

**Awareness by New Hampshire Anglers and
Hunters of Resource Management Agencies,
Programs and Funding Sources**

**Survey of 1999 Hunting and
Fishing License Holders**

Prepared for

New Hampshire Fish and Game Department
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INTRODUCTION

In 1996 the U.S. Fish and Wildlife Service funded a survey to determine how knowledgeable New Hampshire anglers and hunters were about various resource management agencies (Loomis, 1996). More specifically, the study investigated their general awareness of agencies, how much they knew about agency responsibilities and activities, and their funding sources. Utilizing results from that research, New Hampshire Fish and Game Department implemented an outreach program. In an effort to determine the effectiveness of their outreach program, New Hampshire Fish and Game funded this replication study.

Specific objectives of this research were to:

1. identify angler and hunter beliefs concerning activities New Hampshire Fish and Game may or may not be involved in,
2. evaluate angler and hunter beliefs concerning the sources and distribution of revenue to New Hampshire Fish and Game's budget,
3. identify angler and hunter awareness and perception of various federal and state resource management agencies, and private conservation organizations,
4. evaluate angler and hunter awareness of the Federal Aid Program and its funding sources, and
5. identify the degree to which anglers and hunters make use of various sources of information concerning fishing, hunting and boating.

Methods

Survey Sampling

The study population was New Hampshire anglers and hunters who purchased a license in 1999, the most recent year for which a complete license record could be obtained. There were five different license types that anglers or hunters could have purchased in 1999: fishing license, combination license (good for fishing and hunting), regular hunting-only license, archery license, and muzzleloader license. Sample sizes were based on a desire to have responses from approximately 1,000 usable questionnaires available for data analyses. Assuming an overall response rate of 60-65%, and a mortality of approximately 10% of the original sample, an initial sample size of N=1,750 was determined to be necessary. An important goal in pulling the sample was that the number of anglers and hunters that entered into the sample be in approximate proportion to the type and total number of licenses sold. A second goal was to have similar numbers of anglers and hunters in the final sample. The distribution of the sample according to license type is shown below (Table 1).

Table 1. Distribution of sample according to license type.

<u>License type</u>	<u>Number of licenses sold in 1999</u>	<u>Number of licenses pulled for sample</u>
Fishing	75,728	600
Combination (fishing and hunting)	34,270	650
Regular Hunting	7,440	100
Archery	17,135	200
Muzzleloader	<u>16,638</u>	<u>200</u>
Total	151,211	1,750

Survey Instrument

The questionnaire was designed with cooperation from the USFWS (Region 5) Division of Federal Aid and the New Hampshire Fish and Game Department (Appendix A). Items on the survey instrument included age, gender and frequency and history of participation in fishing, hunting and boating. Anglers, hunters and boaters were asked to indicate the degree to which they make use of various sources of information as it relates to their sport, whether or not they believed the New Hampshire Fish and Game Department was involved in various activities relating to their sport, and if they were aware of the existence of various organizations. In addition, all respondents were asked about their awareness of various USFWS Federal Aid programs, and the funding sources that they believe contribute to them.

Survey Implementation

Data for this survey were collected through a mail questionnaire which was sent to a sample of New Hampshire licensed anglers and hunters during February and March 2001. The procedure for conducting the survey was based on guidelines developed by Dillman (1978). This procedure, as further refined, involved an initial survey mailing, a postcard reminder and two follow-up survey mailings to those who had not yet responded. Included in the first mailing was the questionnaire, a cover letter describing the intent of the survey, and a stamped self-addressed business-reply envelope. To improve the response rate, all envelopes were hand addressed and hand posted, and cover letters were all hand-signed. Using this mail survey approach we obtained an overall response rate of 55.4% (Table 2).

Table 2. Status of mail questionnaire response.

	<u>n</u>	<u>%</u>
Initial sample	1,750	---
Mortality	181	
Non-deliverable (156)		---
Not usable upon return (15)		
Effective sample	1,569	100.0
Non-response	699	44.6
Usable returned surveys	870	55.4

RESULTS

Anglers

Anglers ranged in age from 17 years to 74 years (Table 3). The average age was 44, with most anglers being between 35 and 54 years of age. The large majority of anglers (91%) were male. Of the licensed angler and hunters surveyed, 92% indicated that they fished (Table 4). Their average frequency of participation during the previous 12 months was 22.6 days, with a high of 250 days and a low of zero days. On average, those surveyed had been fishing for about 32 years.

Table 3. Distribution of anglers according to age and gender.

Age	n	%	Gender			
16-24	51	6.5	Mean	43.65		
25-34	126	16.0	Minimum	17	Male	715 91.1
35-44	242	30.7	Maximum	74	Female	70 8.9
45-54	224	28.4	SD	11.74		785 100.0
55-64	115	14.6	N	784		
65+	31	3.9				
Total	789	100.0				

New Hampshire anglers made use of a variety of sources to obtain information about sport fishing (Table 5). However, they did not use all sources equally. The source they made most use of was the New Hampshire fishing regulations, followed by the comments and opinions of fellow anglers, and bait and tackle shops. A second set of sources, used less often, contains those characterized by the media, both written and visual. Anglers made little to some use of information sources such as newspaper and magazine articles, New Hampshire Fish and Game publications and television shows. Information sources anglers made little to no use of included sporting shows, fishing

Table 4. Proportion of licensed anglers and hunters who fish, and their frequency of participation in the sport of freshwater fishing.

		<u>n</u>	<u>%</u>
Distribution of anglers/non-anglers	Yes	789	92.2
	No	<u>67</u>	<u>7.8</u>
		856	100.0
Days fished freshwater during previous 12 months.....	Minimum	0	
	Maximum	250	
	Mean	22.6	
	SD	27.4	
Years of experience fishing	Minimum	1	
	Maximum	60	
	Mean	31.6	
	SD	13.8	

clubs, and Internet related sources. Less than one-third of anglers (31%) indicated that they had ever accessed the New Hampshire Fish and Game Department’s website.

The New Hampshire Fish and Game Department is involved in a number of fishing-related activities. One objective of this survey was to determine the extent to which anglers were aware of these activities, or believed the agency was involved with these activities. Results show that over 90% of New Hampshire anglers know or believe the agency is involved in fish stocking, law enforcement, research, and boater safety programs (Table 6). A large proportion of surveyed anglers also believe the agency is involved in aquatic resource education (87%), building boat ramps (79%), and purchasing land for fish and wildlife habitat (75%). Significantly fewer anglers believed the agency raised fish for commercial sale (22%) or sold fishing equipment to the public (5%). In general, the results indicate that New Hampshire anglers are aware of those activities that the agency is involved in.

Almost all New Hampshire anglers were aware of the various state and federal land management agencies (Table 7). Over 99% knew of the New Hampshire Fish and Game Department, 98% were aware of the U.S. Forest Service, 97% of the National Park Service, and 93% of the U.S. Fish and Wildlife Service. The majority of anglers were

Table 5. Extent to which anglers make use of various sources of information about freshwater sport fishing in New Hampshire.

	Mean ^a	Minimum	Maximum	SD	n
New Hampshire fishing regulations.....	3.70	1.00	5.00	1.21	775
Comments and opinions of other anglers	3.43	1.00	5.00	1.07	782
Bait and tackle shops.....	2.96	1.00	5.00	1.17	767
Outdoor writer columns / newspaper articles	2.67	1.00	5.00	1.11	771
New Hampshire Fish and Game Department publications.....	2.64	1.00	5.00	1.21	769
Magazine Articles	2.58	1.00	5.00	1.13	765
Television shows.....	2.31	1.00	5.00	1.15	772
New Hampshire Fish and Game Department employees.....	2.19	1.00	5.00	1.24	764
Advertisements for fishing equipment and supplies	2.03	1.00	5.00	1.01	767
Sporting good trade shows	1.84	1.00	5.00	1.06	765
Fishing clubs or organizations	1.81	1.00	5.00	1.08	762
The Internet.....	1.73	1.00	5.00	1.06	771
New Hampshire Fish and Game Department website.....	1.66	1.00	5.00	1.06	772
Email correspondence	1.34	1.00	5.00	0.70	773

^a Measured on a five point scale, with 1=No use, 2=Little use, 3=Some use, 4=Moderate use, 5=A lot of use.

also aware of two national angling organizations, although to a much lesser extent than of the federal agencies. Approximately 83% were aware of B.A.S.S. (Bass Anglers Sportsmen Society), and 68% were aware of Trout Unlimited. Less than half of the anglers surveyed were aware of the American Sportfishing Association (48%), The Nature Conservancy (41%), or the USFWS Division of Federal Aid (31%). Only about 7% were aware of or had ever heard of the Future Fishermen Foundation.

Table 6. Angler awareness of New Hampshire Fish and Game Department involvement in fishing-related activities.

		<u>n</u>	<u>%</u>
Stocking fish in streams and lakes.....	Yes	778	99.2
	No	6	0.8
		<u>884</u>	<u>100.0</u>
Law enforcement.....	Yes	775	98.7
	No	10	1.3
		<u>885</u>	<u>100.0</u>
Research on fish and fish habitat.....	Yes	757	96.6
	No	27	3.4
		<u>784</u>	<u>100.0</u>
Boating safety programs.....	Yes	717	92.2
	No	61	7.8
		<u>778</u>	<u>100.0</u>
Aquatic resource education.....	Yes	663	86.6
	No	103	13.4
		<u>766</u>	<u>100.0</u>
Building public boat ramps.....	Yes	608	78.8
	No	164	21.2
		<u>772</u>	<u>100.0</u>
Purchasing land for fish and wildlife habitat.....	Yes	572	74.5
	No	196	25.5
		<u>768</u>	<u>100.0</u>
Raising fish for commercial sale.....	Yes	169	22.0
	No	598	78.0
		<u>767</u>	<u>100.0</u>
Selling fishing equipment to the public.....	Yes	41	5.4
	No	724	94.6
		<u>765</u>	<u>100.0</u>

In addition to asking if anglers were aware of, or had ever heard of, the above organizations, they were asked to indicate how positively or negatively they perceived them (Table 7). All organizations were viewed positively by anglers. New Hampshire Fish and Game Department, which received the highest angler awareness rating, was also perceived most positively among all organizations. Interestingly, Future Fishermen Foundation, which was by far the least recognizable organization, was perceived second most positive among those anglers aware of this organization.

Table 7. Angler awareness and perception of various organizations.

		<u>Awareness</u>		<u>Perception</u>	
		<u>n</u>	<u>%</u>	<u>of Organization</u>	
New Hampshire Fish and Game Dept.	Yes	773	99.5	Mean	1.23 ^a
	No	4	0.5	SD	0.50
U.S. Forest Service.....	Yes	762	98.3	Mean	1.39
	No	13	1.7	SD	0.60
National Park Service	Yes	751	97.0	Mean	1.43
	No	23	3.0	SD	0.62
U.S. Fish and Wildlife Service	Yes	723	93.2	Mean	1.36
	No	53	6.8	SD	0.54
B.A.S.S. (Bass Anglers Sportsmen Society)..	Yes	637	83.4	Mean	1.56
	No	127	16.6	SD	0.57
Trout Unlimited.....	Yes	527	68.3	Mean	1.34
	No	245	31.7	SD	0.50
American Sportfishing Association	Yes	367	48.2	Mean	1.62
	No	394	51.8	SD	0.50
The Nature Conservancy	Yes	311	41.0	Mean	1.64
	No	448	59.0	SD	0.64
USFWS, Division of Federal Aid.....	Yes	238	31.2	Mean	1.52
	No	525	68.8	SD	0.58
Future Fishermen Foundation	Yes	58	7.6	Mean	1.26
	No	703	92.4	SD	0.44

^a Measured on a three point scale, with 1=Positive, 2=Neutral, 3=Negative.

Hunters

Similar to anglers, the average age of hunters was 44, with the majority also being between 35 and 54 years of age (Table 8). The large majority of hunters were male (96%). Approximately 78% of the licensed angler and hunters surveyed indicated that they hunted (Table 9). Their average frequency of participation during the previous 12 months was 24.4 days, with a high of 182 days and a low of zero days. Surveyed hunters had been hunting for almost 28 years, on average.

New Hampshire hunters, like anglers, made use of a variety of sources to obtain information about hunting (Table 10). The two sources hunters make most use of are New Hampshire hunting regulations and the comments and opinions of fellow hunters.

Table 8. Distribution of hunters according to age and gender.

Age	n	%	Gender					
			Mean	Minimum	Maximum	SD	N	n
16-24	36	5.4	43.67	17	71	11.43	667	100.0
25-34	117	17.4					642	96.0
35-44	207	30.8					27	4.0
45-54	189	28.1						
55-64	99	14.7						
65+	25	3.7						
Total								

A second tier of sources for hunters, similar to those used by anglers, includes magazine and newspaper articles, New Hampshire Fish and Game publications, and sporting good shops. Information sources hunters made little to no use of include sporting good trade shows and Internet related sources. Similar to anglers, only about one-third of hunters (34%) indicated they had ever accessed the New Hampshire Fish and Game Department website.

The New Hampshire Fish and Game Department is involved in a number of hunting-related activities. One objective of this survey was to determine the extent to

Table 9. Proportion of licensed anglers and hunters who hunt, and their frequency of participation in hunting.

		<u>n</u>	<u>%</u>
Distribution of hunters/non-hunters.....	Yes	673	78.4
	No	<u>186</u>	<u>21.6</u>
		859	100.0
Days hunted during previous 12 months	Minimum	0	
	Maximum	182	
	Mean	24.4	
	SD	25.1	
Years of experience hunting.....	Minimum	0	
	Maximum	60	
	Mean	27.7	
	SD	12.7	

which hunters were aware of these activities, or believed the agency was involved with these activities. Results show that nearly all New Hampshire hunters know or believe the agency is involved in hunter education, law enforcement, and wildlife research (Table 11). About one-third (32%) of hunters mistakenly believe the agency engages in captive breeding of endangered animals. Finally, very few hunters mistakenly thought the agency sold wild animals to the public (2%) or raised animals for fur products (1%).

Almost all New Hampshire hunters were aware of the various state and federal land management agencies (Table 12). Over 99% knew of the New Hampshire Fish and Game Department, 98% were aware of the U.S. Forest Service and the National Park Service, and 96% of the U.S. Fish and Wildlife Service. Nearly all hunters (99.9%) were also aware of or had heard of the National Rifle Association. The Audubon Society (94%), Ducks Unlimited (90%), and the National Wildlife Federation (90%) were all highly recognizable non-governmental organizations among New Hampshire hunters. Far fewer hunters were aware of the Nature Conservancy (40%) or the USFWS Division of Federal Aid (34%), while only 11% were aware of the Izaak Walton League.

In addition to asking if hunters were aware of, or had ever heard of, the above organizations they were asked to indicate how positively or negatively they perceived

Table 10. Extent to which hunters make use of various sources of information about hunting in New Hampshire.

	Mean ^a	Minimum	Maximum	SD	n
New Hampshire hunting regulations.....	3.94	1.00	5.00	1.15	660
Comments and opinions of other hunters.....	3.61	1.00	5.00	1.22	659
Magazine Articles	2.81	1.00	5.00	1.13	659
New Hampshire Fish and Game Department publications.....	2.72	1.00	5.00	1.25	667
Outdoor writer columns / newspaper articles	2.72	1.00	5.00	1.13	662
Sporting good shops.....	2.67	1.00	5.00	1.17	651
Television shows.....	2.47	1.00	5.00	1.24	657
New Hampshire Fish and Game Department employees.....	2.31	1.00	5.00	1.22	659
Advertisements for hunting equipment and supplies	2.19	1.00	5.00	1.10	654
Hunting clubs or organizations.....	2.13	1.00	5.00	1.21	658
Sporting good trade shows	1.95	1.00	5.00	1.08	659
The Internet.....	1.81	1.00	5.00	1.11	657
New Hampshire Fish and Game Department website.....	1.77	1.00	5.00	1.14	659
Email correspondence	1.38	1.00	5.00	0.75	657

^a Measured on a five point scale, with 1=No use, 2=Little use, 3=Some use, 4=Moderate use, 5=A lot of use.

them (Table 12). All organizations were viewed positively by New Hampshire hunters. The organization viewed most positively by hunters was the New Hampshire Fish and Game Department, followed closely by the National Rifle Association, U.S. Fish and Wildlife Service, Ducks Unlimited and the National Wildlife Federation. The Nature Conservancy and the Izaak Walton League were viewed less positively, although they were still viewed in a positive way.

Table 11. Hunter awareness of New Hampshire Fish and Game Department involvement in hunting-related activities.

		<u>n</u>	<u>%</u>
Hunter education programs	Yes	654	99.2
	No	5	0.8
		<u>659</u>	<u>100.0</u>
Law enforcement.....	Yes	657	99.9
	No	1	0.1
		<u>658</u>	<u>100.0</u>
Research on wildlife and wildlife habitat	Yes	648	98.6
	No	9	1.4
		<u>657</u>	<u>100.0</u>
Stocking game animals	Yes	527	81.1
	No	123	18.9
		<u>650</u>	<u>100.0</u>
Purchasing land for fish and wildlife habitat	Yes	452	69.5
	No	198	30.5
		<u>650</u>	<u>100.0</u>
Captive breeding of endangered animals	Yes	208	32.3
	No	436	67.7
		<u>644</u>	<u>100.0</u>
Selling wild animals to the public	Yes	12	1.9
	No	637	98.1
		<u>649</u>	<u>100.0</u>
Raising wild animals for fur products	Yes	8	1.2
	No	641	98.8
		<u>649</u>	<u>100.0</u>

Table 12. Hunter awareness and perception of various organizations.

		<u>Awareness</u>		<u>Perception</u>	
		<u>n</u>	<u>%</u>	<u>of Organization</u>	
National Rifle Association	Yes	655	99.9	Mean	1.33 ^a
	No	1	0.1	SD	0.59
New Hampshire Fish and Game Dept.	Yes	655	99.9	Mean	1.25
	No	1	0.1	SD	0.52
U.S. Forest Service.....	Yes	642	98.5	Mean	1.43
	No	10	1.5	SD	0.61
National Park Service	Yes	643	98.2	Mean	1.47
	No	12	1.8	SD	0.64
U.S. Fish and Wildlife Service	Yes	625	96.0	Mean	1.36
	No	26	4.0	SD	0.53
Audubon Society	Yes	617	94.3	Mean	1.49
	No	37	5.7	SD	0.63
Ducks Unlimited.....	Yes	584	89.9	Mean	1.36
	No	66	10.1	SD	0.51
National Wildlife Federation	Yes	581	89.7	Mean	1.39
	No	67	10.3	SD	0.52
Society for the Protection of New Hampshire Forests.....	Yes	416	63.9	Mean	1.53
	No	235	36.1	SD	0.66
The Nature Conservancy	Yes	259	40.3	Mean	1.77
	No	384	59.7	SD	0.63
USFWS, Division of Federal Aid	Yes	217	33.7	Mean	1.54
	No	427	66.3	SD	0.58
Izaak Walton League	Yes	70	10.9	Mean	1.79
	No	572	89.1	SD	0.54

^a Measured on a three point scale, with 1=Positive, 2=Neutral, 3=Negative.

Boaters

Anglers and hunters who owned a boat ranged in age from 17 years to 70 years (Table 13). The average age was 45, with most boat owners being between 35 and 54 years of age. The large majority of anglers and hunters who owned a boat (90%) were male.

The anglers and hunters surveyed were asked about their ownership of boats and their boating activity. It is important to recognize that the following boating-related results pertain only to anglers and hunters who boat. The results do not speak to all New Hampshire boat owners because that population was not sampled.

Table 13. Distribution of boaters according to age and gender.

Age	n	%	Gender					
			Mean	Minimum	Maximum	SD	n	%
16-24	33	6.0	44.67	17	70	11.56	552	100.0
25-34	72	13.0					499	90.4
35-44	160	28.9					53	9.6
45-54	180	32.5						
55-64	83	14.9						
65+	26	4.7						
Total								

Approximately two-thirds of the anglers and hunters surveyed, or someone in their household, owned a boat (Table 14). On average they had spent 19 days boating during the previous 12 months, and had been boat owners for 19 years. The average length of the longest boat owned was 16 feet.

The most popular type of boat was a motorboat used primarily for fishing (Table 15). Second in popularity was a canoe, followed by a motorboat used for general recreation purposes. Because of the way in which the question concerning boat ownership was worded, it is not possible to determine the extent to which the motorboats used primarily for fishing are separate from general recreation motorboats. It is likely,

however, that there is considerable overlap, and that boats used for fishing are also used for other recreation. The boat least likely to be owned by New Hampshire anglers and hunters was a sailboat.

Anglers and hunters surveyed who own boats make use of various sources to obtain information about boating in New Hampshire (Table 16). The sources they made most use of were comments and opinions of fellow anglers, New Hampshire Fish and Game Department publications, and boat dealers and shops. The least used sources of information are Internet related sources, similar to what was found for sources of angling and hunting information.

Table 14. Proportion of licensed anglers and hunters who had a boat in their household, and their frequency of boating participation.

		<u>n</u>	<u>%</u>
Distribution of boaters/non-boaters.....	Yes	554	66.8
	No	<u>276</u>	<u>33.2</u>
		830	100.0
Days boating during previous 12 months	Minimum	0	
	Maximum	150	
	Mean	18.5	
	SD	20.6	
Years of experience owning a boat	Minimum	1	
	Maximum	66	
	Mean	18.9	
	SD	13.1	
Length of the longest boat you own.....	Minimum	8	
	Maximum	50	
	Mean	15.9	
	SD	4.3	

Anglers and hunters who boat appear to be well informed about activities the New Hampshire Fish and Game Department is involved in. Almost all believed the agency

stocked fish in streams and lakes (99%), engaged in law enforcement (98%) and conducted boater safety programs (91%) (Table 17). Somewhat fewer boaters, although

Table 15. Distribution of types and number of boats owned by anglers and hunters.

		<u>n</u>	<u>%</u>
Canoe.....	Yes	303	55.2
	No	246	44.8
Motorboat (primarily fishing).....	Yes	335	61.0
	No	214	39.0
Motorboat (other recreation).....	Yes	149	27.1
	No	400	72.9
Sailboat.....	Yes	30	5.5
	No	519	94.5
Kayak.....	Yes	37	6.7
	No	512	93.3

still a strong majority, correctly believed the agency provides aquatic resource education (82%) and builds public boat ramps (81%). Approximately two-thirds of boaters correctly believed the agency purchases land for fish and wildlife habitat. A very small percent of hunters and anglers who boat erroneously believed the agency provides boat cleaning services (4%), sell boats to the public (3%), or teaches water skiing (2%).

Table 16. Extent to which boaters make use of various sources of information about boating in New Hampshire.

	Mean ^a	Minimum	Maximum	SD	n
Comments and opinions of other boaters	2.78	1.00	5.00	1.32	543
New Hampshire Fish and Game Department publications.....	2.37	1.00	5.00	1.27	545
Boat dealers and shops	2.30	1.00	5.00	1.18	538
Magazine Articles	2.14	1.00	5.00	1.10	539
U.S. Coast Guard	2.08	1.00	5.00	1.29	544
Outdoor writer columns / newspaper articles	2.04	1.00	5.00	1.12	540
New Hampshire Fish and Game Department employees	1.97	1.00	5.00	1.14	542
Advertisements for boating equipment and supplies	1.89	1.00	5.00	1.02	545
Television shows.....	1.84	1.00	5.00	1.03	539
Boating trade shows	1.65	1.00	5.00	0.91	542
Boating clubs or organizations	1.52	1.00	5.00	0.87	542
The Internet.....	1.51	1.00	5.00	0.96	540
Email correspondence	1.48	1.00	5.00	0.92	542
New Hampshire Fish and Game Department website.....	1.27	1.00	5.00	0.66	540

^a Measured on a five point scale, with 1=No use, 2=Little use, 3=Some use, 4=Moderate use, 5=A lot of use.

Table 17. Boater awareness of New Hampshire Fish and Game Department involvement in boating-related activities.

		<u>n</u>	<u>%</u>
Stocking fish in streams and lakes.....	Yes	546	98.9
	No	6	1.1
		552	100.0
Law enforcement.....	Yes	538	97.6
	No	13	2.4
		551	100.0
Boating safety programs.....	Yes	501	90.8
	No	51	9.2
		552	100.0
Aquatic resource education.....	Yes	438	82.0
	No	96	18.0
		534	100.0
Building public boat ramps.....	Yes	442	81.1
	No	103	18.9
		545	100.0
Purchasing land for fish and wildlife habitat.....	Yes	364	67.3
	No	177	32.7
		541	100.0
Cleaning services for boats.....	Yes	20	3.7
	No	519	96.3
		539	100.0
Selling boats to the public.....	Yes	16	3.0
	No	528	97.0
		544	100.0
Teaching water skiing.....	Yes	13	2.4
	No	525	97.6
		538	100.0

Program and Funding Awareness

Important questions addressed by this research were related to angler and hunter knowledge of the Federal Aid in Sport Fish and Wildlife Restoration Program and the funding of fish and wildlife conservation in New Hampshire. Respondents were presented a list of funding sources, and asked to indicate approximately what percentage of New Hampshire Fish and Game's budget comes from each source. The total for all sources combined should add to 100%.

The source anglers and hunters believe contributes most to the agency budget is hunting and fishing license sales. On average, New Hampshire anglers and hunters believed that this source made up nearly one-half (49%) the agency's total budget (Table 18). Respondents clearly believed that license sales are the major source of funding, with all other sources making far smaller contributions. Motorboat license and registration fees (10%), general taxes (10%) and special hunting permits (8%) were viewed as the next three largest contributors. No other sources were seen as contributing more than 6% to the total agency budget. Excise taxes paid on hunting and fishing equipment and motorboat fuels were believed to contribute just 5% to the New Hampshire Fish and Game annual budget.

An important source of revenue to the New Hampshire Fish and Game Department is the Federal Aid in Sport Fish and Wildlife Restoration Program. The fact that anglers and hunters believed that excise taxes paid on hunting and fishing equipment and motorboat fuels contribute just 5% to the agency's budget suggests that they are not aware of the Federal Aid Program or its budgetary importance. To determine if this was the case, respondents were asked to indicate if they were aware of or had ever heard of a number of specific programs and congressional acts related to Federal Aid. The best known program, recognized by more than half of the respondents, was the Wildlife Restoration Program (56%) (Table 19). About one-third of anglers and hunters surveyed knew of the Federal Aid Program (38%) and the Sport Fish Restoration Program (37%). Only about 17% had ever heard of Pittman Robertson while even fewer recognized the Dingell Johnson (7%) and Wallop Breaux (2%) acts.

Those anglers and hunters who indicated they were aware of or had heard of any of the Federal Aid Programs were asked to indicate which of a number of revenue sources contribute to funding the programs. Over 90% of the respondents incorrectly

Table 18. Assessment of angler and hunter knowledge about the funding of fish and wildlife conservation in New Hampshire.

	<u>Mean^a</u>	<u>Minimum</u>	<u>Maximum</u>	<u>SD</u>	<u>n</u>
Hunting and fishing license sales.....	49.0	0.0	100.0	26.1	668
Motorboat license and registration fees	10.3	0.0	68.0	9.9	668
General taxes	9.5	0.0	100.0	17.6	667
Special hunting permits (moose, etc.).....	8.4	0.0	50.0	7.3	667
Excise taxes paid on hunting and fishing equipment and motorboat fuels.....	5.2	0.0	48.0	7.0	668
Special permits and fees paid by corporations (forestry, mining, etc.).....	4.8	0.0	50.0	6.5	667
Private donations.....	4.3	0.0	25.0	5.3	667
Corporate donations	3.8	0.0	40.0	5.7	667
Motorboat fuel tax.....	2.1	0.0	20.0	3.4	667
Excise tax paid on binoculars, field guides, cameras, and canoes	1.6	0.0	46.0	3.7	667
Income tax checkoff.....	1.2	0.0	20.0	2.7	667

^a Values are the percentage of New Hampshire Fish and Game’s budget that comes from each source. Respondents were informed that the total for all sources combined should add to 100%.

believed that hunting and fishing license sales contribute to the Federal Aid Program (Table 20). Three-quarters incorrectly believed that motorboat license and registration fees also go toward funding Federal Aid, while the majority of angler and hunters incorrectly believed that special permits and fees paid by corporations (67%) and corporate donations (61%) contributed to Federal Aid. About half of the respondents

mistakenly believed that general taxes contribute to the Federal Aid Program.

Approximately one out of every five respondents incorrectly believed that an income tax checkoff (19%) and a percentage of property taxes (19%) were used for the Federal Aid Programs. Nearly two-thirds (65%) correctly identified excise taxes paid on hunting and fishing equipment and boat fuel as contributing to Federal Aid. These results clearly indicate that anglers and hunters are poorly informed about the funding sources for the Federal Aid Program.

Table 19. Assessment of angler and hunter awareness of various USFWS Federal Aid Programs.

		<u>n</u>	<u>%</u>
Wildlife Restoration Program	Yes	481	56.3
	No	374	43.7
		<u>851</u>	<u>100.0</u>
Federal Aid Program	Yes	321	37.7
	No	530	62.3
		<u>851</u>	<u>100.0</u>
Sport Fish Restoration Program.....	Yes	319	37.4
	No	533	62.6
		<u>852</u>	<u>100.0</u>
Pittman Robertson Program.....	Yes	142	16.7
	No	711	83.3
		<u>853</u>	<u>100.0</u>
Dingell-Johnson Program	Yes	58	6.8
	No	790	93.2
		<u>848</u>	<u>100.0</u>
Wallop Breaux	Yes	18	2.1
	No	830	97.9
		<u>848</u>	<u>100.0</u>

Table 20. Angler and hunter beliefs concerning the contribution of various funding sources to Federal Aid programs.

		<u>n</u>	<u>%</u>
Hunting and fishing license sales	Yes	493	90.5
	No	52	9.5
		545	100.0
Motorboat license and registration fees.....	Yes	374	75.3
	No	123	24.7
		497	100.0
Special permits and fees paid by corporations (forestry, mining, etc.).....	Yes	318	67.0
	No	157	33.0
		475	100.0
Excise taxes paid on hunting and fishing equipment and motorboat fuels	Yes	313	64.7
	No	171	35.3
		484	100.0
Corporate donations	Yes	283	61.0
	No	181	39.0
		464	100.0
General taxes.....	Yes	254	53.3
	No	223	46.7
		477	100.0
Excise taxes paid on binoculars, field guides cameras, and canoes	Yes	139	31.3
	No	305	68.7
		444	100.0
Income tax checkoff	Yes	81	19.1
	No	343	80.9
		424	100.0
A percentage of property taxes	Yes	81	18.7
	No	353	81.3
		434	100.0

Awareness and Use of New Hampshire Fish and Game Outreach Programs

New Hampshire Fish and Game has a volunteer program where participants can assist with fish stocking, surveys and other projects. For this survey, New Hampshire anglers and hunters were asked if they knew of such programs, if they ever served as a volunteer, and if they would be interested in participating in such programs in the future. Only about one-third (36%) of respondents indicated that they knew of NHF&G volunteer programs. Approximately 11% of those who knew of such programs indicated that they had served as a volunteer. Over half (54%) of the respondents indicated that they would be interested in serving as volunteers. Of the 551 respondents who indicated they were unaware of the agency's volunteer programs, 225 (41%) indicated that they would be interested in serving as volunteers. These results suggest that there are many New Hampshire anglers and hunters willing to voluntarily participate in natural resource conservation efforts if such opportunities were made available to them.

Anglers and hunters were also asked questions regarding their knowledge of and participation in New Hampshire Fish and Game public meetings. About half (49%) the respondents knew about the public meetings. Nearly one-fourth (23%) of those anglers and hunters who knew of the meetings actually ever attended one of these meetings. The most cited reasons given for never attending a New Hampshire Fish and Game public meeting were related to time constraints. Of those anglers and hunters who gave a reason for never attending, more than one-third (36.9%) said they did not have enough free time to attend. Another 16.1% said the meetings were held at the wrong time of day for them to attend. Nearly one-fourth of those offering a reason for not attending said they did not know when or where the meetings were held. Thus, the agency may be able to increase participation at such meetings through better publicity and notification efforts.

Knowledge of Sport Fish & Wildlife Restoration Logo

Anglers and hunters were shown the Sport Fish & Wildlife Restoration logo and asked whether they had ever seen this logo on a publication or product. Only 29% indicated that they had seen the logo on a publication or product. Respondents were asked what they believed the logo meant about the publication or product it appears on. The majority of respondents believed it has something to do with hunting and fishing

(81%) and that it is somehow related to fish and wildlife (86%). Less than half (42%) believed that the logo indicates a product that is either taxed for the Sport Fish & Wildlife Restoration program, or receives funding from the program. However, only 11% actually believed that this was not the case, while the other 46% indicated that they did not know if this was true or not.

Discussion

This study examined angler and hunter awareness and understanding of various aspects of resource management activities, organizations and funding, and sources of information. Results indicate that New Hampshire anglers and hunters are quite knowledgeable in some of these areas but considerably less well informed in others. The vast majority of anglers and hunters correctly believed that New Hampshire Fish and Game Department is involved in law enforcement, fish stocking, and fish and wildlife related research. About three-quarters of the anglers and hunters surveyed also correctly believed the agency purchased land for fish and wildlife habitat and 80% correctly believed the agency builds boat ramps. However, that leaves roughly 20% to 25% of anglers and hunters who incorrectly believe New Hampshire Fish and Game is not involved in such activities.

Anglers and hunters appear to be somewhat less knowledgeable about sources and distribution of funds that support the New Hampshire Fish and Game Department. Most anglers and hunters did, however, correctly identify license sales as a major portion of New Hampshire Fish and Game's budget. Respondents believed, on average, that nearly half (49%) the agency's budget comes from this source. In actuality, about 63% of the department's budget for 2000 came from this source (personal communication, Anne Hewitt, NHF&G Department, Concord, NH). Only 1% of those surveyed believed that none of the agency's budget comes from license sales.

Anglers and hunters seemed less aware of the importance of excise taxes paid on hunting and fishing equipment and motorboat fuels in contributing to the New Hampshire Fish and Game budget. As the principle source of funding for the Federal Aid Program, such excises taxes make up a significant portion of the agency's budget. New Hampshire anglers and hunters believed that, on average, only about 5% of the agency's budget comes from this source, when in fact about 28% came from this source in 2000 (personal communication, Anne Hewitt, NHF&G Department, Concord, NH). Almost half of the anglers and hunters surveyed (46%) incorrectly believed that none of the agency budget came from this excise tax. Clearly, they are misinformed on the role such excise taxes play in funding New Hampshire Fish and Game. Anglers and hunters appear to be

somewhat more informed about the non-role of excise taxes paid on binoculars, field guides, cameras and canoes. Respondents believed that only about 2% of the agency budget came from such taxes, with 72% correctly believing there was no contribution. However, the other 28% did believe this tax contributed to the agency's budget, even though no such tax exists.

While anglers and hunter are aware of the existence of major federal land and resource management agencies, they are significantly less familiar with the USFWS Division of Federal Aid, or the Sport Fish and Wildlife Restoration Program and its associated acts. Results show that New Hampshire many anglers and hunters are still unaware of the existence of the Federal Aid Program, or its importance for natural resource conservation efforts within the state. This suggests that many anglers and hunters are not simply misinformed about the use of excise taxes on the products they buy, but rather they are completely unaware of the existence of such taxes. These results indicate a need to better communicate with anglers and hunters about the nature of Federal Aid, its programs and funding sources, since they are the stakeholders who primarily fund the agency and who supposedly benefit most from it.

The last major area of interest in this study was the extent to which anglers made use of various sources of information. Anglers and hunters are similar in that they each rely on state regulations materials and communication with other participants as the most important information sources. Both groups seem to make moderate use of popular media such as television, newspapers or magazines as well as sporting goods shops and agency publications. Anglers and hunters make little to no use of sporting clubs, organizations, trade shows, or Internet related sources (i.e. agency website, email, Internet searches). These results are very similar to those found in previous studies (Loomis 1993; Ditton et al. 1991). Formal printed regulations, provided to all anglers and hunters when they purchase a license, offer information on pertinent rules and regulations. Because they are so widely read, such regulations publications can be a useful vehicle for the dissemination of important resource conservation information.

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Appendix A

2001 Survey of New Hampshire Anglers and Hunters Survey Instrument