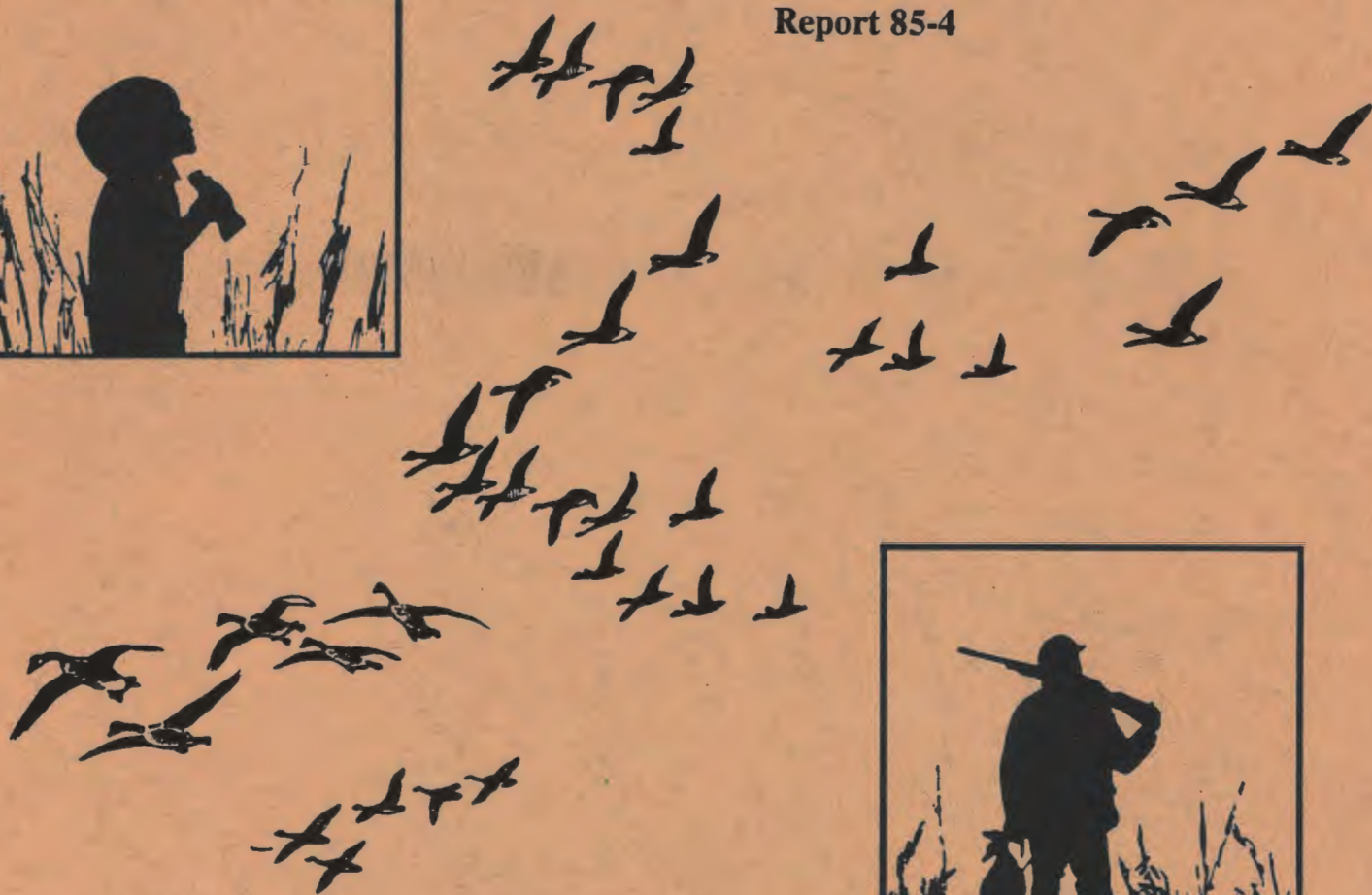


Analysis of the 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

Hunting on Wetlands, 1985

Report 85-4



U.S. Department of the Interior
Fish and Wildlife Service

**ANALYSIS OF THE 1985 NATIONAL SURVEY OF
FISHING, HUNTING AND WILDLIFE-
ASSOCIATED RECREATION**

Report 85-4

HUNTING ON WETLANDS, 1985

April 1989

Division of Federal Aid

U.S. Fish and Wildlife Service

Washington, D.C. 20240

This paper is one of a series designed to complement the National and State reports of the 1985 National Survey of Fishing, Hunting and Wildlife Associated Recreation with investigations of particular fish and wildlife related trends and other topics of interest. The results presented and conclusions reached are the author's and are not necessarily endorsed by the U.S. Fish and Wildlife Service.

HUNTING ON WETLANDS, 1985

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Abstract

This paper presents state by state estimates of the number of hunters using wetlands for hunting in 1985 and the number of days they hunted on wetlands. The same information is aggregated to the seven U.S. Fish and Wildlife Service regions in order to provide a different geographic perspective. Estimates from the Survey of ownership and leasing of wetlands for hunting are also included.

I. Introduction

Concern over wetland losses in the United States has in recent years focussed attention on the wide range of biological, ecological and recreational functions which wetlands perform (Tyner 1984, Greeson, et al. 1978). Among the most important recreational functions of wetlands is to provide places to hunt for millions of hunters of all types. The 1985 National Survey of Fishing, Hunting and Wildlife Associated Recreation produced the most comprehensive data set to date on the extent of wetland use for hunting. The purpose of this paper is to present and discuss those data, most of which do not appear in either the Survey's national or state reports (USDI 1988).

Estimates of the number of hunters using wetlands for hunting in 1985 and the number of days they hunted there are given in the next section for the nation as a whole and for each state. The same information aggregated to the seven U.S. Fish and Wildlife Service regions is presented in the third section in order to provide a different geographic perspective. The fourth section consists of estimates from the Survey of ownership and leasing of wetlands for hunting. The final section provides a summary and some closing observations.

II. Hunting on Wetlands

As in previous surveys, the 1985 Survey gathered extensive information about the respondents' fishing and hunting activities; what kind of fish or game they sought, on how many days and in which states. In 1985, the hunting section of the questionnaire then asked how many of those days involved hunting in or on wetlands.¹ The wetlands question was asked separately for big game, small game, migratory bird and "other animal" hunting, the four types of hunting used in the Survey, but did not seek wetland hunting information on a more detailed level within those broad categories; how many days a migratory bird hunter hunted geese in or on wetlands, for instance.² The estimates presented here

on a state by state basis represent all hunting in a given state by residents and nonresidents combined.

Table 1 shows that 6,340,000 hunters, 38 percent of the nation's 16,684,000 hunters 16 years old or older, did at least some of their hunting on wetlands in 1985. On a state by state basis, the percent of hunters hunting on wetlands ranged from a high of 67 percent in Rhode Island to a low of 7 percent in West Virginia.³ Percent of hunters using wetlands is one way of gauging the importance of wetlands in a particular state or from one state to the next. An alternative measure of wetlands' importance is the absolute number of hunters who use them. For example, the 67 percent in Rhode Island represents only 10,000 hunters on wetlands compared to over 300,000 hunters on wetlands in both Pennsylvania and Texas, although those much larger numbers represent less than 30 percent of each state's total hunters.

Table 2 gives days of hunting on wetlands as a percent of total days hunted for each state and for the nation as a whole. Overall, 26 percent of hunting days in 1985 were spent in whole or in part on wetlands, more than 85 million days in all. In terms of percent of total hunting days, Nevada was highest with 58 percent of total hunting days spent hunting on wetlands compared to a low of 2 percent in West Virginia. Once again, the number of hunting days on wetlands is an alternative measure of wetlands' contribution in a given state. In this case, Nevada's high percentage translates into 986,000 days hunted on wetlands versus more than 5 million days each in Louisiana and Michigan.

Tables 3 and 4 show state by state estimates of wetland hunters and hunting days by type of hunting, allowing a more detailed look at the kinds of hunting which take place on wetlands. For the nation as a whole, 28 percent of both big game and small game hunters hunted on wetlands as did 48 percent of migratory bird hunters. Hunting for other animals, the fourth hunting category used in the Survey, is not shown in the table because of inadequate sample sizes in many states.⁴

Table 1: HUNTERS HUNTING ON WETLANDS, BY STATE

(Population 16 years old or older. Numbers in thousands)

State	All Hunters	Hunted on Wetlands	Percent of Hunters
U.S.	16,684	6,340	38
Alabama	444	208	47
Alaska	90	59	66
Arizona	259	34	13
Arkansas	417	203	49
California	633	223	35
Colorado	379	96	25
Connecticut	66	34	52
Delaware	29	12	41
Florida	294	162	55
Georgia	527	280	53
Hawaii	24	8	33
Idaho	213	63	30
Illinois	406	134	33
Indiana	361	144	40
Iowa	316	112	35
Kansas	273	81	30
Kentucky	376	67	18
Louisiana	538	298	55
Maine	202	119	59
Maryland	204	82	40
Massachusetts	132	82	62
Michigan	943	490	52
Minnesota	545	306	56
Mississippi	490	229	47
Missouri	668	192	29
Montana	210	45	21
Nebraska	189	67	35
Nevada	66	21	32
New Hampshire	81	46	57
New Jersey	167	76	46
New Mexico	150	19	13
New York	791	297	38
North Carolina	439	138	31
North Dakota	130	61	47
Ohio	515	135	26
Oklahoma	371	122	33
Oregon	351	71	20
Pennsylvania	1,148	301	26
Rhode Island	15	10	67
South Carolina	296	147	50
South Dakota	167	57	34
Tennessee	434	107	25
Texas	1,488	349	23
Utah	252	65	26
Vermont	106	53	50
Virginia	511	123	24
Washington	302	112	37
West Virginia	438	31	7
Wisconsin	723	421	58
Wyoming	179	38	21

1 Wetlands were defined in the question as marshes, swamps, potholes, bogs, small lakes or ponds surrounded by wetland vegetation or bottom lands that are sometimes flooded. Open bodies of water of 10 acres or more were excluded.

2 The kinds of hunting included in the four categories are shown in Appendix A.

3 Because they are based on a sample of all hunters, the estimates should be considered in relation to their standard errors and associated confidence intervals. Approximate standard errors for the state by state estimates are given in Appendix B. A 90 percent confidence interval for an estimate, Y, can be calculated as $Y \pm 1.6 \times \text{Standard Error}$. For example, Minnesota's estimate of 306,000 hunters on wetlands would have a 90 percent confidence interval of $306,000 \pm 42,000$, or 264,000 - 348,000. The chances are 90 percent that this interval includes the average value for all possible samples of Minnesota hunters.

4 Estimates based on samples of fewer than 10 observations are indicated by ... in the tables.

Table 2: DAYS OF HUNTING ON WETLANDS, BY STATE

(Numbers in thousands)

State	All Days	Days on Wetlands	Percent of All Days
U.S.	334,013	85,862	26
Alabama	9,618	3,350	35
Alaska	1,163	603	52
Arizona	3,434	213	6
Arkansas	9,125	3,465	38
California	10,848	3,264	30
Colorado	4,280	1,019	24
Connecticut	1,266	560	44
Delaware	693	301	43
Florida	7,174	3,048	42
Georgia	10,107	4,297	43
Hawaii	547	...	...
Idaho	3,340	571	17
Illinois	8,877	1,542	17
Indiana	8,144	2,303	28
Iowa	5,149	1,202	23
Kansas	3,732	748	20
Kentucky	7,751	575	7
Louisiana	12,975	5,351	41
Maine	3,278	1,323	40
Maryland	3,393	974	29
Massachusetts	2,477	1,315	53
Michigan	14,908	5,600	38
Minnesota	8,058	3,475	43
Mississippi	11,000	3,575	33
Missouri	12,367	1,791	14
Montana	2,915	483	17
Nebraska	3,330	807	24
Nevada	1,693	986	58
New Hampshire	1,667	640	38
New Jersey	3,420	972	28
New Mexico	1,387	156	11
New York	13,245	3,124	24
North Carolina	9,931	2,285	23
North Dakota	2,230	734	33
Ohio	14,223	1,527	11
Oklahoma	8,080	2,180	27
Oregon	4,030	657	16
Pennsylvania	20,081	2,912	15
Rhode Island	399	189	47
South Carolina	5,276	2,106	40
South Dakota	2,569	604	24
Tennessee	8,580	1,219	14
Texas	24,106	3,791	16
Utah	3,194	586	18
Vermont	2,014	545	27
Virginia	10,954	2,083	19
Washington	4,511	1,091	24
West Virginia	8,064	187	2
Wisconsin	11,830	4,793	41
Wyoming	2,094	389	19

... Sample size too small to report data reliably.

Table 3: HUNTERS HUNTING ON WETLANDS, BY TYPE OF HUNTING AND STATE

(Population 16 years old or older. Numbers in thousands)

State	Big Game Hunters			Small Game Hunters			Migratory Bird Hunters		
	Total	Hunted on Wetlands	Percent	Total	Hunted on Wetlands	Percent	Total	Hunted on Wetlands	Percent
U.S.	12,520	3,546	28	10,831	3,022	28	5,036	2,401	48
Alabama	313	133	42	288	111	39	165	62	38
Alaska	72	42	58	38	20	53	23	19	83
Arizona	188	6	2	137	11	8	94	21	22
Arkansas	336	105	31	276	99	36	120	80	67
California	280	29	10	430	135	31	329	152	46
Colorado	295	25	8	150	49	33	115	68	59
Connecticut	35	13	37	52	26	50	21	17	81
Delaware	18	4	22	18	5	28	14	8	57
Florida	224	108	48	133	72	54	125	57	46
Georgia	407	200	49	293	132	45	189	57	30
Hawaii	22	8	36	...	...	...	...	...	...
Idaho	169	17	10	126	24	19	59	35	59
Illinois	123	21	17	347	74	21	143	67	47
Indiana	186	60	32	292	93	32	54	21	39
Iowa	105	19	18	277	68	25	52	41	79
Kansas	59	13	22	247	57	23	79	24	30
Kentucky	160	20	13	316	38	12	89	21	24
Louisiana	299	115	38	417	170	41	278	166	60
Maine	193	108	56	98	38	39	30	22	73
Maryland	128	34	27	124	27	22	93	48	52
Massachusetts	105	55	52	94	51	54	31	28	90
Michigan	835	404	48	502	158	31	130	79	61
Minnesota	441	184	42	267	121	45	181	147	81
Mississippi	357	148	41	337	122	36	154	66	43
Missouri	481	75	16	414	79	19	163	91	56
Montana	184	22	12	83	17	20	23	21	91
Nebraska	77	13	17	160	41	26	61	34	56
Nevada	41	...	...	45	13	29	29	18	62
New Hampshire	70	35	50	42	19	45	16	11	69
New Jersey	138	50	36	125	47	38	40	27	68
New Mexico	126	9	7	49	6	12	28	8	29
New York	715	230	32	369	84	23	88	50	57
North Carolina	304	82	27	294	67	23	165	45	27
North Dakota	81	21	26	77	25	32	52	44	85
Ohio	313	59	19	444	94	21	40	23	58
Oklahoma	190	53	28	285	67	24	143	55	38
Oregon	324	32	10	98	19	19	62	43	69
Pennsylvania	1,102	210	19	810	158	20	284	103	36
Rhode Island	6	4	67	11	5	45	8	7	88
South Carolina	191	99	52	159	47	30	127	63	50
South Dakota	88	15	17	134	39	29	43	23	53
Tennessee	258	36	14	314	57	18	130	34	26
Texas	1,131	135	12	724	163	23	691	204	30
Utah	225	13	6	124	31	25	66	45	68
Vermont	103	44	43	53	20	38	14	9	64
Virginia	428	102	24	313	53	17	108	23	21
Washington	237	44	19	158	48	30	85	66	78
West Virginia	388	19	5	323	10	3	21	5	24
Wisconsin	636	332	52	408	161	39	121	96	79
Wyoming	161	17	11	55	16	29	26	21	81

...Sample size too small to report data reliably

Table 4: DAYS OF HUNTING ON WETLANDS, BY TYPE OF HUNTING AND STATE

(Numbers in thousands)

State	Big Game Days			Small Game Days			Migratory Bird Days		
	Total	Days on Wetlands	Percent	Total	Days on Wetlands	Percent	Total	Days on Wetlands	Percent
U.S.	131,330	28,647	22	132,263	26,370	20	41,683	19,903	48
Alabama	4,935	1,693	34	3,187	823	26	1,151	346	30
Alaska	654	264	40	412	211	51	171	112	65
Arizona	1,284	14	1	1,447	53	4	562	137	24
Arkansas	3,693	987	27	3,415	950	28	1,069	822	77
California	2,292	106	5	5,045	916	18	2,925	1,766	60
Colorado	1,581	78	5	1,372	397	29	1,165	520	45
Connecticut	256	62	24	747	255	34	217	145	67
Delaware	110	21	19	424	168	40	243	112	46
Florida	3,750	1,398	37	1,785	710	40	1,496	579	39
Georgia	6,049	2,189	36	2,518	1,210	48	1,156	356	31
Hawaii	437	...	...	...	...	...	...	...	...
Idaho	1,442	112	8	1,194	140	12	544	316	58
Illinois	747	165	22	4,354	478	11	1,246	573	46
Indiana	2,063	569	28	4,120	938	23	661	216	33
Iowa	837	106	13	3,173	522	16	332	272	82
Kansas	594	79	13	2,158	384	18	505	122	24
Kentucky	1,403	141	10	3,691	193	5	604	130	22
Louisiana	4,318	1,413	33	5,576	1,960	35	2,426	1,436	59
Maine	1,925	776	40	1,039	301	29	231	133	58
Maryland	969	306	32	1,507	329	22	695	300	43
Massachusetts	851	389	46	1,142	507	44	266	220	83
Michigan	7,482	2,792	37	6,547	2,081	32	747	469	63
Minnesota	3,244	1,026	32	2,735	1,007	37	1,577	1,263	80
Mississippi	5,503	1,631	30	3,957	1,055	27	971	430	44
Missouri	4,016	422	11	5,598	669	12	1,029	503	49
Montana	1,586	104	7	756	130	17	250	173	69
Nebraska	624	97	16	1,835	328	18	773	350	45
Nevada	244	...	...	896	501	56	542	478	88
New Hampshire	956	281	29	494	179	36	196	141	72
New Jersey	1,303	330	25	1,520	327	22	309	225	73
New Mexico	582	25	4	430	53	12	237	43	18
New York	6,636	170	3	4,282	711	17	836	321	38
North Carolina	4,404	1,160	26	3,578	512	14	1,216	299	25
North Dakota	615	104	17	871	184	21	419	316	75
Ohio	2,823	384	14	6,717	693	10	263	136	52
Oklahoma	1,783	313	18	4,058	967	24	1,048	442	42
Oregon	2,415	126	5	898	76	8	557	382	69
Pennsylvania	8,972	958	11	7,623	844	11	1,894	728	38
Rhode Island	31	11	35	261	102	39	101	68	67
South Carolina	2,711	1,006	37	1,543	447	29	1,118	470	42
South Dakota	737	60	8	1,253	274	22	354	151	43
Tennessee	3,014	315	10	3,871	428	11	734	249	34
Texas	10,923	972	9	8,534	954	11	4,877	1,252	26
Utah	1,511	55	4	931	99	11	636	418	66
Vermont	1,136	275	24	731	183	25	98	52	53
Virginia	5,139	903	18	3,352	335	10	688	112	16
Washington	2,133	205	10	1,600	320	20	787	544	69
West Virginia	3,398	62	2	3,772	61	2	95	27	28
Wisconsin	5,968	2,066	35	4,637	1,277	28	1,407	1,053	75
Wyoming	1,160	88	8	448	120	27	177	160	90

... Sample size too small to report data reliably

Nationally, 23 percent of hunters of other animals hunted on wetlands for 10,942,000 days, 23 percent of total days hunted for other animals in 1985.

For the three types of hunting shown, wetlands were used by significant percentages of hunters in most states. For big game, the smallest percentages tend to be in Western states, such as Utah, New Mexico and Arizona, with the largest percentages in the Southeast and Northeast. Small game hunting follows the same basic pattern.

In general, there is more hunting on wetlands in states where wetlands are relatively abundant. In the Southeast, the region with the most wetlands, wetlands constitute more than 25 percent of total land area in both Louisiana and Florida, and from 15 to 25 percent of total area in North Carolina, South Carolina, Georgia and Alabama (Tiner 1984, p. 28). Similarly, in the Midwest wetlands make up a higher proportion of total land area in Minnesota, the Dakotas, Michigan and Wisconsin than is the case for the country as a whole.

Hunting for migratory birds on wetlands reveals some state to state differences that may not, at first glance, seem consistent with widely held perceptions of the kinds of habitat types and hunting locales found across the country. For example, in North Carolina and Virginia, two states with considerable wetland habitat for waterfowl, only 27 percent and 21 percent of migratory bird hunters, respectively, indicated that they did some of their hunting on wetlands. Examination of the 1985 Survey's state reports showed that a substantial portion of migratory bird hunters in those states were seeking doves, one of several non-waterfowl species in the migratory bird category. In fact, the nationwide total of 3,057,000 dove hunters in 1985 outnumbered the 2,703,000 waterfowl hunters, accounting for many of the relatively low percentages for use of wetlands among migratory bird hunters, especially in the South and West. Similarly, woodcock as well as doves in Pennsylvania, and band-tailed pigeon in New Mexico and Arizona contributed to wetlands' relatively small percentages of hunters and hunting days in the migratory bird category in those states.

III. Hunting on Wetlands in the FWS Regions

Tables 5 and 6 show the number of hunters using wetlands and the number of hunting days spent on wetlands for the seven U.S. Fish and Wildlife Service (FWS) regions. The regions represent the West Coast (Region 1), the Southwest (Region 2), the Midwest (Region 3), the Southeast (Region 4), the Northeast and Mid-Atlantic (Region 5), the Northern Plains and Mountain states (Region 6), and Alaska (Region 7).

Among the regions, Alaska had the most use of wetlands. With the exception of Alaska, the Midwest and Southeast (Regions 3 and 4), had the highest levels of wetland use in terms of both percent of hunters using wetlands and percent of total days hunted on wetlands.

Tables 7 and 8 provide estimates of wetland use in the FWS regions by type of hunting. The regional estimates generally show the same geographic patterns noted previously for the three types of hunting. With the exception of Alaska, the Midwest and Southeast had the highest rates of wetland use for big and small game hunting. The percentages for use of wetlands in the migratory bird hunting category in the Southwest, Southeast, and Northeast/Mid-Atlantic regions are lower than might be expected because of the importance of hunting for non-waterfowl migratory birds in those areas.

IV Ownership and Leasing of Wetlands for Hunting

Respondents to the 1985 Survey were asked if they owned or leased any land in 1985 for the primary purpose of hunting and, if so, whether any of that land was wetlands. Table 9 shows estimates of the number of wetland owners and lessees, and the acres of wetlands involved, for the nation as a whole and for the FWS regions. State by state estimates were not possible because of inadequate sample sizes at the state level.

Nationally, a total of 99,000 hunters owned 2,887,000 acres of wetlands primarily for hunting purposes in 1985 and 449,000 hunters leased an additional 11,471,000 acres. In terms of the FWS regions, hunters in the Southeast (Region 4) owned and leased more wetlands for hunting, and apparently in larger parcels, than was the case for any of the other regions. As a result, the large majority of total wetlands owned or leased for hunting in 1985 was in the Southeast.

V. Summary and Conclusions

The 1985 National Survey of Fishing, Hunting and Wildlife Associated Recreation provided additional evidence of the importance of wetlands for hunting. The Survey provides for the first time data on wetland use for hunting on a state by state basis as well as national totals. The data show that significant numbers of hunters in every region of the country spent at least some of their hunting days in 1985 on wetlands.

Alaska has the highest levels of wetland use in terms of both percent of hunters and days hunted, followed by the Midwest and Southeast, two regions of the country where wetlands are relatively abundant and where wetland losses to agriculture and other uses are of particular concern (Tiner 1984, USDI 1988). The

Table 5: HUNTING ON WETLANDS, BY FWS REGION: 1985

(Population 16 years old or older. Numbers in thousands)

Region	All Hunters	Hunted on Wetlands	Percent of Hunters
U.S.	16,684	6,340	38
Region 1	1,589	498	31
Region 2	2,268	524	23
Region 3	4,477	1,934	43
Region 4	4,255	1,839	43
Region 5	3,890	1,266	33
Region 6	1,779	510	29
Region 7	90	59	66

Table 6: DAYS OF HUNTING ON WETLANDS, BY FWS REGION: 1985

(Numbers in thousands)

Region	All Days	Days on Wetlands	Percent of Days
U.S.	334,013	85,862	26
Region 1	24,422	6,569	27
Region 2	37,007	6,340	17
Region 3	83,556	22,233	27
Region 4	91,537	29,271	32
Region 5	70,951	15,125	21
Region 6	24,344	5,370	22
Region 7	1,163	603	52

- Region 1: California, Hawaii, Idaho, Nevada, Oregon, Washington.
- Region 2: Arizona, New Mexico, Oklahoma, Texas.
- Region 3: Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, Wisconsin.
- Region 4: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee
- Region 5: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia.
- Region 6: Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming.
- Region 7: Alaska.

Table 7: HUNTERS HUNTING ON WETLANDS, BY TYPE OF HUNTING AND FWS REGION: 1985

(Population 16 years old or older. Numbers in thousands)

Region	Big Game Hunters			Small Game Hunters			Migratory Bird Hunters		
	Total	Hunted on Wetlands	Percent	Total	Hunted on Wetlands	Percent	Total	Hunted on Wetlands	Percent
U.S.	12,520	3,546	28	10,831	3,022	28	5,036	2,401	48
Region 1	1,073	130	12	857	239	28	564	314	56
Region 2	1,635	203	12	1,195	247	21	956	288	30
Region 3	3,120	1,154	37	2,951	848	29	884	565	64
Region 4	2,849	1,046	35	2,827	915	32	1,542	651	42
Region 5	3,429	908	26	2,432	543	22	768	358	47
Region 6	1,170	139	12	1,030	275	27	465	280	60
Region 7	72	42	58	38	20	53	23	19	83

TABLE 8: DAYS OF HUNTING ON WETLANDS, BY TYPE OF HUNTING AND FWS REGION: 1985

(Numbers in thousands)

Region	Big Game Days			Small Game Days			Migratory Bird Days		
	Total	Hunted on Wetlands	Percent	Total	Hunted on Wetlands	Percent	Total	Hunted on Wetlands	Percent
U.S.	131,330	28,647	22	132,263	26,370	20	41,683	19,903	48
Region 1	8,963	549	6	9,633	1,953	20	5,355	3,486	65
Region 2	14,572	1,324	9	14,469	2,027	14	6,724	1,874	28
Region 3	27,180	7,530	28	37,881	7,665	20	7,262	4,485	62
Region 4	39,780	11,933	30	33,121	8,288	25	11,941	5,117	43
Region 5	31,682	4,544	5	26,894	4,302	16	5,869	2,584	44
Region 6	8,408	665	8	9,624	1,916	20	4,279	2,210	52
Region 7	654	264	40	412	211	51	171	112	65

- Region 1: California, Hawaii, Idaho, Nevada, Oregon, Washington.
- Region 2: Arizona, New Mexico, Oklahoma, Texas.
- Region 3: Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, Wisconsin.
- Region 4: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee.
- Region 5: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia.
- Region 6: Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming.
- Region 7: Alaska.

TABLE 9: HUNTERS OWNING OR LEASING WETLANDS FOR THE PRIMARY PURPOSE OF HUNTING, BY FWS REGION: 1985

(Numbers in thousands)

Region	Hunters Owning Wetlands	Wetland Acres Owned	Hunters Leasing Wetlands	Wetland Acres Leased
U.S.	99	2,887	449	11,471
Region 1	...	...	14	225
Region 2	...	...	38	1,484
Region 3	57	566	25	821
Region 4	16	2,154	272	7,743
Region 5	...	89	76	831
Region 6	...	...	11	175
Region 7	...	...	...	...

Detail may not add to total because of nonresponse.
... Sample size too small to report data reliably.

- Region 1: California, Hawaii, Idaho, Nevada, Oregon, Washington.
- Region 2: Arizona, New Mexico, Oklahoma, Texas.
- Region 3: Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, Wisconsin.
- Region 4: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee.
- Region 5: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia.
- Region 6: Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming.
- Region 7: Alaska.

Survey also showed that those two regions, especially the Southeast, accounted for the large majority of wetlands owned or leased by hunters primarily for hunting.

This paper has used only summary level estimates from the 1985 Survey about the use of wetlands by hunters to describe the extent of that use in various regions of the United States. If sample sizes are adequate, and whether they are would have to be verified on a case by case basis, the data file could be analyzed on a more narrowly defined basis; use of wetlands by waterfowl hunters in Louisiana compared to waterfowl hunters in North Dakota, for example, given the different kinds of hunting and habitat conditions in those two states. Such analyses could be combined with data from other sources to provide more specific information for policy and management purposes.

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APPENDIX A: HUNTING CATEGORIES

All States, except
Alaska and Hawaii

Big Game

Deer
Elk
Antelope
Moose
Bear
Wild Turkey
Other

Small Game

Rabbits, Hares
Quail
Grouse/Prairie Chicken
Hungarian/Chukar
Squirrels
Pheasant
Other

Migratory Birds

Geese
Ducks
Coots, Rails,
Gallinules
Woodcock
Doves
Band-tailed Pigeon
Other

Other Animals

Crows
Groundhog(Woodchuck)
Raccoon
Fox
Coyote
Prairie Dog
Other

Alaska

Big Game

Deer
Moose
Mountain Goat
Brown/Grizzly Bear
Black Bear
Caribou
Bison
Muskox
Other

Small Game

Hare
Ptarmigan
Spruce Grouse
Ruffed Grouse
Spruce Grouse
Sharp-tailed Grouse
Other

Migratory Birds

Ducks
Geese
Black Brant
Cranes
Snipe
Other

Other Animals

Fox
Coyote
Wolverine
Lynx
Wolf
Other

Hawaii

Big Game

Deer
Wild Turkey
Feral Goat
Feral Sheep
Feral Pigs
Mouflon Sheep
Other

Small Game

Quail
Pheasant
Hungarian/Chukar
Dove(except Mourning Dove)
Francolins
Other

Migratory Birds

Mourning Dove
Other

Other Animals

Mongoose
Other

APPENDIX B: APPROXIMATE STANDARD ERRORS OF HUNTERS HUNTING ON
WETLANDS

(Population 16 years old or older. Numbers in thousands)

State	Standard Error of Hunters on Wetlands	Standard Error of Hunting Days on Wetlands
U.S.	123	3,149
Alabama	17	599
Alaska	3	64
Arizona	8	57
Arkansas	17	569
California	31	819
Colorado	11	257
Connecticut	7	214
Delaware	2	71
Florida	20	736
Georgia	23	629
Hawaii	2	...
Idaho	7	125
Illinois	17	412
Indiana	14	474
Iowa	13	254
Kansas	7	122
Kentucky	10	168
Louisiana	20	680
Maine	7	154
Maryland	12	253
Massachusetts	11	300
Michigan	36	853
Minnesota	26	569
Mississippi	14	298
Missouri	18	313
Montana	6	104
Nebraska	7	131
Nevada	3	287
New Hampshire	5	145
New Jersey	10	275
New Mexico	4	54
New York	29	560
North Carolina	15	450
North Dakota	4	99
Ohio	17	406
Oklahoma	11	421
Oregon	9	178
Pennsylvania	36	565
Rhode Island	2	63
South Carolina	11	396
South Dakota	5	116
Tennessee	11	107
Texas	16	349
Utah	14	109
Vermont	5	96
Virginia	12	549
Washington	24	216
West Virginia	5	58
Wisconsin	13	665
Wyoming	9	108



Your purchase of
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and motorboat fuels supports
Wildlife and Sport Fish Restoration
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