trapping, nature study, recreation, other). At the same time, a response from a particular user group was not counted in the result tabulations when responses were being counted for a question which dealt directly with that user group. For example, the response of an individual who listed fishing as his/her primary purpose of visit was not included in the results of the preference survey (in favor of, no opinion, not in favor of) when the user activity was the same. Simply put, a fisherman was not allowed to bias the responses of the preference survey in regards to fishing.

Several additional points should be made to help clarify the results. No attempt was made to differentiate responses of individuals floating the Skagit with commercial rafters from those with private crafts. The steel-head fishing season was open during the entire interview period. Although the Skagit River was in "good shape" and fishing was considered to be fair, fewer fish were caught than the previous year (Tom Williams pers. comm.). There is little trapping conducted on this stretch of the Skagit River and therefore, little opportunity to encounter trappers. Indeed, no trappers were interviewed during the 2 month period.

NONGAME WILDLIFE SURVEY FORM

Skagit River

Location: _____ Date: _____

Number in party: _____ Time: _____

City of Origin: _____ Weather: _____

How are they using the area: Boat _____ Car _____ Other _____

Primary purpose for visit:

fishing _____	nature study _____
hunting _____	recreation _____
trapping _____	other _____

Is this the first visit to the area: _____

Frequency of use in past 12 months: _____

Duration (hours, days) of current visit: _____

BALD EAGLE USERS ONLY

How did you hear about this area:

Friend _____	Newspaper _____
TV ad _____	Magazine _____
Radio _____	Other _____

Who do you think (which organization) has responsibility for protecting the bald eagle in Washington State?

	+	0	-
fishing			
hunting			
trapping			
nature study			
recreation			
other			

+ == in favor of
0 == no opinion
- == not in favor

Figure 2. Questionnaire used on Skagit River, Winter 1980.

RESULTS

- 1 Total number of parties interviewed: 98
- 2 Total number of individuals encountered and interviewed (responses not necessarily complete for all these individuals): 683
- 3 Average number of individuals per party: 7
- 4 County of origin of interviewed individuals:

<u>County</u>	<u>Number of responses</u>	<u>Percent of total</u>
Skagit	75	26
Snohomish	22	8
King	169	59
Pierce	16	5
Thurston	5	2
	<hr/>	<hr/>
TOTAL	287	100

- 5 City of origin of interviewed individuals:

<u>City</u>	<u>Number of responses</u>	<u>Percent of total</u>
Marblemount	4	1
Rockport	19	7
Birdsview	6	2
Concrete	30	10
Sedro Wooley	10	4
Mt. Vernon	6	2
Arlington	2	1
Everett	15	5
Lynnwood	5	2
Seattle	165	58
Kent	3	1
Tacoma	16	5
Lacey	2	1
Olympia	3	1
	<hr/>	<hr/>
TOTAL	286	100

- 6 Number of people from different sized population centers:

	<u>Number of responses</u>	<u>Percent of total</u>
a) Cities with populations under 1,000 (Marblemount, Rockport, Birdsview, Concrete)	59	21

b) Cities with populations from 1,000 to 2,500 (Arlington)	2	1
c) Cities with populations from 2,500 to 5,000 (Sedro Wooley)	10	3
d) Cities with populations from 5,000 to 10,000 (Mt. Vernon, Lacey)	8	3
e) Cities with populations from 10,000 to 25,000 (Lynnwood, Kent, Olympia)	11	4
f) Cities with populations from 25,000 to 100,000 (Everett)	15	5
g) Cities with populations over 100,000 (Seattle, Tacoma)	<u>181</u>	<u>63</u>
TOTAL	286	100

7 Average number of visits per individual during a calendar year: 8

8 Primary purpose of visit:

<u>Activity</u>	<u>Number of responses representing different user groups^a</u>	<u>Percent of total</u>
Fishing	121	9
Nature Study	535	43
Recreation	<u>600</u>	<u>48</u>
TOTAL	1,256	100

9 Average number of visits per user group per year^a:

Fishing: (102 individuals, 1,015 total visits per year) = 10 days/year

Nature Study: (140 individuals, 298 total visits per year) = 2 days/year

Recreation: (158 individuals, 414 total visits per year) = 3 days/year

^amany individuals belonged to more than one user group

10 Number of responses for each user group from different size cities^a:

	Number of responses for each user group per city size (percent in parenthesis)			
	<u>FISHING</u>	<u>NATURE STUDY</u>	<u>RECREATION</u>	<u>TOTAL</u>
a) Cities with populations under 1,000 (Marblemount, Rockport, Birdsvew, Concrete)	68(94)	2(3)	2(3)	72(100)
b) Cities with populations from 1,000 to 2,500 (Arlington)	3(50)		3(50)	6(100)
c) Cities with populations from 2,500 to 5,000 (Sedro Wooley)	11(65)	3(17)	3(17)	17(99)
d) Cities with populations from 5,000 to 10,000 (Mt. Vernon, Lacey)	9(41)	2(9)	11(50)	22(100)
e) Cities with populations from 10,000 to 25,000 (Lynnwood, Kent, Olympia)	6(21)	8(29)	14(50)	28(100)
f) Cities with populations from 25,000 to 100,000 (Everett)	7(13)	23(43)	23(43)	53(99)
g) Cities with populations over 100,000 (Seattle, Tacoma)	14(2)	444(48)	459(50)	917(100)

11 Responses of user groups of other user groups (percent of total in parenthesis)^b:

<u>User activity</u>	<u>In favor of</u>	<u>No opinion</u>	<u>Not in favor of</u>	<u>Total</u>
Fishing	265(95)	14(5)	0(0)	279(100)
Hunting	237(64)	89(24)	44(12)	370(100)
Trapping	136(37)	147(40)	83(23)	366(100)
Nature Study	71(80)	18(20)	0(0)	89(100)
Recreation	46(65)	19(27)	6(8)	71(100)

^a many individuals belonged to more than one user group

^b responses not included in results of preference survey when user activity was the same

¹²Preference results of user groups by user groups (percent of total in parenthesis)^b:

a) Fishermen's opinions of other user groups:

<u>Activity</u>	<u>In favor of</u>	<u>No opinion</u>	<u>Not in favor of</u>	<u>TOTAL (%)</u>
Hunting	85(93)	5(6)	1(1)	91(100)
Trapping	56(62)	30(33)	4(5)	90(100)
Nature Study	64(78)	18(22)	0(0)	82(100)
Recreation	45(64)	19(27)	6(9)	70(100)

b) Nature study users' opinions of other user groups:

<u>Activity</u>	<u>In favor of</u>	<u>No opinion</u>	<u>Not in favor of</u>	<u>TOTAL (%)</u>
Fishing	258(95)	14(5)	0(0)	272(100)
Hunting	150(55)	87(31)	40(14)	277(100)
Trapping	79(28)	119(43)	79(28)	277(99)
Recreation	2(100)	0(0)	0(0)	2(100)

c) Recreational users' opinions of other user groups:

<u>Activity</u>	<u>In favor of</u>	<u>No opinion</u>	<u>Not in favor of</u>	<u>TOTAL (%)</u>
Fishing	266(95)	15(5)	0(0)	281(100)
Hunting	167(55)	92(31)	43(14)	301(100)
Trapping	87(29)	129(43)	82(28)	298(100)
Nature Study	23(100)	0(0)	0(0)	23(100)

¹³Individual opinions of who has responsibility for protection of Bald Eagles in Washington:

	<u>Total individuals</u>	<u>(Percent in parenthesis)</u>
U.S. Fish & Wildlife Service	40	(30)
Wash. Department of Game	77	(59)
Land Owners	5	(4)
Citizens of State	2	(1)
Conservation & Recreation Groups	1	(1)
Don't Know	6	(5)
TOTAL	131	(100)

^bresponses not included in results of preference survey when user activity was the same

14 Total source of information for user groups:

<u>Source of information</u>	<u>Total individuals</u>	<u>(percent in parenthesis)</u>
Friend	43	(37)
Television	0	(0)
Radio	4	(3)
Newspaper	25	(21)
Magazine	0	(0)
Other	45	(39)
	<hr/>	
TOTAL	117	(100)

DISCUSSION

An overview of attitudes and point of origin of consumptive and nonconsumptive user groups can provide a useful point of reference for the resource manager faced with conflicting options on an issue or specific management unit. Additionally, such information is important in enabling a management agency to prioritize its own limited resources of time, manpower and money. Thirdly, keeping in mind how public attitudes and desires change, such information allows an agency to chart its future direction.

The responses gathered from 683 people encountered at 2 access areas on the Skagit River between Rockport and Marblemount in January and February 1980 reveal several important facts. Individuals frequenting the Skagit River on weekends during winter months are primarily from urban centers. Sixty-three percent of 286 responses were from individuals that came from cities with populations exceeding 100,000. Since these cities (Seattle and Tacoma) are more than a 2-hour drive from the point of interview, it indicates a strong desire on the part of city dwellers to observe wildlife.

An equally interesting fact was that 98% of the responses indicated users from cities with populations exceeding 100,000 were primarily traveling to the Skagit for nonconsumptive recreation and nature study activities. Quite the opposite was observed for responses from individuals interviewed from cities with populations less than 1,000. In this case, 94% of the responses indicated that individuals were on the Skagit to fish and 4% for nature study and nonconsumptive recreation. It is useful to keep in mind that individuals interviewed were allowed to register for all of the user groups if they desired.

An important aspect which perhaps places these results in a better perspective is the average number of visits of the various user groups. Whereas the average number of visits of all user groups combined was 8 per year, fishermen averaged 10 visits per year while individuals involved in nature study or nonconsumptive recreation averaged 2 and 3 visits per year, respectively.

The picture emerging from these figures is that a majority of the people using the Skagit River in the winter come from urban areas a few times each year primarily for nature study and nonconsumptive recreation, while a lesser number from smaller communities visit the Skagit River more often to fish.

Perhaps the most interesting information resulting from this questionnaire were the user groups' responses about each other. Individuals' responses were not included in the results of this preference survey when the user activity was the same. Somewhat surprisingly, 95% of the responses were in favor of fishing, a consumptive activity, while only 65% of these responses were in favor of recreation and 80% in favor of nature study.

These figures are surprising because 91% of the responses indicated people were at the Skagit primarily for nature study and nonconsumptive recreation while only 9% responded that they were there to fish. Perhaps a useful figure to keep in mind was that while 8% of the responses were against recreational use on the Skagit, there were no votes registered against nature study. This indicated that user groups perceived nonconsumptive recreational use as somewhat detrimental or "consumptive."

Resource managers and conservation organizations have long speculated on the degree of animosity and polarization that might exist between various user groups on the Skagit River. Dire predictions have been issued on what might someday occur. The results from this questionnaire indicate these speculations appear to be unfounded. Fishermen's responses on other user groups indicated a broad degree of tolerance with only 9% of the responses against recreationists and none not in favor of nature study. This indicated that fishermen view themselves as consumptive and nonconsumptive users. Although responses of individuals participating in nature study and recreation on the Skagit reflected strong opinions in regards to trapping (both indicated 28% not in favor), there were no responses against fishing. One encouraging figure for management agencies is the high percentage of responses indicating no opinion of hunting and trapping (both indicated 31% and 43% no opinion, respectively). Since it has already been determined that the majority of the individuals were on the Skagit for nature study and recreational use, and that these individuals originated primarily from urban centers, it would seem an educational effort directed at Washington's cities would be useful. The Washington Department of Game and various sportsmens clubs throughout the state have an active hunter education program. It appears for any education program to be effective it will have to reach nonconsumptive as well as consumptive users. The results of the questionnaire indicate a possibly productive avenue to use. Of 117 individuals interviewed who were there primarily to see eagles, 21% indicated they had heard of the Skagit from newspapers, 37% from friends and 39% from unidentified sources. This then is where education efforts may wish to be directed. Nature Conservancy has had an active bald eagle education program on the Skagit River for the past 2 years which has concentrated its efforts in reaching small groups of people (Susan Skagen pers. comm.).

Lastly, 89% of 131 responses obtained believed that the Washington Department of Game or the U.S. Fish and Wildlife Service had the responsibility of protecting bald eagles in Washington. Only 2 responses (1%) indicated that the citizens of the state shared this responsibility. This is understandable since citizens perceive that government agencies are an extension of citizen responsibility.

ACKNOWLEDGEMENTS

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