

Why Landowners Restore Wetlands: A National Survey

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Acknowledgments

Funding for this research came from the National Wetlands Conservation Alliance with assistance from the U. S. Environmental Protection Agency and the U. S. Fish and Wildlife Service, Office of Extension Programs, Cooperative Agreement #14-48-0009-95-1252. Special thanks to Gene Whitaker of the NWCA and Duncan McDonald of the U. S. Fish and Wildlife Service for their enthusiastic support of this project. This research was conducted through the Department of Animal Ecology at Iowa State University and Iowa State University Extension. Thanks also to Bruce Menzel and James Dinsmore for text review.

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

EDC 107 January 1997

File: Agronomy 8-1, Wildlife 2

Introduction

In the mid 1700s, the land now called the “Lower 48” United States was estimated to contain some 221 million acres of wetlands (Dahl, 1990). The Federal Swamp Land Acts of 1849, 1850, and 1860 ceded to 15 states all “swamp and overflow lands” and authorized their citizens to drain some 65 million acres and convert them to agricultural and other uses “for the public good.” This was the national policy on wetlands until 1977 when President Carter’s Executive Order #11990 formally changed national policy on wetlands. Until that time, wetlands were generally considered wasteland that need to be improved. One avid Iowa waterfowler and farmer expressed the opinion of many in a 1991 survey: “The only good wetland is either drained for productive cropland or deepened to make a duck pond. Anything in-between is worthless” (Pease, 1992).

Though some regulatory authority over wetlands was instituted in the 1972 Federal Water Pollution Control Act, wetland conversion remained federally sanctioned. Until President Carter’s 1977 Order ended direct federal assistance for wetland conversion, few besides wildlife and wetland ecologists understood the value of wetlands. Our national behavior reveals this ignorance: since 1849, we have drained, filled, and converted to other uses some 54 percent of the 221 million acres of wetlands in the lower 48 states (Tiner, 1984). Even since the 1950s, some 10.7 million acres of palustrine wetlands have been converted to other uses, including 87 percent for agricultural uses (Tiner, 1984). From the 1960s through the mid-1970s, some 300,000 acres of wetlands per year were converted to other uses in the U.S. The rate was reduced to about 100,000 acres per year until the mid-1980s and now has fallen to about 30,000 acres per year (Colacicco, 1993).

Of the wetlands remaining, some 75 percent are estimated to be owned privately (EPA, 1993). This presents a policy challenge for public

resource agencies: while wetland ownership is largely private, the benefits of keeping wetlands on the landscape are largely public. The functions of wetlands—the maintenance of surface and groundwater quality, flood control, nutrient and pesticide filtering, and wildlife habitat—are all values accrued to the public at large. Recreational benefits may accrue to both private and public entities. The problem for government remains one of finding the right combination of public subsidies to private landowners and regulatory restrictions that allow both public values and private rights to be maintained and the wetlands to remain on the landscape. It is in that combination that much of the current argument is engaged.

The series of farm bills that typify and dominate U.S. agricultural policy began with the 1933 Agriculture Adjustment Act. That act was passed to prevent the total collapse of the U.S. agricultural sector. Like almost all of its successor farm bills, written approximately every 5 years since, it was written primarily by people closely associated with agriculture. As the percentage of the population engaged in agriculture has shrunk, so too has agriculture’s representation and influence in Congress. With only some 2 percent of the population involved in agriculture, the 1985 Farm Bill was written and passed with a coalition of agricultural, consumer, and environmental interests. Although some previous farm bills contained significant conservation provisions, the 1985 Food Security Act was the first farm bill to be passed by such a broad coalition of supporting groups.

With President Carter’s 1977 Executive Order, wetland protection was established as official U.S. Government policy, ending direct Federal assistance for wetland conversion for the first time since 1849. The 1985 Farm Bill was the first farm legislation to recognize the importance of wetlands and their many functions. Reactions to many of the provisions of that bill were mixed. It fundamentally changed the

relationship between farmers and the federal government: instead of only offering the “carrots” of deficiency payments, disaster payments, and other subsidies to encourage farmers to comply with desired conservation practices, for the first time the government used the “stick” of threats to cut off *all* farm program benefits if farmers violated certain provisions, including draining additional wetlands. While many farmers complied with the complicated provisions, others strongly objected and sought legal action to change the provisions.

With the passage of the Food, Agriculture, Conservation and Trade Act of 1990 (the 1990 Farm Bill), another “carrot” was added: the Wetland Reserve Program (WRP). This program authorized the voluntary restoration and protection of wetlands by agricultural landowners through the governmental purchase of permanent or long-term conservation easements of wetland acres and some surrounding uplands. The law required, however, that permanent easements receive top priority for funding. While some saw the permanent easement as a hindrance to enrollment, others felt it to be a reflection of emerging public policy to pay for conservation practices only once. Finally implemented as a pilot in 1992, the first sign-up defied the predictions of many pundits. The goal of the first sign-up was to enroll up to 50,000 total acres in nine pilot states. Initial interest sign-ups revealed farmers were willing to enroll up to nearly 10 times that many acres. Subsequent sign-ups have had similar interest, despite the permanency of the easement rules.

The spring and summer of 1993 brought severe flooding to riparian areas in 20 states. To provide relief to landowners who lost crops, livestock, and other property in those record floods, Congress created the Emergency Wetland Reserve Program (EWRP) to purchase permanent easements and create wildlife habitat in the stricken areas. Not restricted to farmed wetlands like the WRP, EWRP has brought protection to many thou-

sands of acres of riparian wetland in those 20 states. Together the WRP and EWRP have enrolled nearly 400,000 acres of land nationally since 1992. In exchange for granting a conservation easement, landowners are compensated at the rate of fair market value of the rights conveyed in the easement.

One other existing wetland restoration program is the Private Lands Program of the U. S. Fish and Wildlife Service (USFWS). This program is available to landowners, regardless of whether or not they farm, and provides both technical assistance and financial assistance to restore wetlands and other essential habitats for migratory birds and endangered species. Unlike the WRP and EWRP, the Private Lands Program is usually a 10-year sign-up and can provide up to 100 percent of the cost of restoration, but does not make any payment for land rights. In the last ten years in USFWS Region 3 (essentially the upper Midwest), this program has completed projects on more than 62,300 acres of wetlands in addition to many upland and riparian area projects (J. Munson, USFWS, pers. comm. Sept. 1996). Nationally, the program has helped some 15,000 landowners restore about 450,000 acres of wetlands and associated wetlands.

All three programs are voluntary enrollment efforts and have proven to be extremely popular, with the WRP surviving even the budget cutting ax of a conservative Congress in the 1996 Federal Agriculture Improvement and Reform Act (the 1996 Farm Bill). What has made the programs so popular? Why do landowners, especially farmers who depend on the productivity of the land to produce salable crops, enroll their land in a program that obligates both them and future owners of that land to take it permanently out of production? What have we learned from implementation of these programs that will help us shape future programs? How can we best reach landowners that might wish to restore wetlands? In short, what motivates private landowners to restore wetlands?

Some understanding of farmer reaction to the WRP was gained through a study conducted by the Soil and Water Conservation Society of America (Schnepf, 1994). Based on 19 focus groups in seven of the original nine WRP pilot states, the study elicited farmer views on wetlands and wetland issues generally, and determined farmer reactions to the WRP specifically. Schnepf reached several conclusions:

- Farmers are generally aware of at least some of the values of wetlands, though they disagree on the definition of “wetland.”
- Farmers are aware of some of the various wetland programs, especially WRP and Swampbuster. They also are aware of some other programs but have difficulty distinguishing between different agencies’ programs, whether state or federal.
- Farmers obtain their information about wetlands from many sources—both public and private—and their trust in the quality of that information generally depends upon the specific individual from whom they obtain it. There is a general cynicism about the reliability of information from “government.”
- There is inconsistency between and within states as to how farmers were made aware of the program. Though a national brochure was made available to all states, many farmers were not aware of the program. In some states, ASCS and SCS personnel made personal contacts with farmers, while in others public media were the primary mode of information distribution.
- Many farmers are concerned about the permanency of the easement arrangements and about the financial and tax implications of such easements. There was also concern about expressed that many SCS and ASCS employees could not give adequate answers to questions about such concerns.
- While some farmers indicate they would probably restore wetlands anyway, most

indicate that a WRP with no easement payments or significantly lower rates of remuneration for easements would be unacceptable.

- Stated reasons for enrollment among farmers successful in selling an easement varied widely. They include land isolation, economics, wildlife, preventing wildlife damage to crops, recreational use, and risk reduction. Schnepf suggested: “These multiple motivations should not be lost on those with responsibilities for promoting the program.”

Still, the focus group study did not give quantifiable data on how best to focus future wetland education programs, especially those promoting enrollment of land in wetland conservation programs. Human motivation is complex at best and difficult to quantify. While one might speculate that the nature of modern agriculture dictates that economics are the basis of enrollment decisions, some economists have recognized that economics alone do not explain such behavior; rather, attitudinal and other variables must contribute to our models of conservation behavior (Lynne, et. al, 1988).

A study of 245 landowners on one Ohio watershed attempted to discern the difference between those who were and were not willing to participate in wetlands mitigation projects in the region. The study found that landowners most likely to participate were part-time farmers who already owned some wetlands, had larger farms, were slightly less well-educated than the average area landowner, and valued wetlands and the watershed (Napier, et al, 1995).

The Oregon Wetlands Conservation Alliance conducted a 1995 survey of 17 landowners who had restored wetlands on their land. Fifteen of those landowners cited “to provide wildlife habitat” and “natural beauty” as the most important reasons for their wetland restoration (M. Wealey, EPA, pers. comm.). Similar results

were found in a New York survey: 11 of 17 landowners reported that “preservation of natural habitat” was the most important reason for their wetland restorations (Chan et al. 1996).

A study of Corn Belt farmers’ willingness to participate in the USDA’s Water Quality Incentive Program (WQIP) found that five factors helped predict their willingness to participate. Those farmers who had positive attitudes about governmental wetland regulations, who had more education, who tended to rent rather than own their land, who had had more contact with conservation professionals, and who had a larger percentage of their gross farm income from specialty crops were more likely to want to participate in WQIP. The authors found about 45 percent of respondents were potentially interested in the program (Kraft et al. 1996).

One study in Iowa has shown a strong interest in wildlife and habitat restoration among landowners who expressed interest in WRP (Mooney, 1996). Similarly, a pilot “Adopt a Wetland” program has helped link conservation groups with these landowners (Pate, 1996).

The study reported on in this paper sought to quantify some of these explanations with a larger sample group, using a phone survey of wetland landowners in 20 states. It includes responses from landowners who have enrolled or attempted to enroll land in the WRP, EWRP, and the USFWS Private Lands Program. This report is based on the responses to that survey.

Survey Methods

Names, addresses, and phone numbers of participants in the WRP, EWRP, and Private Lands Programs were solicited from appropriate agencies in each of the 20 participating states. Despite all assurances, it was difficult to obtain names from all programs in all states. Some agency personnel had some legal concerns over

privacy that could not be overcome. The names of some 2500 landowner participants in the states were obtained, of which more than 900 had phone numbers. We randomly selected individuals within states, generating a list of 400 landowners to call. They included individuals from programs in each of the following states: Arkansas, California, Illinois, Indiana, Iowa, Kansas, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, New York, North Carolina, Oregon, South Dakota, Tennessee, Texas, Virginia, Washington, and Wisconsin. (NOTE: We were unable to complete any calls to either North Carolina or Washington due to the apparent low enrollment in those states. Thus, the final sample included individuals from 18 states.)

Four telephone interviewers were trained in conducting a 30-question interview. (See Appendix for a copy of the interview questionnaire.) Landowners were contacted three times by mail prior to the interview, once explaining the reasons for the survey, soliciting their cooperation, and asking for an appropriate time to call; once to confirm the interview date and time; and once to remind them of the call. Up to 3 call-backs were allowed for those not answering at the appointed time. All interviewees also were sent a thank-you card following the phone call.

Out of the original 400 landowners contacted, 305 phone interviews eventually were completed. Of those 305 landowners, 177 (58 percent) self-identified as participating in the USFWS Private Lands Program, 94 (31 percent) in the Wetland Reserve Program, and 3 (1 percent) in the Emergency Wetland Reserve Program. Another 31 (10 percent) identified the program as “other” or “unknown.”

The interview consisted of 29 scripted questions that allowed for quick answers selected from several categories. Two questions were more open-ended, one soliciting their suggestions for making it easier for other people wanting to

restore wetlands on their property, and the other seeking additional comments about wetlands or restoration programs. Pre-testing indicated that interviews would last approximately 15 minutes. Most were completed within that time, but some lasted as long as 35 minutes.

Though designed on experience with previous survey research (Pease, 1992; Rankin, 1993), the results are presented here in summary form without effort to fit them into any “model” of human behavior. Other researchers have noted the difficulty in interpretation of such models, particularly when less than 25 percent of the statistical variance is commonly “explained” by the data (Lockeretz, 1990). Rather, the summary data from this survey must stand alone and are used to provide recommendations for agency personnel and others interested in conserving and restoring wetlands in the United States.

Demographics of Surveyed Landowners

Landowners in this survey own farms in the small- to medium-sized category. They report owning a mean of 724.4 acres (range: 4-60,000 acres). However, if the two landowners with the most land are excluded, the mean drops to 444 acres per landowner. More importantly, 64 percent of the landowners in this survey own 300 acres or less and only 4 percent own more than 2,000 acres (Table 1). This is consistent with another survey (Pease, 1992) that indicates that most wildlife habitat is put on the land by farmers on small- and medium-sized farms. They also tend to be mid- to long-term owners of the land, having owned it for a mean of more than 20 years. However, 40 percent have owned their land for 10 years or less (Table 2).

Table 1. Total acres of land owned by landowners restoring wetlands (N = 305).

<u>Range of acres</u>	<u>Number of landowners</u>	<u>Percent of total</u>
0-100	106	35%
101-300	89	29
301-500	39	13
501-1,000	35	11
1,001-2,000	18	6
>2,000	13	4
N.A.	5	2

Table 2. Years of ownership of land by landowners restoring wetlands (N=305).

<u>Range of years of ownership</u>	<u>Number of landowners</u>	<u>Percent of total</u>
1-10	123	40%
11-20	68	22
21-30	47	15
31-40	26	9
41-50	13	4
51-60	5	2
61-70	7	2
71-80	3	1
81+	4	1
N.A.	8	3

Landowners in this survey do not, as a rule, rent additional land for farming, a practice that is common among farmers across the Midwest. Some 75 percent of the respondents reported renting no additional land for farming. Among the 63 (21 percent) that reported renting additional land, a range of 7 to 20,000 rented acres (mean = 805 acres) was reported. Excluding the single individual who reported renting 20,000 acres, the mean number of acres rented drops to 495 acres.

This is consistent with the fact that the majority of landowners in this survey are not full-time farmers. In fact, 63 percent of the interviewees

report receiving from 0-20 percent of their income from farming. Only 11 percent self-reported themselves in the 81-100 percent of household income from farming (Table 3). While participants in the WRP program had to demonstrate that the wetlands restored had a cropping history, landowners in the EWRP and Private Lands programs did not. These results reflect those requirements. As might be expected, 60 percent of those interviewed reported working off the farm in another job and 47 percent reported that their spouses also did.

Table 3. Percent of total household income from farming among landowners restoring wetlands (N=305).

<u>Percent of income attributable to farming</u>	<u>Number of landowners</u>	<u>Percent of total</u>
0 - 20%	193	63%
21 - 40%	23	8
41 - 60%	22	7
61 - 80%	15	5
81 - 100%	35	11
N.A.	17	6

Overall, this group is a highly educated group of landowners. Approximately 77 percent of the landowners reported having completed at least some college. Sixty-five (21 percent) reported having a graduate degree (Table 4). These percentages are much higher than those of the general populace in the states interviewed. This educational level may be indicative of a greater interest in wildlife as reported in previous research (Pease, 1992) and is contrary to the findings of the Ohio study (Napier, et al., 1995).

Table 4. Educational levels of landowners restoring wetlands (N=305).

<u>Highest level of education completed</u>	<u>Number of landowners</u>	<u>Percent of total</u>
≤8th grade	5	2%
≤high school	56	18
some college	79	26
college degree	92	30
graduate degree	65	21
no answer	8	3

Some pundits have criticized the WRP as a program that serves basically as retirement income for those leaving farming. Data from the 1992 WRP sign-up lend some credence to that argument. About 72 percent of those enrolled were age 50 or older at the time of enrollment; no individual in the under 30-years-old category (Rankin, 1993). That is not true, however, of landowners in general who restore wetlands. Nearly three-quarters of the individuals surveyed in this research were in the prime income-earning years of 20-60 years of age and only 25 percent were above 60 years of age (Table 5). Wetland restorers appear to cut across all ages.

Table 5. Age ranges of landowners restoring wetlands (N=305).

<u>Age range</u>	<u>Number of landowners</u>	<u>Percent of total</u>
20-30 yrs.	2	1%
31-40	54	18
41-50	93	30
51-60	70	23
61-70	53	17
71-80	24	8
80+	1	<1
N.A.	8	3

Characteristics of Wetlands Restored or Enhanced

Landowners in this survey reported a mean of 71.3 acres of wetland restored on their property (range 0.25 to 2,000 acres). Most restorations, however, are relatively small with 40 percent in the 0.25 - 5 acre range and only 20 percent above 50 acres. Just as important from a wild-life standpoint, however, are the upland acres restored adjacent to the wetland for nesting and other cover needs. Forty-four percent of landowners reported that no adjacent upland was being restored or enhanced (Table 6). Most of the restorations are taking place on agricultural land, with more than one-half of the landowners reporting that the wetland was formerly producing row-crops (Table 7). Seventy percent of landowners have restored shallow-water wetlands (marshes, potholes, etc.) with the remaining landowners restoring riparian wetlands. Accordingly, 52 percent reported emergent vegetation as the dominant vegetative cover on their wetlands, while another 28 percent reported “open water,” and 10 percent reported “trees.”

Table 6. Size range of wetlands and uplands restored by landowners in a national survey (N=305).

Size range <u>in acres</u>	Number of wetland owners <i>(percent)</i>	Number of upland owners <i>(percent)</i>
0	2 (<1)	134 (44)
.25 - 5	123 (40)	37 (12)
>5 - 15	67 (22)	54 (18)
>15 - 25	22 (7)	16 (5)
>25 - 50	33 (11)	23 (8)
>50 - 100	20 (7)	14 (5)
>100 - 500	23 (8)	9 (3)
>500	8 (3)	5 (2)
Unknown*	7 (2)	13 (4)

*Some wetlands and uplands had not yet been restored.

Table 7. Former uses of land on which wetlands were restored (N=305).

Use prior to <u>restoration</u>	Number of landowners*	Percent of total
row-crop production	166	54%
pasture area	52	17
woodland area	23	8
set-aside acres	20	7
hay production	18	6
other	52	17

*Numbers add to more than 305 because some land had more than one use.

Reasons for Restoring Wetlands

Wildlife play an extremely important role in attracting landowners to restore wetlands. Some 84 percent listed “to provide habitat for wildlife” as being “extremely important” in their decision to restore a wetland. In fact, the top four reasons were all altruistic, having to do with wildlife, future generations, or natural beauty (Table 8). When asked to describe changes since restoration that they viewed as positive changes, more than 70 percent volunteered that various wildlife were now present (or present in greater numbers) that had not been present prior to restoration of the wetland. Twenty-seven percent of the landowners gave no answer to this question. When asked to describe changes since restoration that they viewed as negative, 11 percent described various wildlife problems while 75 percent said “none.”

On the other hand, while financial assistance was extremely important to about half the landowners, only 10 percent reported financial profitability of the restoration as being extremely important in their decision to proceed with the restoration (Table 8). While nearly 90 percent of the landowners reported receiving financial assistance for their restoration, the importance of this was highly variable. In fact, when asked whether they would have restored the wetland had no financial assistance been

Table 8. Relative importance of landowners' reasons for restoring wetlands (N=305).

<u>Reason</u>	<u>Number reporting not important</u>	<u>Number reporting somewhat important</u>	<u>Number reporting extremely important</u>
to provide habitat for wildlife	4	43	257
provide habitat for game species of wildlife	36	61	205
wanted to leave something wild for future generations	37	62	201
natural beauty	39	80	184
financial help was available to do it	58	96	149
to restore some of the functions of wetlands, like to clean run-off water	97	100	106
concern over loss of wetlands in this region	114	92	97
land wasn't usable for crops anyway	141	70	92
educational purposes	143	93	67
good public relations for me	177	81	43
financially profitable	216	54	32

available, they split evenly. Many of those who said “yes” to this question also added, “I just would have done it more slowly.” That is not to say they didn't use the available tax-supported assistance: 53 percent reported that all of the cost of the restoration was paid from public, tax-supported sources. Only 5 percent reported getting no financial assistance (Table 9). When asked whether the financial value of their land had been enhanced by the restoration, surveyed landowners once again split evenly on the issue. Many hedged with “it depends on who the buyer is” or said “to me, yes; to others, probably not.”

Table 9. Proportion of restoration costs paid from public sources as reported by landowners restoring wetlands (N=305).

<u>Percent of restoration cost reported paid by public (tax) programs</u>	<u>Number of landowners</u>
None	14
1 - 10%	5
11 - 25%	5
26 - 50%	29
51 - 75%	36
76 - 96%	20
100%	161
N.A.	35

Problems Encountered

Satisfaction with the process and with the agencies doing the restoration was generally quite high. When asked about the kinds of obstacles or problems encountered during the project, 42 percent of the interviewed landowners said “none.” While 21 percent listed some technical problems (leaks, etc.), most problems listed were minimal (Table 10). In fact, most complaints were what might be termed misunderstandings: “the water isn’t as deep as I’d like” or “it only has water in it in the spring and early summer.” Many wanted agency personnel to come back periodically to check on the results of their work. Landowners in this survey appear to have a good deal of pride in their wetland and want to let agency people know about this satisfaction and to be able to ask them some questions about species of plants and animals seen, management of the wetland, or other concerns. And, despite any problems encountered, 93 percent of interviewed landowners said they would or have recommended a similar restoration project to their neighbors. Only 3 percent said they would not.

Table 10. Problems reported by landowners during the process of wetland restoration (N=305).

<u>Problem encountered</u>	Number (<i>percent</i>) of landowners reporting*
none	130 (42)
technical problems	64 (21)
paperwork hassles	35 (11)
neighbor’s objections	18 (6)
state or federal permit requirements	17 (6)
financial problems	13 (4)
local land use regulations	10 (3)
other	74 (24)

*Numbers add to more than 100% because landowners may have encountered more than one problem.

Beliefs About Why Others Do NOT Restore Wetlands

Because we only interviewed landowners who had successfully restored wetlands, we were interested in their opinions as to why other landowners do not get involved in wetland restoration. A professed “dislike of government programs” was the most often-stated reason these landowners had heard, similar to the findings of Kraft et al. (1996). Fifty-two percent of them believed there was a perception by other landowners that they could not afford to sacrifice the farmground and 50 percent believed that many other landowners were not aware of the programs. Schnepf (1994) found similar results in the focus groups he conducted with WRP farmers: many felt that other non-participating farmers simply were not aware of the programs. In fact, when asked how they found out about the restoration program, only 15 percent of the landowners in this study reported reading about it in the newspaper, and another 15 percent picked up a brochure about it at a county office. Publicity does appear to be a barrier to participation. The functioning of the programs themselves does not appear to these landowners to be a serious impediment: fewer than one-third mentioned such barriers as paperwork, local agency helpfulness, or time to complete enrollment (Table 11).

In fact, when asked to provide open-ended comments regarding these wetland restoration programs, most of the comments received were highly positive. Twenty percent of the interviewees volunteered that more programs like this were needed, that there was a need to get more people involved with better publicity and more education. Only 17 comments deemed negative to these programs were heard, mostly involving “anti-government” types of comments. Agency personnel—Fish and Wildlife Service and NRCS, in particular—often received high praise from these landowners for their professionalism and hard work.

Table 11. Beliefs of landowners about why other landowners do not restore wetlands (N=305).

<u>Stated reason</u>	<u>Number/(percent) of landowners saying they've heard this from other landowners*</u>
dislike government programs	179/58
can't afford to sacrifice the farmground	159/52
just not interested in wetlands	155/51
unaware of these programs	154/50
too many restrictions on the use of the ground	125/41
not wildlife oriented	113/37
not provided with enough information to make decisions	102/33
potential payments not enough	99/32
no wetland areas to restore	88/29
dislike tax liability	71/24
paperwork too complex	88/29
local agencies not helpful	52/17
not enough time to complete enrollment	21/7

**Numbers add to more than 100% because landowners may have reported more than one reason.*

The importance of the work of local conservation professionals cannot be over-emphasized: 30 percent of the landowners reported hearing about the wetland restoration program from a local conservation official. One-to-one contact was the single most important method of gaining knowledge about the program.

Youth Experiences of Landowners With Wildlife and Wetlands

Other research has indicated the correlation of youthful outdoor activities with adult attitudes and behaviors that are positive toward wildlife (Pease, 1992). Accordingly, we asked about the outdoor activities that these landowners participated in as young people. As in previous research, these landowners participated heavily in outdoor activities as youth. Fishing, hunting, having a “wild place,” and reading outdoor-related books and stories were favorite youthful activities of more than 71 percent of these landowners. Despite an apparent lack of en-

couragement for such activities by their teachers, these activities were likely formative in attitudes and behaviors that produced adults who restore wetlands and value wildlife and wild places (Table 12). Though all now live on farms or in rural areas, only 57 percent of these landowners reported growing up in such areas. In fact, 25 percent reported growing up in towns or cities of more than 2,500 citizens. They still found opportunities to participate in many of these outdoor activities.

Conclusions/Recommendations

These interviews with 305 landowners participating in wetland restoration programs of the past 10 years have provided much insight into the strengths and weaknesses of these programs. The landowners were overwhelmingly positive—some effusively so—about these programs. While some had complaints about a wetland that wasn't quite what they wanted or a contractor who misread the blueprints, we were quite surprised at how few

Table 12. Youthful outdoor activities of landowners restoring wetlands (N=305).

<u>Activity</u>	<u>Number (percent) of landowners reporting participating as a child</u>
fished in a local pond, stream, or river	246 (81)
enjoyed reading nature/outdoor-related books and stories	243 (80)
had a favorite ‘wild place’ where I would go to be alone	220 (72)
hunted with family and/or friends	218 (71)
helped with farm work with livestock	193 (63)
went canoeing and boating	188 (62)
had a wetland on or near our property that I visited regularly	161 (53)
put out food for wild animals	138 (45)
went horseback riding	135 (44)
belonged to Scouts	134 (44)
belonged to 4H, FFA, or some other agriculture-related club	133 (44)
attended a camp or workshop to learn about nature and conservation	106 (35)
had teachers who encouraged interest in the outdoors	61 (20)

such complaints there were. Many landowners indicated that we should “let Congress know” not to cut such programs but, rather, to put more money into them.

That is not to say the programs cannot be improved. Given the results of these interviews, we make several recommendations to enhance the quality of and participation in these wetland restoration programs. These recommendations, we hope, will serve to improve and expand the availability of already good programs—to “tweak” their functioning rather than to encourage a paradigm shift.

- 1. Education.** Many of the complaints we heard resulted from a misunderstanding by the landowners of what they were getting. Most often, “wetland” apparently meant “pond.” An often-heard comment was “I only wish it were deeper.” Agency personnel have a responsibility to use clear, jargon-free speech when working with landowners, making certain that they understand exactly what is being proposed.

Doing so ensures a satisfied customer that will not only continue to cooperate but will spread the good word about the agency. As biologists, we have a “teachable moment” to communicate to landowners the value of shallow-water, even temporary, wetlands to migratory birds and other wildlife.

Materials and inservice training that will help agency personnel to better communicate these ideas should be developed.

- 2. Personal contact.** While some of the interviewed landowners indicated they had heard about the program through brochures or newspaper articles, the dominant form of information came from direct contact with conservation personnel. The investment of time of conservation professionals in personal contact with the public must be recognized as an important and, in fact, critical part of being an effective biologist. Today, biologists spend much more time managing people than managing other natural resources. Though this may be an “Information Age,” people still

prefer personal contact with other human beings to receive information. Several studies have shown that personal contact with conservation professionals is critical to obtaining and maintaining positive wildlife practices on private land. Yet, this is the part of the job that most conservation professionals receive the least amount of training. *Materials and both inservice and pre-service training should be developed to assist conservation professionals in learning the skills of public relations and human resource management.*

- 3. Follow-up.** Another often-heard complaint from landowners was the lack of follow-up by agency personnel once the wetland restoration was done. These people are interested in wetlands and have questions they want answered. Some, in fact, peppered the interviewers with questions about beaver and muskrat management, for example, and with queries about bird and plant identification. We have an interested public; failure to serve that public would be a disservice both to them and to the future of wetland resources. The more education they have regarding their wetland, the less chance it will be torn up and put back into crop land. We recognize, however, that resource agency personnel are fully employed and are frequently committed to other restorations, and are unable to find the time to do such follow-up. Therefore, *we recommend that the U.S. Fish and Wildlife Service and Natural Resource Conservation Service develop ways to partner with other resource agencies (county conservation boards, forest preserve districts, Extension, etc.) and non-governmental organizations (local wildlife groups, conservation education associations, etc.) to provide annual follow-up with cooperat-*

ing landowners. Memoranda of understanding should be developed and, where possible, funds provided to implement such follow-up programs.

- 4. Advertising.** In addition to the recommendation for personal contact above, many landowners may be contacted by other means. A national brochure for the WRP program was prepared in 1992 and 1994 and was the dominant means by which the program was advertised. This study indicates, however, that many rural landowners interested in restoring wetlands are not traditional farmers: while 57 percent of them grew up on farms or in rural areas, 43 percent did not. Only a third of the landowners in this study obtain more than 80 percent of their household income from farming. It is less likely, therefore, that a large number of these landowners ever enter the NRCS office or the Extension office to obtain the brochure. We must find ways to publicize these programs that will reach these people and capitalize on their interest in wildlife. *We recommend that publicity monies be set aside to seek innovative ways to contact rural landowners that may have an interest in restoring wetlands but are not traditional farmers. Articles might be written, packets developed, and ads purchased in the magazines of state conservation agencies (DNR, etc.), in "Country Home" or other magazines that rural, non-farmer landowners read.*
- 5. Investment in youth.** This study and many others indicate that the values of adults are shaped in their youth. If we are to have wild places like wetlands, woodlands, and prairies tomorrow, today's youth must experience those places firsthand. It is in the best interest of resource agencies and like-minded NGOs to invest

in youth programs, to involve agency personnel in the environmental education of youth, and to make certain that they have positive, first-hand experiences with natural resources. That investment today pays off in wetlands and other wild places tomorrow. *We recommend that the U.S. Fish and Wildlife Service, NRCS, and other natural resource agencies continue*

to expand their investment in the environmental education of today's youth. A commitment of personnel, facilities, and funds as part of a comprehensive plan of environmental education would recognize the importance of education to the continued existence of the resources the agencies manage.

Selected Quotes from Interviewees

“If the public wants to restore the land, they have to be willing to pay for it.”

“I’m really mad at government, but if the government gets out of it, it will be less efficient.”

“This wetland is going to enhance my whole farm.”

“I am afraid that a wetland will trap my chemicals on my land.”

“One agency [restoring wetlands] would probably be more efficient.”

“We saw immediate results! It’s one of the most rewarding things we’ve done.”

“There are a lot of people behind clean air and clean water. I just hope Congress doesn’t cut it all out.”

“The process of getting accepted was incredibly slow.”

“It’s an excellent learning experience for our urban students.”

“I hope Congress shuts it down. It’s not a pro-farm program.”

“I never should have cleared the land in the first place. This [wetland] is what it was meant to do.”

“People thought I was nuts flooding land that developers were paying top dollar for!”

“While my neighbors are farming everything they have, I am trying to give something back to wildlife.”

“We’ve got to leave something for the kids.”

“I feel good about it. This restoration makes me feel like I’m part of a larger scheme.”

“Where there is water, there is wealth.”

“Returning land to its original state is the purest form of stewardship.”

“I don’t normally support government programs, but if we are going to spend it, this is the way to do it.”

“Profit is so small in farming anyway, a guy may as well put land into these programs.”

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Appendix

Phone Questionnaire

Date Completed: _____

Thanks Card sent: _____

Interviewer: _____

Interviewee (to be deleted from record): _____ Code #: _____

“I want to thank you for being willing to talk with me about your wetland restoration. I want to assure you, once again, that all of the information you give me is confidential and will never in any way be associated with you by name. Your name will be deleted from our file. Our interest here is only in helping us understand why people restore wetlands and how we can improve future programs. If you feel uncomfortable with a question at any time or don’t understand it, please let me know that you wish to have it explained or to skip the question.”

“First, I need to ask you some questions about your wetland.”

1. What program have you been participating in to restore wetlands on your land?

- _____ EWRP (Emergency Wetland Reserve Program)
- _____ WRP (Wetland Reserve Program)
- _____ Private Lands Program of Fish and Wildlife Service
- _____ Other (detail): _____

2. How did you find out about the restoration program?

- _____ neighbor told me about it
- _____ local conservation official told me about it
- _____ read about it in the newspaper
- _____ picked up a brochure about it at a county office
- _____ heard about it on the radio
- _____ saw it on TV
- _____ attended a meeting where it was discussed
- _____ other (detail): _____

3. What type of wetland(s) are/have you restored (check all that apply):

- _____ marsh/emergent plant/pothole/shallow-water type wetland
- _____ riparian/riverine/bottomland area/riveredge
- _____ brackish water/marine-edge
- _____ other (details): _____

4. What former use(s) has this wetland served, say, within the five years prior to restoration (check all that apply):

- | | |
|---------------------------|-----------------------|
| _____ row-crop production | _____ set-aside acres |
| _____ pasture area | _____ hay production |
| _____ woodland area | _____ other: _____ |

5. About how many acres of wetland/riparian area have been/will be restored? _____ acres
6. **[skip 6 and 7 if riparian area]** About how many acres of adjacent upland have also been/will be restored in association with the wetland? _____ acres
7. What is/will be the average width of the upland vegetation buffer around the wetland?
 no buffer ≤ 50 feet 50-100 feet > 100 feet
8. When was the restoration done? 0-2 years ago 2-4 years ago > 4 years ago
9. What is/will be the dominant vegetation cover of the wetland or riparian area:
 - open water
 - emergents (cattails, bulrushes, grasses, sedges, etc.)
 - scrub-shrub (woody vegetation mostly under 15 feet tall)
 - trees (woody vegetation > 15 feet tall)

[Skip next two questions if restoration is not yet done.]

10. Since restoration (if applicable) what changes have occurred that you view as positive changes?

11. Since restoration (if applicable) what changes have occurred that you view as negative changes?

12. People have many different reasons for restoring wetlands. Please tell the importance of each of the following reasons, whether it was not important (1), somewhat important (2), or extremely important (3) to you in your decision to restore this wetland.
 - to provide habitat for wildlife
 - concern over loss of wetlands in this region
 - financially profitable
 - land wasn't usable for crops anyway
 - financial help was available to do it
 - educational purposes
 - to restore some of the functions of wetlands, like to clean run-off water
 - provide habitat for game species of wildlife
 - natural beauty
 - good public relations for me
 - wanted to leave something wild for future generations
 - other (detail): _____

13. Did/will you receive financial assistance for the restoration work? Yes _____ No _____

14. About what percent of the total cost of restoring the wetland or riparian area on your property came from public (tax supported) sources? _____%

15. About what percent of the total cost of restoration did/will you pay for from your own pocket?
 _____%
16. Would you have restored the wetland or riparian area if **no** financial assistance had been available? Yes____ No____
17. Do you believe that the financial value of your land has been increased by restoring the wetland or riparian area? Yes____ No____
18. What kinds of obstacles or problems did you run into during the project? (Check all that apply)
- _____ technical problems
 - _____ paperwork hassles
 - _____ neighbor's objections
 - _____ state or federal permit requirements
 - _____ local land use regulations
 - _____ financial problems
 - _____ other (detail): _____
 - _____ none
19. What suggestions do you have that would make it easier for others wanting to restore wetlands on their property?
20. Would you/have you recommended a similar restoration project to your neighbors? Yes____
 No____
21. "Many people like you are restoring parts of their land to wetlands. Many others are not. We're interested in your opinions as to why farmers you know have **not** done restorations. I'm going to read you a list of possible reasons. Let me know if that is a reason you have heard" (check all that apply):
- _____ no wetland areas to restore
 - _____ the paperwork too complex
 - _____ just not interested in wetlands
 - _____ dislike government programs
 - _____ not wildlife oriented
 - _____ unaware of these programs
 - _____ not provided with enough information to make decisions
 - _____ potential payments not enough
 - _____ local agencies not helpful
 - _____ can't afford to sacrifice the farmground
 - _____ too many restrictions on the use of the ground
 - _____ not enough time to complete enrollment
 - _____ dislike tax liability
 - _____ other (detail): _____

“We are interested in childhood activities that may influence adult interests. So I have a couple of questions about your childhood.”

22. Which best describes the surroundings in which you spent the majority of your childhood:

- farm or rural area
- small town of 2,500 or fewer citizens
- town or city of greater than 2,500 citizens

23. Which of the following activities did you **often** participate in as a child (check all that apply):

- fished in a local pond, stream or river
- hunted with family and/or friends
- put out food for wildlife
- enjoyed reading nature/outdoor-related books and stories
- went canoeing and boating
- had a favorite “wild place” where you would go to be alone
- had teachers who encouraged interest in the outdoors
- helped with livestock
- belonged to 4-H, FFA or some other agriculture-related club
- belonged to Scouts
- went horseback riding
- attended a camp or workshop to learn about nature and conservation
- had a wetland on your property that you visited regularly

“Finally, I need to ask some information about you and your farm.”

24. What is the total number of acres of land you own: _____ acres

25. About how long have you owned this land (years): _____ years

26. What is the total number of additional acres of land you rent for farming: _____ acres

27. About what percent of your total household income is from farming (circle 1):

0-20% 21-40% 41-60% 61-80% 81-100%

28. Do you or your spouse work in another job off the farm as well?

Operator: Yes No

Spouse: Yes No Is no spouse

29. What is the highest level of education you completed (circle 1):

≤ 8th grade ≤ high school some college college degree graduate degree(s)

30. What is your approximate age (circle 1):

20-30 31-40 41-50 51-60 61-70 71-80 80+

31. “Are there any other comments you’d like to make about your wetland or about the restoration program?” (Paraphrase comment or quote them below. If they specifically ask for a copy of the results, copy down a complete name and address.)

“I want to thank you for your time and candid answers to this interview. You have been very helpful. I hope that it has been pleasant for you also. Please know that you are contributing to the future of these programs. Again, thanks very much!”

The National Wetland Trust For wetlands publications, newsletters and related links. LERNZ Lake Ecosystem Restoration New Zealand Lake restoration research. Wonderful wetlands - Forest & Bird Learn why wetlands are one of the most valuable ecosystems. Regional information. Restoring our biodiversity - Auckland Regional Council See the Wetlands overview and Wetlands restoration documents for information on planting for wetlands and why they are important. Restoring Waikato's indigenous biodiversity - Waikato Biodiversity Forum Find guides to restoring swamps and bogs. Wetlands - Bay of Plenty Region Includes the Wetland Restoration Guide on how to preserve and recreate our wildlife water wonderlands in the Bay of Plenty. No results. In the shadow of Australia's Grampians National Park lies Walker Swamp, a once-thriving wetland that was artificially drained and farmed for over a century. But it is now welcoming new life once more, after a huge restoration project. Its revival is one "message of hope" amid so much grim environmental news, ecologists tell the BBC. Video by Isabelle Rodd. A phone survey of 305 participants in these wetland restoration programs revealed that wildlife play an extremely important role in landowner decisions to restore wetlands. Eighty-four percent of the participants listed "to provide habitat for wildlife" as being "extremely important" in their restoration decision. In fact, the top four reasons were all altruistic in nature, having to do with wildlife, natural beauty, and future generations. Conversely, only 10% listed "financially profitable" as an "extremely important" influence on their decision. Other results of the survey revealed that, wh