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**North Dakota Households' Attitudes
Toward Wetland Preservation**

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ABSTRACT

Over one-half (57%) of the 1,757 respondents to a random survey of North Dakota households agree that all remaining natural wetlands in the state should be preserved. Nearly two-thirds (63%) of the respondents support compensating landowners for preserving wetlands. However, the amount most respondents were willing to pay landowners was \$10 or less per year. Over one-third (38%) of the respondents used wetlands for outdoor recreation. Responses were somewhat related to socioeconomic characteristics such as age, gender, income, education, and place of residence.

Key Words: household attitudes, prairie potholes, wetland, North Dakota

NOTE:

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North Dakota Households' Attitudes Toward Wetland Preservation

Jay A. Leitch and Steven A. Hirsch*

Wetlands are a high profile natural resource in North Dakota. Controversies over the use and management of the state's prairie potholes have continued for at least three decades. North Dakota was one of only two states where the National Research Council held wetland definition hearings in 1994 (National Research Council 1995). North Dakota was the first state to enact and subsequently repeal a no-net-loss (NNL) of wetlands law (Leitch et al. 1987). The state has a Wetland Institute as part of its Water Education Foundation and will soon build a wetland interpretive center adjacent to Interstate 94, the main east-west highway route. North Dakota is a major player in the North American Waterfowl Management Plan. In short, there is no lack of publicity or public awareness about wetlands in the state of North Dakota.

In spite of the high profile of wetlands in the state, little is known about how the "person on the street" feels about wetlands. Aside from two studies conducted nearly a decade ago (Grosz and Leitch 1990, NDCTWS 1988), there is little scientific literature on how North Dakota residents value wetland resources. There have been studies in other states investigating landowner \ attitudes towards wetlands (Whitaker 1996, Napier et al. 1995, van Kooten and Schmitz 1992). A recent study of public attitudes in New England concluded respondents were willing to pay nearly \$300 million each year to preserve wetlands in New England (Stevens et al. 1995). To address the attitude issue, several questions concerning wetlands were included in a recent statewide survey of North Dakota households. The survey was conducted to collect information for development of the State Comprehensive Outdoor Recreation Plan (SCORP) as required by the Land and Water Conservation Fund program administered by the National Park Service.

METHODS

A four-page questionnaire was mailed to 5,000 North Dakota households whose addresses were purchased from a mailing list company. The questionnaire included six questions about wetlands (Fig. 1), a budget allocation question that included wetland

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Wetlands:

About half of North Dakota's natural wetlands have been drained. Approximately 2.5 million acres of wetland, something over 5 percent of the state's total area, remain intact. Many of these are on private land.

Do you think all remaining natural wetlands in North Dakota should be preserved?

___ Yes ___ No

If no, what percentage of those remaining would you support preserving?

___ percent

For the percentage of wetlands you would support preserving, would you support compensating landowners for preserving wetlands?

___ Yes ___ No

If yes, how much would you be willing to pay in increased annual taxes as your share of compensation to all private landowners for preserving wetlands?

___ \$1 to \$5 annually

___ \$6 to \$10 annually

___ \$11 to \$25 annually

___ More than \$25 annually

Are natural wetlands a part of your outdoor recreation activities in North Dakota?

___ Yes ___ No

If yes, identify those activities.

Figure 1. Wetlands questions asked on 1996 SCORP questionnaire.

preservation (Fig. 2), as well as questions about the socioeconomic status of respondents. Three mailings resulted in responses from 1,757 households, for a response rate of 35 percent. Comparison with statewide demographic information revealed the respondents were representative of the state's population as a whole, and no evidence of non-response bias was indicated. Responses were summarized and cross-tabulated with five selected socioeconomic characteristics (age, gender, education, income, and farm/non-farm residence) and whether respondents used wetlands for outdoor recreation.

State and federal money is available to spend on local parks and on recreation facilities in North Dakota. Suppose you had to spend \$100 of public money on the five recreational areas listed below. How would you spend the \$100? You do not have to spend money in each of the five categories, just those important to you. Be sure the total adds to \$100. (For example, if you think wetlands should be a high priority, you may spend \$50, or any amount you choose up to \$100, on "Wetland areas" under "B". Then, spend the remaining \$50 on the other types of recreational areas.)

A. Improve access to water-based recreational opportunities	\$ _____
B. Preserve natural areas (those having few man-made features)	
Woodland areas	\$ _____
Wetland areas (marshes and swamps)	\$ _____
Native prairies and open spaces	\$ _____
C. Build park and recreation facilities (playgrounds, ballfields)	
\$ _____	
Total: \$ 100	

Figure 2. Budget allocation questions asked on 1996 SCORP questionnaire.

RESULTS AND DISCUSSION

Attitudes toward wetland preservation and landowner compensation were found to be related to socioeconomic characteristics. Responses to an open-ended question demonstrated

examples of the opposite and often extreme attitudes toward wetlands that continue to fuel controversy in North Dakota. Finally, the budget allocation question showed North Dakota households value wetlands about the same as other landscape amenities.

All remaining wetlands in North Dakota should be preserved

Over half (57%) of the respondents answered “yes” to the question “Do you think all remaining natural wetlands in North Dakota should be preserved?” Slightly over one-third (35%) said “no,” with 8% not responding to the question. Of those who answered “no,” the average response to “If no, what percentage of those remaining would you support preserving?” was 30.5%.

There was an inverse relationship between age and wetland preservation (Fig. 3). Support for wetland preservation decreased as respondent’s age increased. Of those younger than 20 years, 83% supported preservation while only 42% of those aged 60 to 69 years supported preservation. There was also a dichotomy between farm/nonfarm residence and preservation attitudes. Only one-third of those living on farms supported preservation, while nearly two-thirds of the non-farm residents were in support of preservation. Women were slightly more in support of wetland preservation than were men. Education and income were not related to support for preservation. Of those who “used wetlands for outdoor recreation,” 70% supported preservation; while only 53% of those who did not use wetlands for outdoor recreation supported preservation.

Landowners should be compensated for preserving wetlands

Nearly two-thirds (63%) of all respondents supported compensating landowners for preserving wetlands (Fig. 4). Less than one-fourth (23%) did not support compensation for landowners who preserve wetlands. Support for compensating landowners decreased with age, going from 92% support of those under 20 years to only 41% of those 80 years or older. Women were slightly less supportive of compensation for landowners than were men. Non-farm residents were slightly more supportive than farm residents. Support for compensation for landowners increased with income and education, and was higher from those who use wetlands for outdoor recreation.

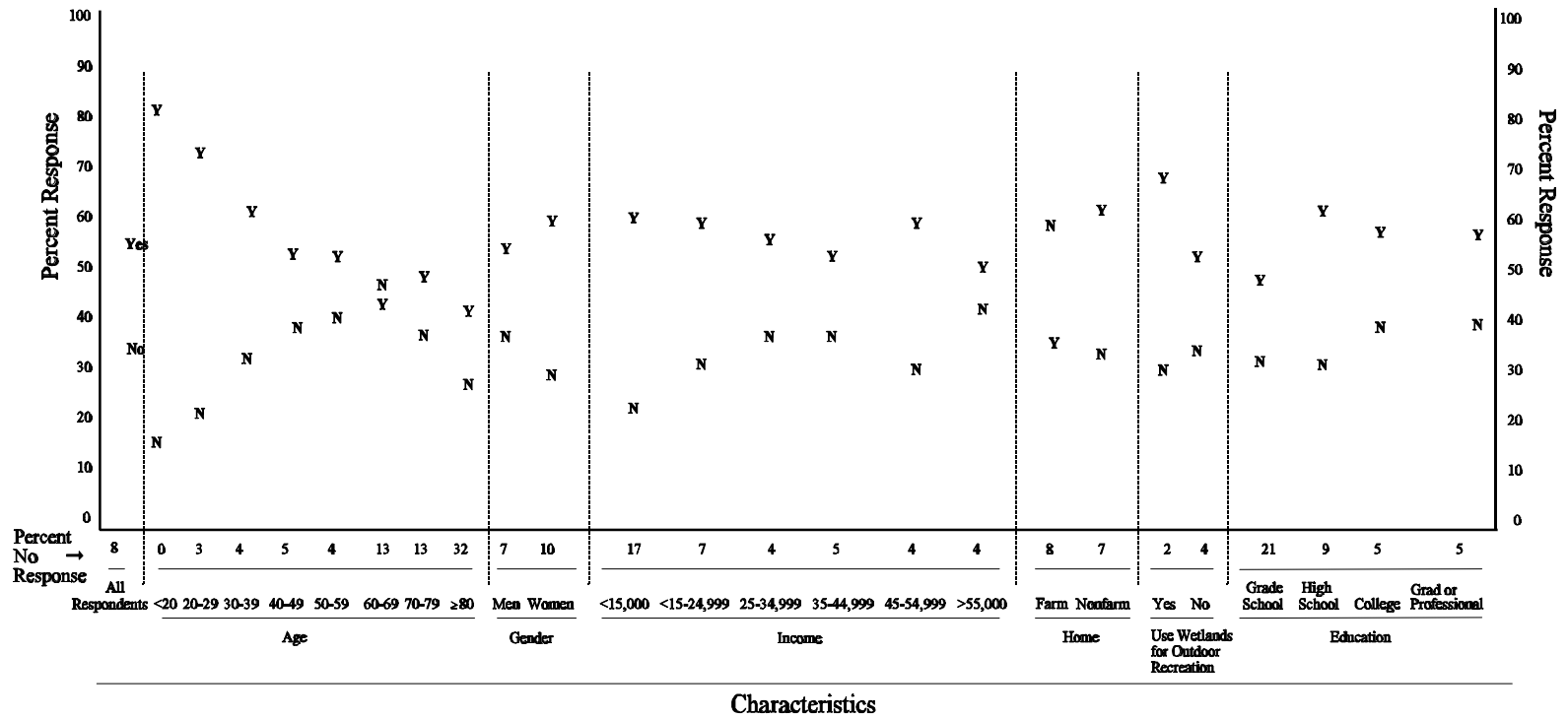


Figure 3. Responses to "Do you think all remaining wetlands in North Dakota should be preserved?"

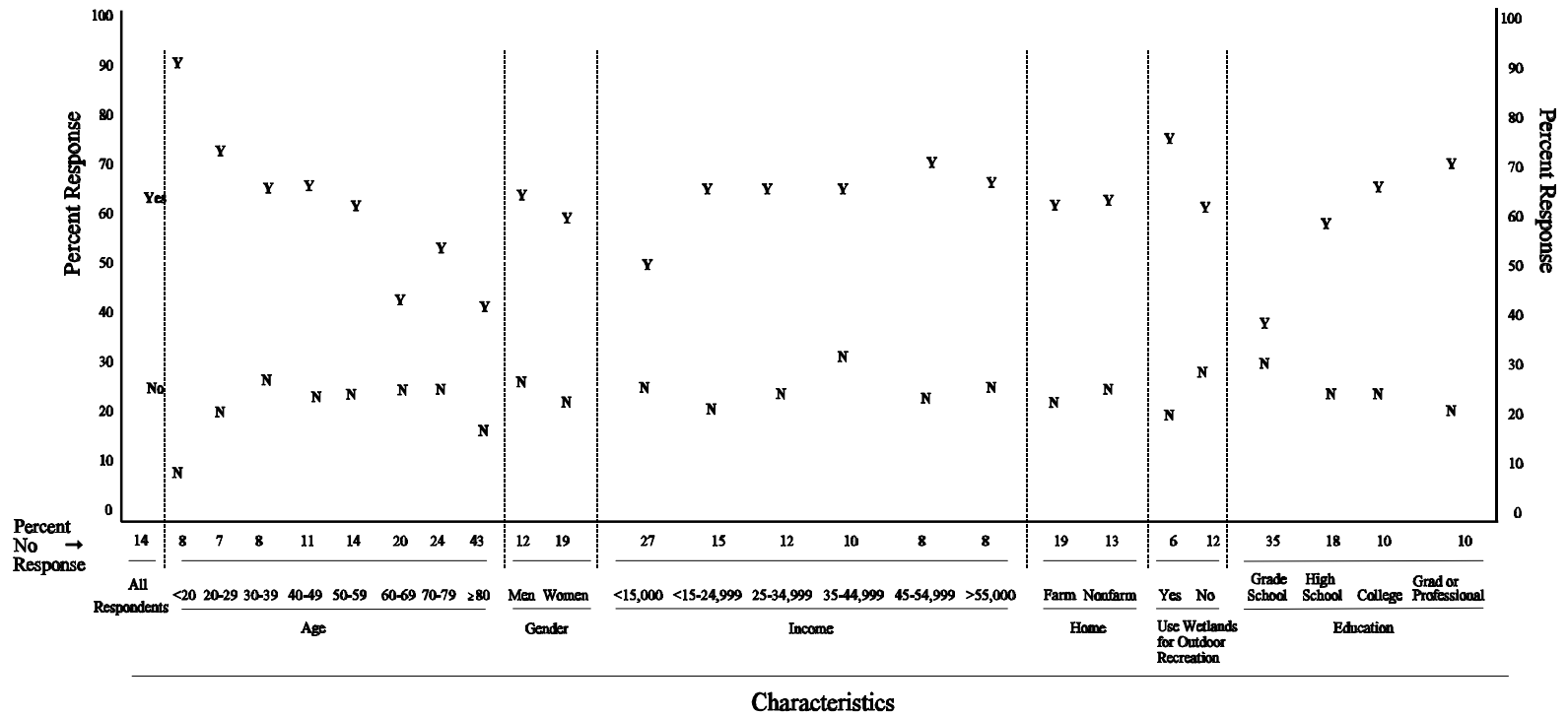


Figure 4. Responses to "Would you support compensating landowners for preserving wetlands?"

When asked how much they would be willing to pay in increased taxes to compensate landowners for preserving wetlands, the most frequent response was \$1 to \$5 annually. Only 5% of the respondents were willing to pay more than \$25 annually (Fig. 5). Few respondents who used wetlands for outdoor recreation were willing to pay more in annual taxes than those who did not use wetlands for recreation. If the 250,000 households in the state paid the median amounts in the proportions indicated, over \$1,260,000 would be available for wetlands protection annually in North Dakota.

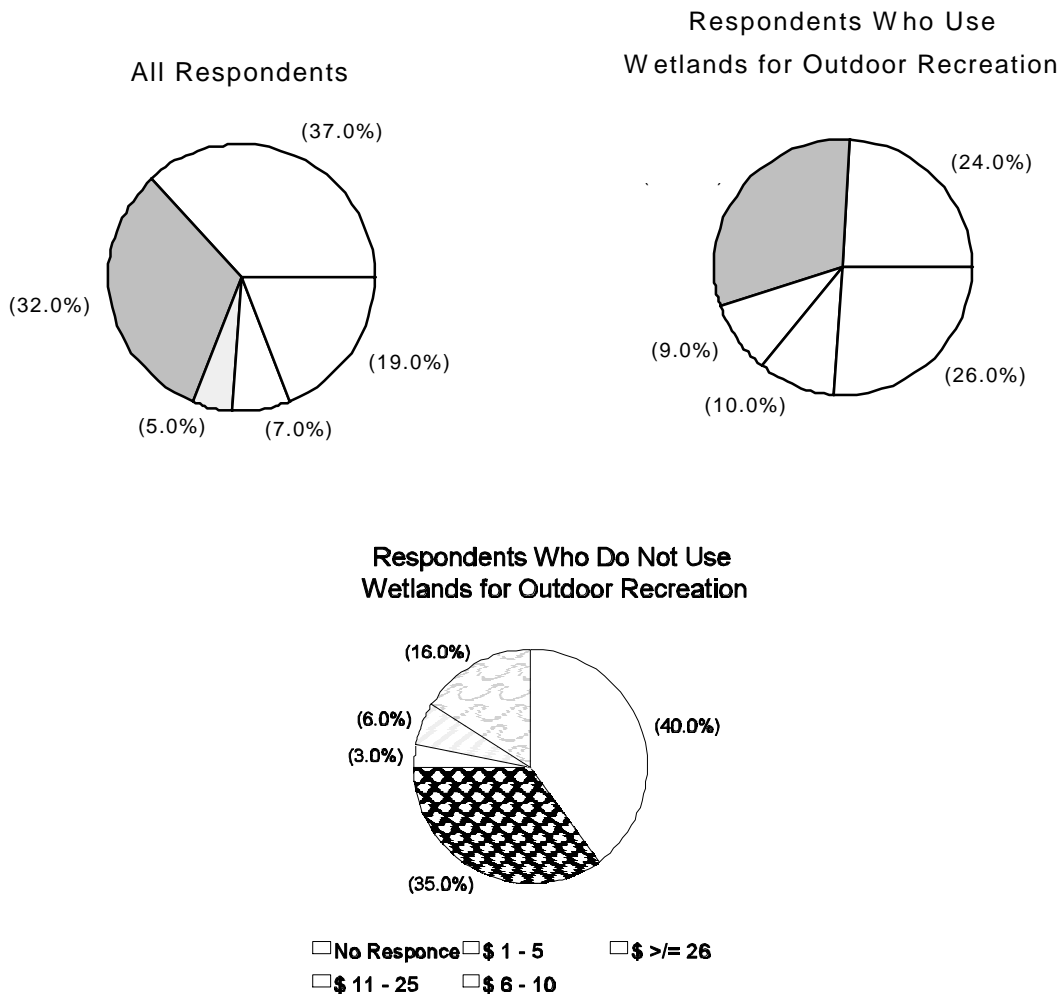


Figure 5. "How much respondents would be willing to pay in increased annual taxes as their share of compensation to private landowners for preserving wetlands."

Wetlands are a part of outdoor recreation activities

Wetlands are often said to be important components of outdoor recreation. Accordingly, 38% of the respondents answered “yes” to the question “Are natural wetlands a part of your outdoor recreation activities in North Dakota?” Gender, income, education, and place of residence did not influence this response. As might be expected, wetlands become less a part of outdoor recreation activities as respondents’ ages increased (Fig. 6). The response from both farm and non-farm respondents was 51% no (they are not part of outdoor recreation) and 38% yes. Recreation activities of those who said wetlands were a part their outdoor recreation activities included hunting and trapping, fishing, observing wildlife, and photography (Table 1).

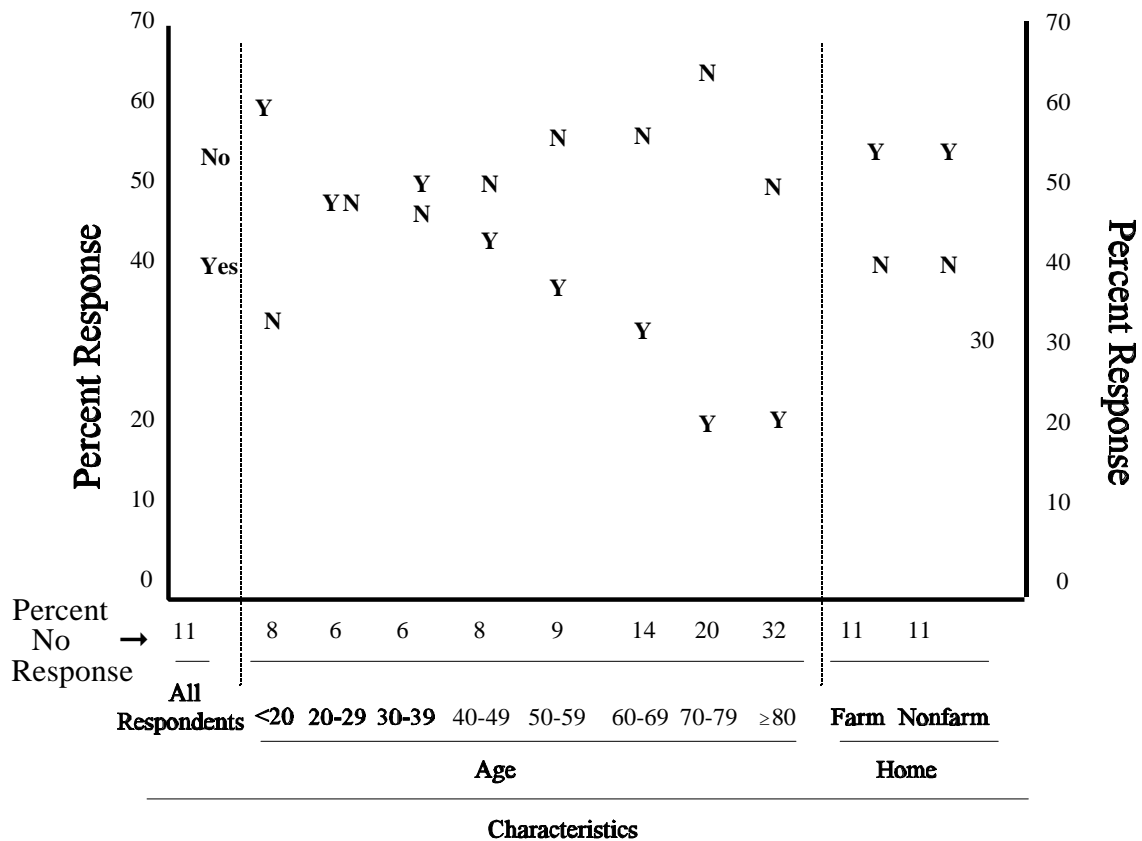


Figure 6. Responses to “Are natural wetlands a part of your outdoor recreation activities in North Dakota?”

Table 1. Response to: "Are natural wetlands a part of your outdoor recreation activities in North Dakota? If yes, identify those activities."

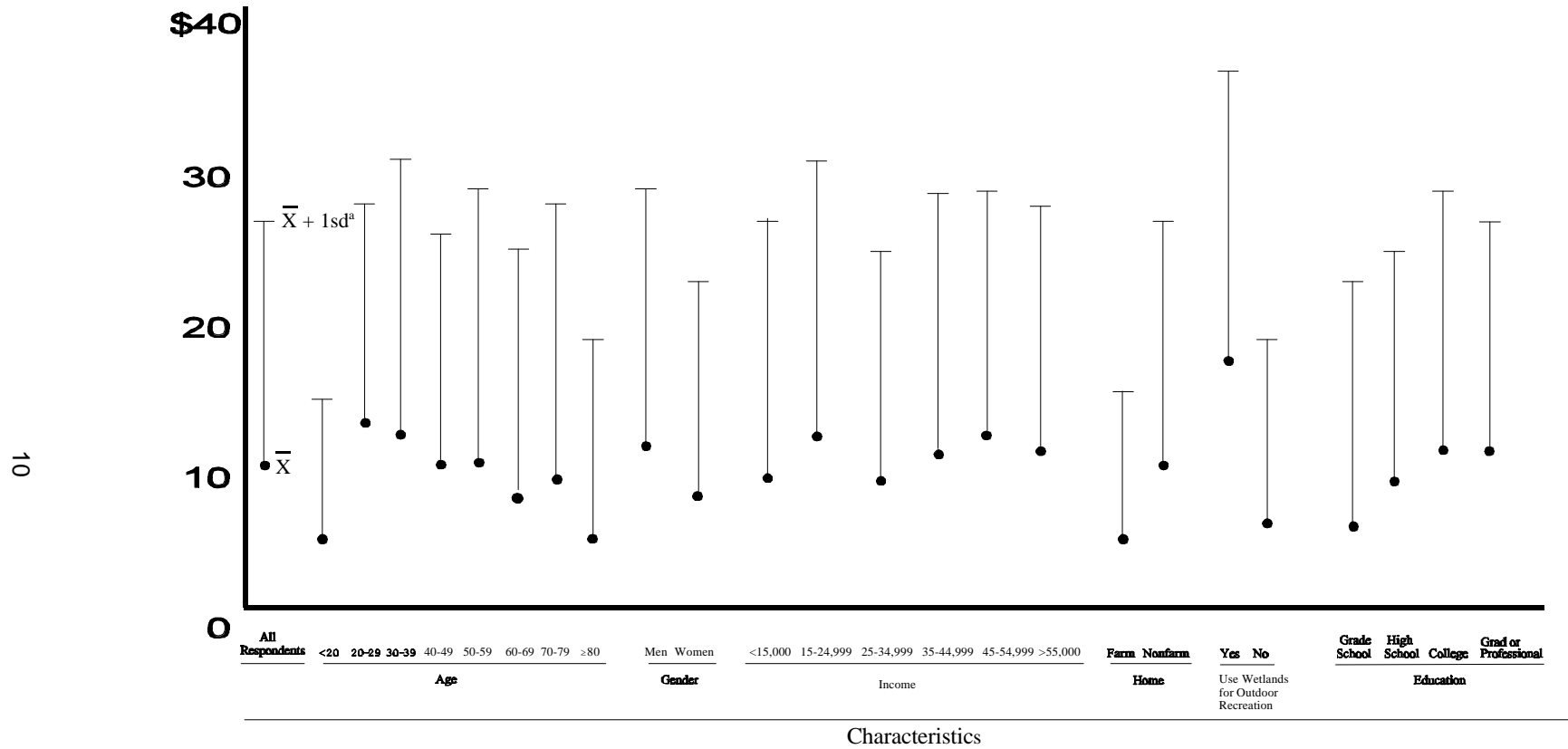
<u>Activity</u>	<u>Percent of all respondents</u>
Hunting/Trapping	23
Fishing	1.5
Wildlife Observation	2.2
Photography	0.3
Pistol Shooting	0.6

Wetlands relative to other natural resources

Respondents were asked to allocate \$100 of public money among five potential uses, related to outdoor amenities, based on their preferences (Fig. 2). From the hypothetical \$100 budget, respondents allocated an average of \$11 to preserving wetlands (Fig. 7). This confirms that wetlands are valued by North Dakota households, but there also are other landscape components that have similar value to North Dakotans.

The budget amount allocated to wetlands varied slightly and as expected across socioeconomic characteristics. Men and middle-aged people allocated more than the average to wetlands. Non-farm residents allocated more than average and farm residents less than average. Allocation to wetlands increased with education and decreased with age. Those who use wetland for outdoor recreation allocated substantially more to wetlands than any other group.

North Dakota households were asked a similar budget-type question in 1987 (Grosz and Leitch 1990). At that time they allocated \$19 to wetlands, which was one of four choices. The response to any one use in 1987 would be higher, since there were only four choices. Standardizing 1987 responses for the difference in the number of choices resulted in an allocation of \$15 to wetlands which was similar to the allocation of \$11 indicated by respondents in this study (Table 2).



^aThe acreage plus one standard deviation, the acreage minus one standard deviation is not shown since it would include zero in every case.

Figure 7. Amount allocated to wetland preservation from a \$100 budget, by socioeconomic characteristics

Table 2. Budget allocation comparison between 1996 and 1987 responses.

1996 Survey		1987 Survey	
Item	\$ Allocated		Item
Improve Access to Water	21	....
Preserve Woodlands	20	....
Preserve Wetlands	11	19(15)*	Wetland Preservation
Preserve Native Prairies	13	....
Build Parks and facilities	35	27(22)	
	....	35(28)	Land Acquisition
	....	19(15)	Fishing Opportunities
	....	(20)	Dummy 5th Choice
Total: \$100		\$100	

* Numbers in parenthesis represent amounts allocated if a fifth item had been included in the 1987 survey.

Open-Ended question

Survey respondents were offered the opportunity to provide comments about outdoor recreation in general in North Dakota. Seven responses (out of over 200) to this open-ended question included specific reference to wetlands which illustrate the bipolar attitude toward wetlands in the state. Examples include:

- “mandate return of wetlands drained by farmers”
- “bring back water to the slough on Dewey Street”
- “prevent wetlands from being drained”
- “protect all rangeland and wetlands”
- “make wetland protection issues top priority”
- “use common sense when dealing with wetlands”
- “return control of wetlands to farmers”

CONCLUSIONS

A slight majority of North Dakota households support, and are willing to pay for, preservation of the state’s remaining natural wetlands. Most are willing to pay from \$1 to \$5 per year. Therefore, North Dakotans are willing to pay about \$1,260,000 per year for wetland preservation. Young, urban respondents support and are usually willing to pay more for wetland preservation than older or rural respondents. People who use wetlands for outdoor recreation were more willing to compensate landowners than those who did not use wetlands. People who

use wetlands were also willing to allocate more public funds toward wetland preservation than those who did not use wetlands for outdoor recreation.

It appears that North Dakotan's attitudes toward wetland preservation have not changed much since 1987 in spite of continued publicity concerning the values of wetlands to society. In fact, much of the publicity may have worked to sour attitudes toward wetlands since it has dealt with property rights and the farm program. In addition, precipitation in much of the state has been above normal. Many areas have "excess" surface water which may also reduce support for wetland preservation.

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