U.S. Fish & Wildlife Service

Birding in the United States: A Demographic and Economic Analysis

Addendum to the 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation

Report 2001-1

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The author thanks Sylvia Cabrera, Richard Aiken, Grant La Rouche, John Charbonneau and Jim Caudill for reviewing earlier drafts of this report.

Introduction

In January 2002 an unprecedented major media event unfolded in a Louisiana swamp. A team of top ornithologists set out to find the ivory-billed woodpecker, a bird last seen in the United States in 1943 and, until a recent credible citing by a turkey hunter, considered extinct in the U.S. The expedition, funded by a corporate sponsor, received worldwide media attention including coverage by the New York Times, USA Today, and National Public Radio.

This high-profile search for the ivory-billed woodpecker is just one indicator of the growing popularization of birds and birding. Other evidence abounds. A field guide, *Sibley's Guide to Birds,* became a New York Times bestseller. And a quick search of the Internet yields numerous birding sites, some of which list hundreds of birding festivals held around the country each year.

"For me, the thrill of bird-watching is catching the glimpse of alien consciousness — the uninflected, murderous eye, the aura of reptilian toughness under the beautiful soft feathers, the knowledge that if I were the size of a sparrow, and a sparrow were as big as I am, it might rip my head off without a second's hesitation."

Jonathan Rosen. The Ghost Bird. *The New Yorker.* 5/14/01.

This growing awareness of birding comes at an odd time; birds are in jeopardy. According to 35-year trend data (1966-2001) from the U. S. Geological Service, almost one-in-four bird species in the United States show "significant negative trend estimates" (Sauer et al. 2003). This decline is attributed primarily to the degradation and destruction of habitat resulting from human population growth and short-sighted environmental practices such as the razing of wetlands

American Kestral (*Falco sparverius*) by Dave Menke, USFWS

needed by migratory birds. Although there is a certain irony in people becoming enthusiastic about birds as they disappear, it also presents an opportunity: birders may be the economic and political force that can help save the birds.

The following report provides up-to-date information so birders and policy makers can make informed decisions regarding the protection of birds and their habitats. This report identifies who birders are, where they live, how avid they are, where they bird and what kinds of birds they watch. In addition to demographic information, this report also provides two kinds of economic measures. The first is an estimate of how much birders spend on their hobby and the economic impact of these expenditures. The second is the net economic value of birding, that is, the value of birding to society.

By understanding who birders are, they can be more easily educated about pressures facing birds and bird habitats. Conversely, by knowing who is likely *not* a birder, or who is potentially a birder, information can be more effectively tailored. The economic values presented here can be used by resource managers and policy makers to demonstrate the economic might of birders, the value of birding — and by extension, the value of birds. In fact, research shows that these kinds of values help wildlife managers make better decisions and illustrate the value of wildlife to American society (Loomis 2000).

All data presented here is from the wildlife-watching section of the 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR). It is the most comprehensive survey of wildlife recreation in the U.S. Overall, 15,300 detailed wildlife-watching interviews were completed with a response rate of 90 percent. The Survey focused on 2001 participation and expenditures by U.S. residents 16 years of age and older.

Jim Hudgins, USFWS

Birding Trends

Is birding increasing? Despite recent popularization (high visibility within the media and popular culture and increased recognition of the sport within American homes) of birding, past FHWAR Survey results point to a more complicated story. A comparison of results from the 1991, 1996, and 2001 estimates show that bird-watching around the home has decreased rather than increased over that 10-year period (USFWS). In 1991, 51.3 million people reported observing birds around their homes. In 1996 that number dropped to 42.2 million and in 2001 to 40.3 million. Because the 2001 Survey is the first time people were asked if they specifically watched birds on trips away from home, it cannot be said conclusively if this activity increased or decreased. However, in all three Surveys, people were asked if they observed, fed, or photographed birds away from home. These numbers indicate a net decrease in away-from-home birding from 24.7 million in 1991 to 18.5 million in 2001 but a slight uptick from 1996 (17.7 million) to 2001.

Birders

In 2001 there were 46 million bird-watchers or birders, 16 years of age and older, in the United States — a little over one in five people. What is a birder? The National Survey uses a conservative definition. To be counted as a birder, an individual must have either taken a trip a mile or more from home for the primary purpose of observing birds and/or closely observed or tried to identify birds around the home. So people who happened to notice birds while they were mowing the lawn or picnicking at the beach were not counted as birders. Trips to zoos and observing captive birds also did not count.

Backyard birding or watching birds around the home is the most common form of bird-watching. Eighty-eight percent (40 million) of birders are backyard birders. The more active form of birding, taking trips away from home, is less common with 40 percent (18 million) of birders partaking.

Red-winged Blackbirds *(Agelaius phoeniceus)* by John and Karen Hollingsworth, USFWS

Chart 1. Birders in the United States: 2001
(16 years of age and older.)

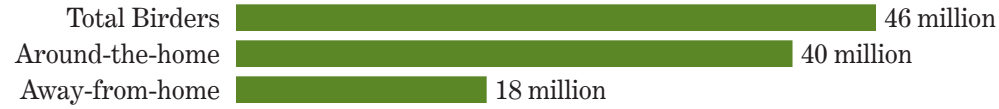
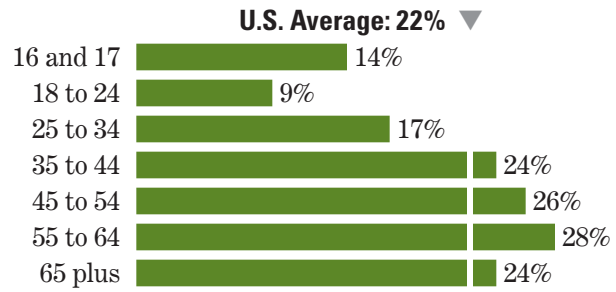


Table 1. Age Distribution of the U.S. Population and Birders: 2001
(Population 16 years of age and older. Numbers in thousands.)

Age	*U.S. Population*	*Number of Birders*	*Participation Rate*
16 and 17	7,709	1,043	14%
18 to 24	22,234	1,894	9%
25 to 34	35,333	5,990	17%
35 to 44	44,057	10,414	24%
45 to 54	40,541	10,541	26%
55 to 64	25,601	7,177	28%
65 plus	36,823	8,893	24%

Chart 2. Birders' Participation Rate by Age



The average birder is 49 years old and more than likely has a better than average income and education. She is slightly more likely to be female, and highly likely to be white and married. There is also a good chance that this birder lives in the northern half of the country in a small city or town. Does this paint an accurate picture of a birder? Like all generalizations the description of an "average" birder does not reflect the variety of people who bird, with millions falling outside this box. The tables and charts show in numbers and participation rates (the percentage of people who participate) birders by various demographic breakdowns.

The tendency of birders to be middle-age or older is reflected in both the number of birders and participation rates. Looking at the different age breakdowns in Table 1, the greatest number of birders were in the 35 to 44 and 45 to 54 age groups. People age 55 to 64 had the highest participation rates while the participation rate was particularly low for people ages 18 to 24. Birders who take trips away from home to pursue their hobby were on average slightly younger at 45 years old compared to backyard birders who were on average 50 years old.

Tina Watson, USFWS

The higher the income and education level the more likely a person is to be a birder. Twenty-seven percent of people who live in households that earn $75,000 or more were bird-watchers — 5 percent above the national average of 22 percent. Education, which is often highly correlated with income, shows the same trend. People with less than high school education participated at 14 percent — far below the national average — while people with five or more years of college had the highest participation rate at 33 percent. See Tables 2 and 3 for more information.

Table 2. Income Distribution of the U.S. Population and Birders: 2001
(Population 16 years of age and older. Numbers in thousands.)

Income	*U.S. Population*	*Number of Birders*	*Participation Rate*
Less than $10,000	10,594	2,212	21%
$10,000 to $19,000	15,272	2,754	18%
$20,000 to $24,000	10,902	2,335	21%
$25,000 to $29,000	11,217	2,392	21%
$30,000 to $34,000	11,648	2,618	22%
$35,000 to $39,000	9,816	2,005	20%
$40,000 to $49,000	16,896	4,116	24%
$50,000 to $74,000	31,383	7,476	24%
$75,000 to $99,000	17,762	4,771	27%
$100,000 or more	19,202	5,224	27%

Detail does not add to total due to non-response.

Chart 3. Birders' Participation Rate by Income

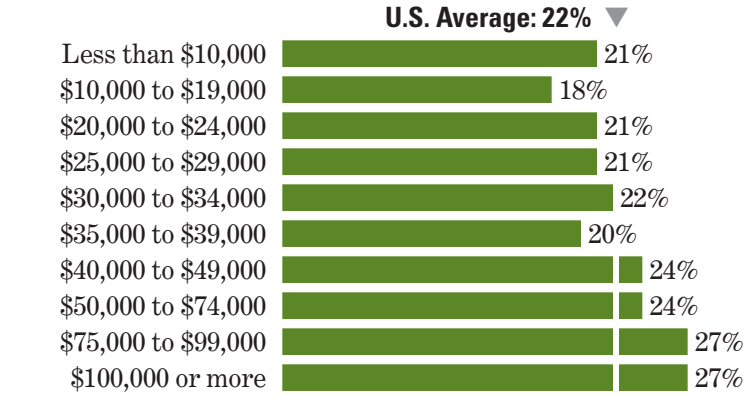


Table 3. Educational Distribution of the U.S. Population and Birders: 2001
(Population 16 years of age and older. Numbers in thousands.)

	U.S. Population	*Number of Birders*	*Participation Rate*
11 years or less	32,820	4,627	14%
12 years	73,719	13,933	19%
1 to 3 years college	49,491	11,363	23%
4 years college	34,803	8,922	26%
5 years or more college	21,646	7,107	33%

Chart 4. Birders' Participation Rate by Education

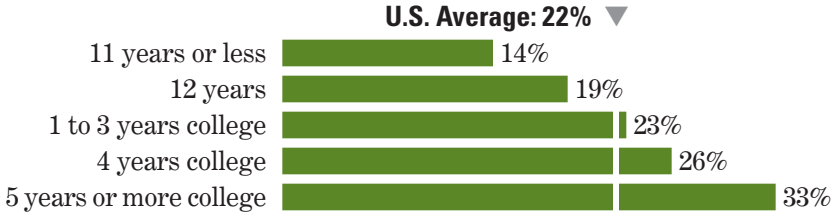
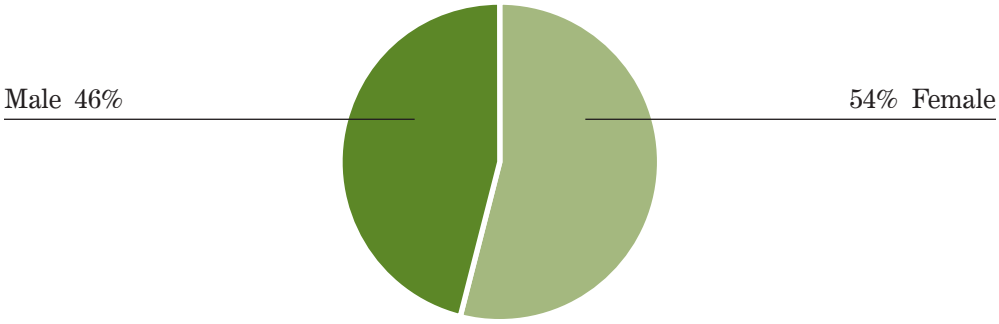
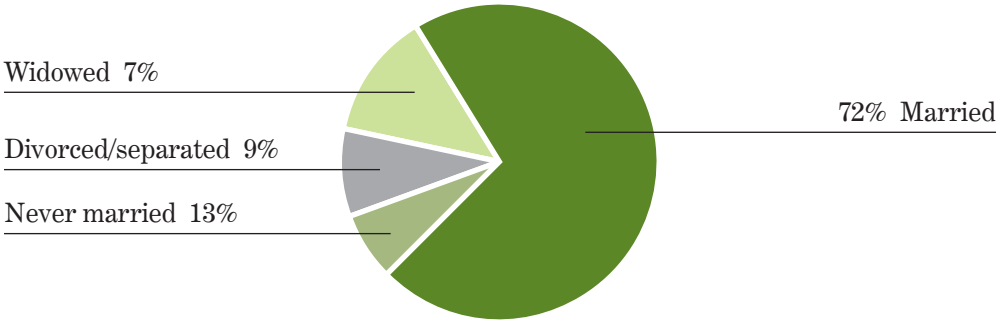


Chart 5. Percent of Birders — by Gender
(Population 16 years of age and older. Numbers in thousands.)



Unlike hunting and fishing where men were overwhelmingly in the majority, a slightly larger percent of birders were women — 54 percent in 2001. And most birders, 72 percent, were married.

Chart 6. Percent of Birders — by Marital Status



Tami Heilemann, DOI

Excepting Native American participation, birders are not a racially or ethnically diverse group. Ninety-four percent of birders identified themselves as white. The scarcity of minority birders is not just a reflection of their relatively low numbers in the population at large, it's also a function of low participation rates. The participation rates of African-Americans, Asians, and Hispanics were all 9 percent or lower while the rate for whites, 24 percent, was slightly above the 22 percent national average. Native Americans on the other hand had a participation rate (22 percent) on par with the national average.

The sparser populated an area, the more likely its residents were to watch birds. The participation rate for people living in small cities and rural areas was 28 percent — 6 percent above the national average. Whereas large metropolitan areas (1 million residents or more) had the greatest number of birders, their residents had the lowest participation rate, 18 percent. See Table 5.

Table 4. Racial and Ethnic Distribution of the U.S. Population and Birders: 2001
(Population 16 years of age and older. Numbers in thousands.)

	U.S. Population	*Number of Birders*	*Participation Rate*
Hispanic	21,910	1,880	9%
White	181,129	43,026	24%
African American	21,708	1,243	6%
Native American	1,486	321	22%
Asian	7,141	436	6%
Other	833	55	7%

Chart 7. Birders' Participation Rate by Race and Ethnicity

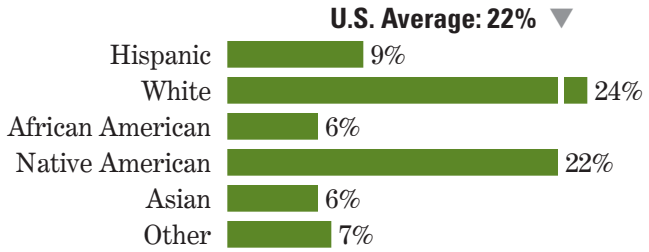
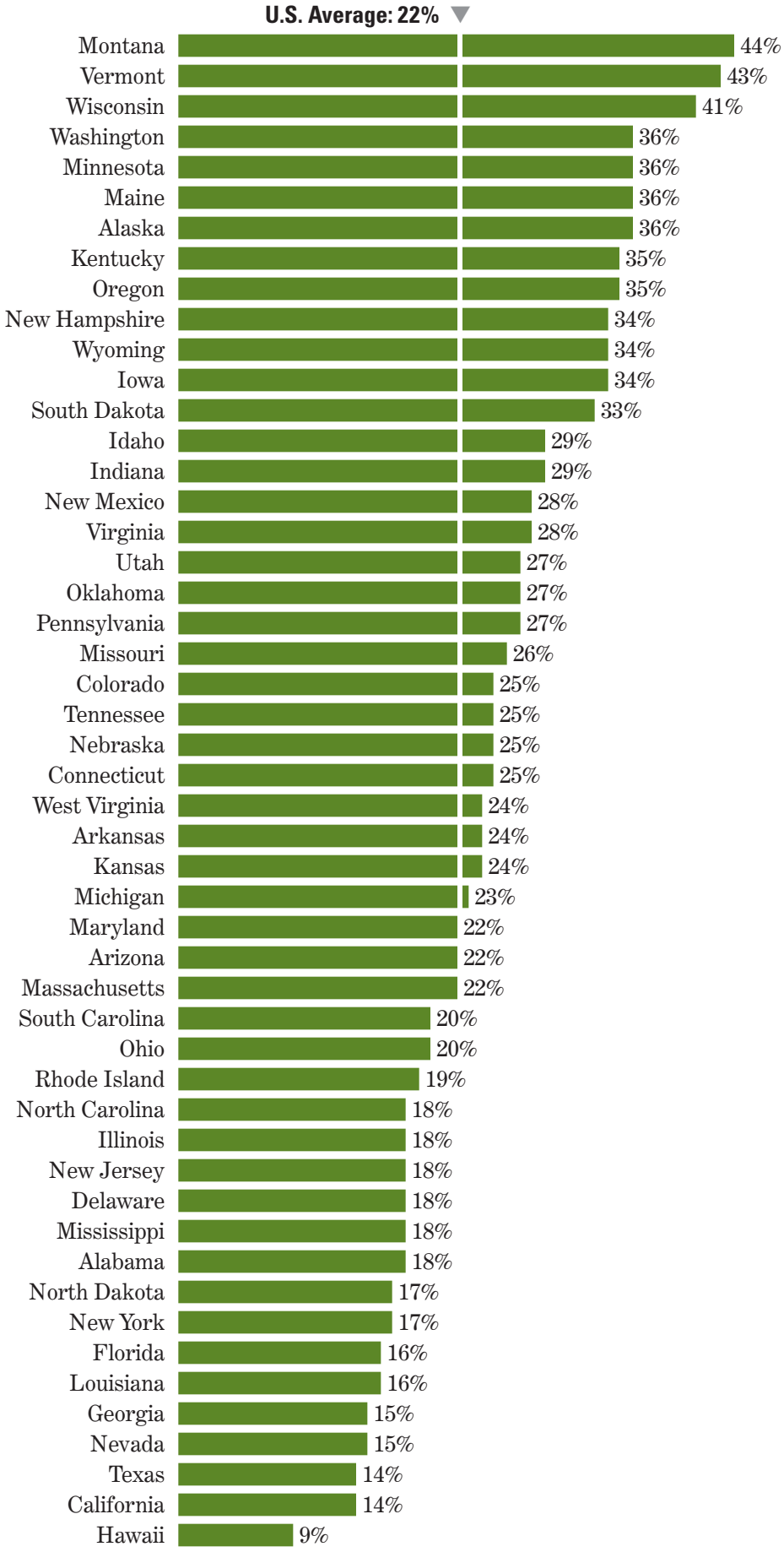


Table 5. Percent of U.S. Population Who Birded by Residence: 2001
(Population 16 years of age and older. Numbers in thousands.)

Metropolitan Statistical Area (MSA)	*U.S. Population*	*Number of Birders*	*Participation Rate*
1,000,000 or more	112,984	20,868	18%
250,000 to 999,999	41,469	8,991	22%
50,000 to 249,000	16,693	4,622	28%
Outside MSA	41,151	11,470	28%

Prothonotary Warbler *(Protonotaria citrea)* by John and Karen Hollingsworth, USFWS

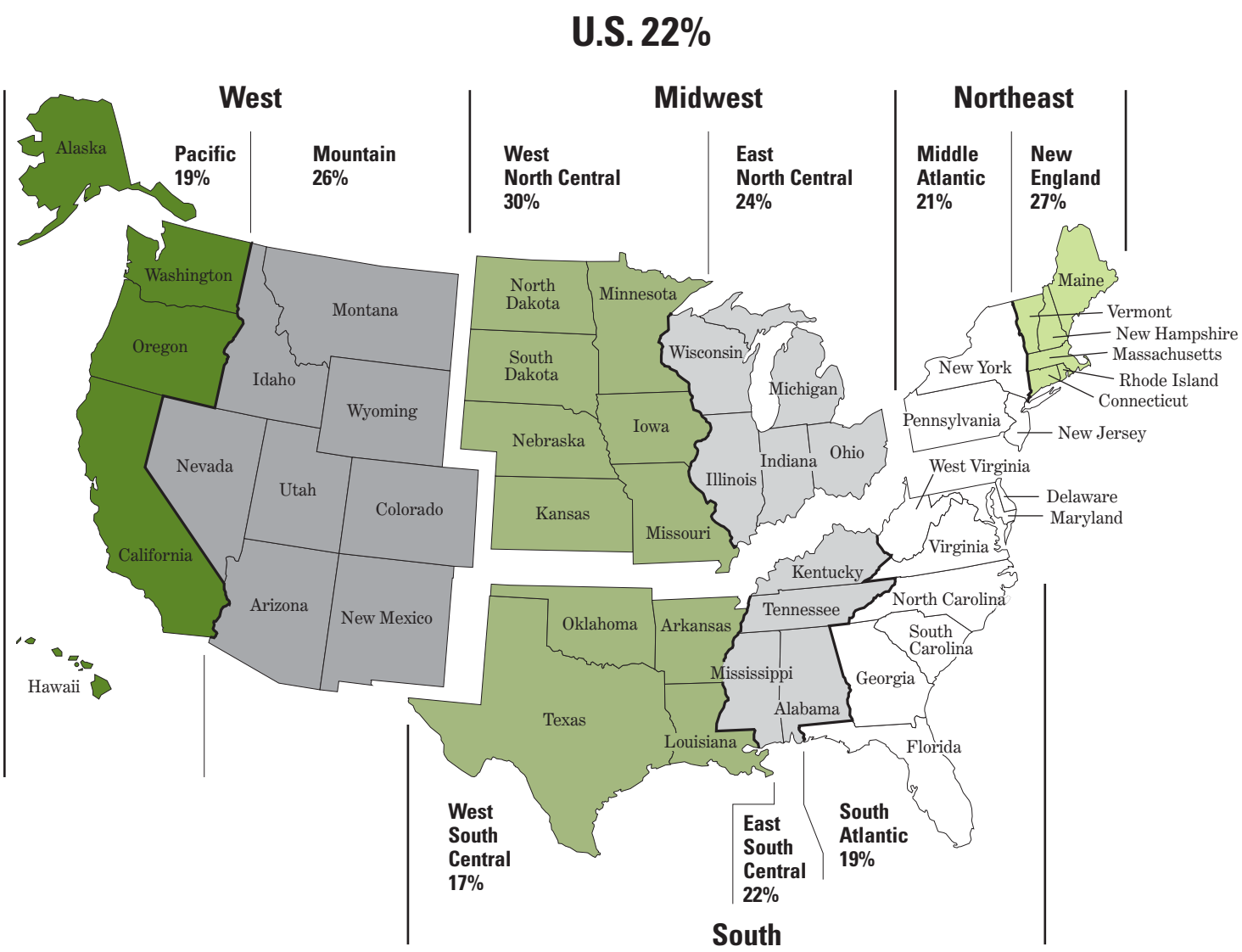
Chart 8. Birding Participation Rates by State Residents: 2001
(Population 16 years of age and older)



When measured in terms of the percent of state residents participating, states in the northern half of the United States generally had higher levels of participation than did states in the southern half. While 44 percent of Montanans and 43 percent of Vermonters watched birds, only 14 percent of Californians and Texans did. See Chart 8.

Jim Hudgins, USFWS

Figure 1. Birders' Participation Rates by Region of Residence: 2001
(Population 16 years of age and older. Numbers in thousands.)



The participation rate was highest (30%) in the West North Central region of the United States (see Figure 1). The New England states had the second highest participation rate at 27 percent with a close third going to the Rocky Mountain states (26 percent). The West South Central states had the lowest rate of 17 percent while the Pacific and South Atlantic states yielded slightly higher rates, both 19 percent. However, in terms of sheer numbers, the Pacific and South Atlantic states had the most resident birders — 7 million and 8 million respectively, while New England had the least, 3 million.

Table 6. Birding by State Residents and Nonresidents: 2001
(Population 16 years of age and older. Numbers in thousands.)

State	*Total Birders*	*Percent State Residents*	*Percent Nonresidents*
Alabama	703	90	10
Alaska	321	51	49
Arizona	1,168	70	30
Arkansas	548	88	12
California	3,987	91	9
Colorado	1,077	74	26
Connecticut	732	88	12
Delaware	172	63	37
Florida	2,363	80	20
Georgia	1,063	84	16
Hawaii	164	48	52
Idaho	478	60	40
Illinois	1,815	90	10
Indiana	1,423	94	6
Iowa	813	93	7
Kansas	569	87	13
Kentucky	803	91	9
Louisiana	608	86	14
Maine	595	61	39
Maryland	1,068	82	18
Massachusetts	1,263	86	14
Michigan	1,961	88	12
Minnesota	1,471	90	10
Mississippi	437	88	12
Missouri	1,299	85	15
Montana	558	55	45
Nebraska	386	83	17
Nevada	343	63	37
New Hampshire	569	57	43
New Jersey	1,335	85	15
New Mexico	531	70	30
New York	2,802	88	12
North Carolina	1,296	80	20
North Dakota	134	60	40
Ohio	1,899	93	7
Oklahoma	760	91	9
Oregon	1,187	77	23
Pennsylvania	2,721	91	10
Rhode Island	193	76	25
South Carolina	742	84	16
South Dakota	271	68	32
Tennessee	1,420	76	24
Texas	2,268	94	6
Utah	616	67	33
Vermont	383	53	47
Virginia	1,818	86	14
Washington	1,877	86	14
West Virginia	428	80	20
Wisconsin	1,944	86	14
Wyoming	388	33	67

Bird watching by state residents tells only part of the story. Many people travel out-of-state to watch birds and some states are natural birding destinations. Wyoming reaped the benefits of this tourism with a whopping 67 percent of their total birders coming from other states. The scenic northern states of New Hampshire, Vermont, Montana, and Alaska also attracted many birders — all had more than 40 percent of their total birders coming from other states.

Where and What Are They Watching?
Backyard birding is the most prevalent form of birding with 88 percent of participants watching birds from the comfort of their homes. Forty percent of birders travel more than a mile from home to bird, visiting a variety of habitats on both private and public lands.

Of the 18 million Americans who ventured away from home to watch birds, public land rather than private land was visited more frequently, although many visited both. Eighty-three percent of birders used public land such as parks and wildlife refuges, 42 percent used private land, and 31 percent visited both. See Chart 9.

The most popular setting to observe birds was in the woods (73%), followed by lakes and streamside areas (69%) and brush-covered areas and fields (62% and 61%). Less popular sites were the ocean (27%) and manmade areas (31%) such as golf courses and cemeteries. See Table 7.

What kinds of birds are they looking at? Seventy-eight percent reported observing waterfowl, making them the most spied on type of bird. Songbirds were also popular with 70 percent of birders watching them, followed in popularity by birds of prey (68%) and other water birds such as herons and shorebirds (56%). See Chart 10.

Table 7. Sites Visited by Away-From-Home Birders: 2001
(Population 16 years of age and older. Numbers in thousands.)

	Number of Birders	*Percent*
Total, all birders	18,342	100
Woodland	13,405	73
Lake and Streamside	12,615	69
Brush-covered areas	11,324	62
Open field	11,184	61
Marsh, wetland, swamp	8,632	47
Man-made area	5,770	31
Oceanside	4,921	27
Other	2,418	13

* Detail does not add to total because of multiple responses.

Chart 9. Percent of Away-From-Home Birders — by Public and Private Land Visited

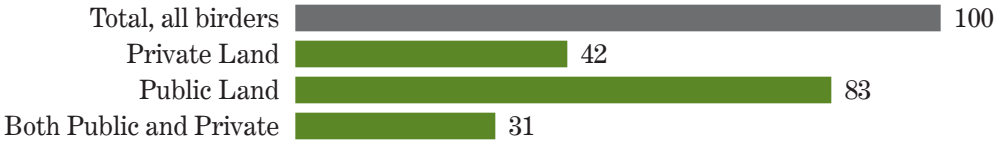
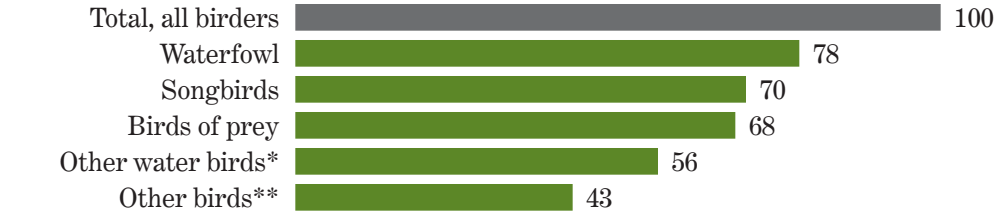


Chart 10. Percent of Away-From-Home Birders — by Type of Birds Observed



*shorebirds, herons, etc.
**pheasants, turkeys, etc.

Kathryn Trusten, USDA FS

Chart 11. Percent of Around-the-Home Birders Who Can Identify Birds by Sight or Sound

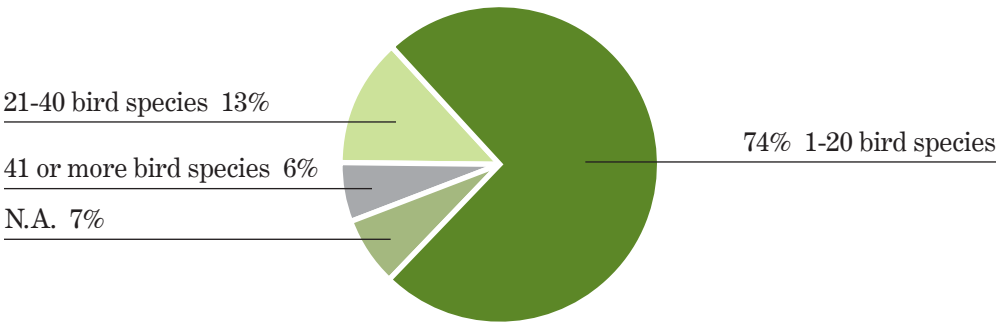
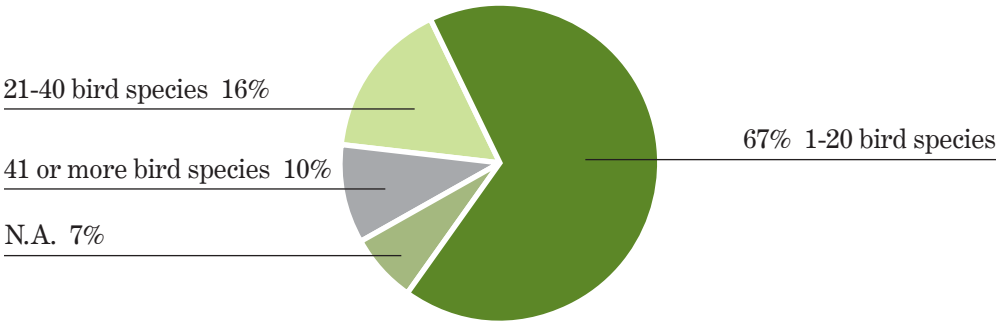


Chart 12. Percent of Away-From-Home Birders Who Can Identify Birds by Sight or Sound



Avidity Trends

If we can't say there are more birders can we say that birders are more knowledgeable about their hobby than in the past? In order to gauge birders' avidity and level of expertise, the 2001 Survey asked birders how many birds they can identify — a question last asked in the 1980 Survey* (USFWS). A comparison of responses show that skill levels did not change much in that 20 year time period. For both years, the same percent, 74, was in the beginner category (1 to 20 species of birds) and roughly the same percent, 13 and 14, respectively, fell into the intermediate (21 to 40 birds) level. A slightly higher percentage of expert birders, however, (41 or more species) was found in the 2001 Survey, 8 percent versus 5 percent in the 1980 Survey. Yet in another sign that the more things change the more they stay the same, almost the same portion, 4 and 5 percent, kept birding life lists.

Table 8. Percent of Birders* Who Can Identify Birds by Sight or Sound and Who Kept Birding Life Lists: 1980 and 2001 Comparison

	1980	*2001*
1-20 bird species	74%	74%
21-40 bird species	14%	13%
41 or more bird species	5%	8%
Kept bird life list	4%	5%

* In 1980 the question was asked of all wildlife-watchers (formerly called non-consumptive) and in 2001 the question was asked of only birders.

Avidity

All people identified as birders in this report said that they took an active interest in birds — defined as trying to closely observe or identify different species. But what is the extent of their interest? In order to determine their "avidity" the following factors were considered: the number of days spent birdwatching; the number of species they could identify; and if they kept a bird life list.

Presumably because of the relative ease of backyard birding, birders around the home spent nine times as many days watching birds as did people who traveled more than a mile from home to bird watch. In 2001, the median number of days for backyard birders was 90 and for away-from-home birders it was 10.

Although birders are investing a fair amount of time pursuing their hobby, most do not appear to have advanced identification skills. Seventy-four percent of all birders could identify only between 1 to 20 different types of bird species, 13 percent could identify 21 to 40 birds and only 8 percent could identify more than 41 species. Skill levels are higher for birders who travel from home to bird watch compared to backyard birders — 10 percent of away-from-home birders could identify 41 or more birds as opposed to 6 percent of backyard birders.

Tallies of birds seen during a birder's life, sometimes called birding life lists, were kept by only 5 percent of birders. This was roughly the same for backyard birders and away-from-home birders alike.

The Economics of Bird Watching

Measures of Economic Value

Putting a dollar figure on birding can appear a tricky business. How can dollars be used to value something as intangible as the enjoyment of birds and birding? Looked at from a practical perspective we live in a world of competing resources and dollars. Activities such as golfing and industries such as computer software are regularly described in terms of jobs generated and benefits to consumers. The same economic principles that guide the measure of golf and software apply also to birding.

Expenditures by recreationists and net economic values are two widely used but distinctly different measures of the economic value of wildlife-related recreation. Money spent for binoculars in a store or a sandwich in a deli on a trip has a ripple effect on the economy. It supplies money for salaries and jobs which in turn generates more sales and more jobs and tax revenue. This is economic output or impact, the direct and indirect impact of birders' expenditures and an example of one of two economic values presented in this paper. Economic impact numbers are useful indicators of the importance of birding to the local, regional, and national economies but do not measure the economic benefit to an individual or society because, theoretically, money not spent on birding (or golf, or software) would be spent on other activities, be it fishing or scuba diving. Money is just transferred from one group to another. However, from the perspective of a given community or region, out-of-region residents spending money for birding represents real economic wealth.

Another economic concept is birding's economic benefit to individuals and society: the amount that people are willing to pay over and above what they actually spend to watch birds. This is known as net economic value, or consumer surplus, and is the appropriate economic measure of the benefit to individuals from participation in wildlife-related recreation (Bishop, 1984; Freeman, 1993; Loomis et al., 1984; McCollum et al. 1992). The benefit to society is the summation of willingness to pay across all individuals.

Net economic value is measured as participants' "willingness to pay" above what they actually spend to participate. The benefit to society is the summation of willingness to pay across all individuals. There is a direct relationship between expenditures and net economic value, as shown in Figure 2. A demand curve for a representative birder is shown in the figure. The downward sloping demand curve represents marginal willingness to pay per trip and indicates that each additional trip is valued less by the birder than the preceding trip. All other factors being equal, the lower the cost per trip (vertical axis) the more trips the birder will take (horizontal axis). The cost of a birding trip serves as an implicit price for birding since a market price generally does not exist for this activity. At $60 per trip, the birder would choose not to watch birds, but if birding were free, the birder would take 20 birding trips.

At a cost per trip of $25 the birder takes 10 trips, with a total willingness to pay of $375 (area acde in Figure 2). Total willingness to pay is the total value the birder places on participation. The birder will not take more than 10 trips because the cost per trip ($25) exceeds what he would pay for an additional trip. For each trip between zero and 10, however, the birder would actually have been willing to pay more than $25 (the demand curve, showing marginal willingness to pay, lies above $25).

The difference between what the birder is willing to pay and what is actually paid is net economic value. In this simple example, therefore, net economic value is $125 (($50 – $25) 10 ÷ 2) (triangle bcd in Figure 2) and birder expenditures are $250 ($25 × 10) (rectangle abde in Figure 2). Thus, the birder's total willingness to pay is composed of net economic value and total expenditures. Net economic value is simply total willingness to pay minus expenditures. The relationship between net economic value and

Figure 2. Individual Birder's Demand Curve for Birding Trips

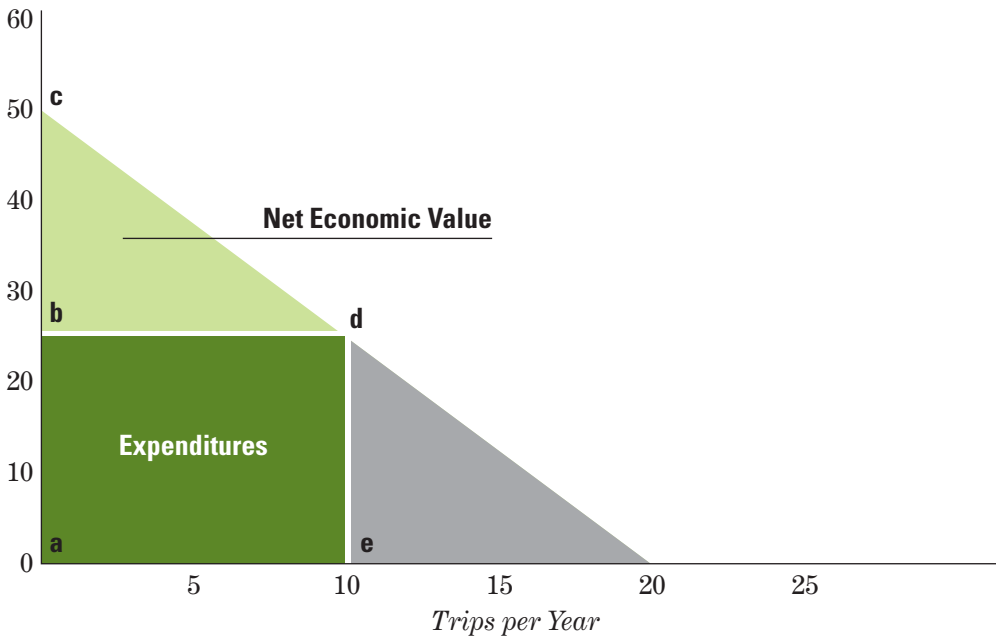


Table 9. Birders' Expenditures for Wildlife Watching: 2001
(Population 16 years of age and older. Thousands of dollars.)

Expenditure item	*Expenditures ($)*
Total, all items	**31,686,673**
Trip-Related Expenditures	
Total, trip-related	7,409,679
Food	2,646,224
Lodging	1,851,206
Public transportation	682,202
Private transportation	1,790,951
Guide fees, pack trip or package fees	110,374
Private land use fees	48,999
Public land use fees	108,414
Boating costs	135,381
Heating and cooking fuel	35,928
Equipment and Other Expenses	
Total, equipment and other expenses	24,276,994
Wildlife-watching equipment, total	6,010,141
Binoculars, spotting scopes	471,264
Cameras, video cameras, special lenses, and other photographic equipment	1,431,807
Film and developing	837,868
Bird food	2,239,259
Nest boxes, bird houses, feeders, baths	628,060
Daypacks, carrying cases and special clothing	288,648
Other wildlife-watching equipment (such as field guides, and maps)	113,235
Auxiliary equipment, total	523,700
Tents, tarps	163,999
Frame packs and backpacking equipment	121,217
Other camping equipment	238,835
Other auxiliary equipment (such as blinds)	117,267
Special equipment, total	11,158,302
Off-the-road vehicle	5,512,624
Travel or tent trailer, pickup, camper, van, motor home	4,657,752
Boats, boat accessories	946,688
Other	41,238
Magazine	297,780
Land leasing and ownership	4,197,666
Membership dues and contributions	808,101
Plantings	639,986

Facts-at-a-Glance

46 *Million Birders*

$32 *Billion in Retail Sales*

$85 *Billion in Overall Economic Output*

$13 *Billion in State and Federal Income Taxes*

863,406 *Jobs Created*

expenditures is the basis for asserting that net economic value is an appropriate measure of the benefit an individual derives from participation in an activity and that expenditures are not the appropriate benefit measure.

Expenditures are out-of-pocket expenses on items a birder purchases in order to watch birds. The remaining value, net willingness to pay (net economic value), is the economic measure of an individual's satisfaction after all costs of participation have been paid.

Summing the net economic values of all individuals who participate in an activity derives the value to society. For our example let us assume that there are 100 birders who bird watch at a particular wildlife refuge and all have demand curves identical to that of our typical birder presented in Figure 2. The total value of this wildlife refuge to society is $12,500 ($125 × 100).

Birders' Expenditures and Economic Impact

Birders spent an estimated $32 billion (see Table 9) on wildlife-watching in 2001. This estimate includes money spent for binoculars, field guides, bird food, bird houses, camping gear, and big-ticket items such as boats. It also includes travel-related costs such as food and transportation costs, guide fees, etc.

When using the numbers in Tables 9 and 10 it is important to know that these dollar figures represent the money birders spent for all wildlife-watching recreation — not just birding. The 2001 Survey collected expenditure data for people who fed, photographed, or observed wildlife. Expenditure data was not collected solely for birding. It is possible that people who watched birds in 2001 may have spent money on other

Table 10. Economic Impact of Birders: 2001*
(Population 16 years of age and older.)

Retail Sales (expenditures)	$31,686,673,000
Economic Output	$84,931,020,000
Salaries and Wages	$24,882,676,000
Jobs	863,406
State Income taxes	$4,889,380,000
Federal Income taxes	$7,703,308,000

* Amount that birders spent on all wildlife watching.

types of wildlife-related recreation such as binoculars for whale-watching or gas for a moose-watching trip rather than only bird-watching. Therefore, these estimates for birding expenditures may be overestimates.

This $32 billion that birders spent generated $85 billion in economic benefits for the nation in 2001. This ripple effect on the economy also produced $13 billion in tax revenues and 863,406 jobs. For details on economic impact estimation methods see Appendix A.

The sheer magnitude of these numbers proves that birding is a major economic force, driving billions in spending around the county. On a local level, these economic impacts can be the life-blood of an economy. Towns such as Cape May, New Jersey, and Platte River, Nebraska, attract thousands of birding visitors a year generating millions of dollars — money that would likely otherwise be spent elsewhere.

Estimated Net Economic Values

As stated earlier, the willingness to pay above what is actually spent for an activity is known as net economic value. This number is derived here by using a survey technique called contingent valuation (Mitchell and Carson, 1989). Respondents to the 2001 Survey were asked a series of contingent valuation (CV) questions to determine their net willingness to pay for a wildlife watching trip. *Please note that the data presented here are net economic values for wildlife watching trips — not for bird watching trips solely.* However, since the vast majority of away-from-home wildlife watchers are birders (84 percent), the values presented here are acceptable for use in valuing birding trips. For details on net economic value estimation methods please see Appendix A.

As seen in Table 11, the net economic value per year for a wildlife watcher in their resident state is $257 per year or $35 per day. Wildlife watchers who travel outside their state have a different demand curve (they generally take fewer trips and spend more money) and therefore have their own net economic values of $488 per year and $134 per day.

When and how can these values be used? These numbers are appropriate for any project evaluation that seeks to quantify benefits and costs. They can be used to evaluate management decisions (actions) that increase or decrease participation rates. In a simple example, if a wildlife refuge changed its policies and allowed 100 more birders to visit per year, the total value to society due to this policy change would be $25,700 ($257 × 100) per year (assuming all visitors are state residents). This value, however, assumes that these 100 birders could and would watch birds only at this refuge and that they would take a certain number of trips to this refuge. In a more realistic example, if the refuge changed its policy and stayed open two more weeks a year and knew that 100 people visited each day during this period then the benefit to society could be estimated by multiplying the number of people by days (100 × 14) by the average value per day ($35) for a total of $49,000. If the refuge had data on the number of in-state and out-of-state visitors then the numbers could be adjusted to reflect their appropriate value.

Net economic values also can be used to evaluate management actions that have a negative affect on wildlife watching. For example, if a wildlife sanctuary was slated for development and birders were no longer able to use the site, and if the sanctuary manger knew the number of days of birding over the whole year (e.g, 2,000 days) it is possible to develop a rough estimate of the loss from this closure. This estimate is accomplished by multiplying net economic value per day ($35) by the days of participation (2,000) for a value of $70,000 per year.

Two caveats exist to the examples above: (1) if bird watchers can shift their birding to another location then the values are an over-estimate; and (2) if a loss of wildlife habitat causes an overall degradation in the number of birds and in the quality of birding then the values are an under-estimate.

Table 11. Net Economic Values for Wildlife Watching: 2001
(Population 16 years of age and older.)

	Net economic value per year	*Standard error of the mean*	*95 percent confidence interval*	*Net economic value per day of birdwatching*	*Standard error of the mean*	*95 percent confidence interval*
State Residents	$257	12	$233 – 282	$35	2	$32 – 39
Nonresidents	$488	37	$415 – 561	$134	12	$110 – 158

Conclusion

Back in Louisiana, the search for the ivory-billed woodpecker ended in disappointment. After an exhaustive two week search, none were found. Optimism, however, continues to prevail. In a group statement the expedition team said they think the bird may exist based on the availability of good quality habitat and other evidence.

This optimism of always looking hopefully into the next tree is the esprit-de-corps of birders. As this report shows, birders come from many walks of life and watch a variety of birds in different settings. Their enthusiasm for birding also translates into spending, thereby contributing significantly to national and local economies. The high values birders place on their birding trips is a solid indicator of birding's benefit to society.

While the numbers of birders may not have grown statistically, the power of a mobilized birding community and the willingness of mass media sources and the general public to give play to birding issues has an impact felt deeply in the economy and promotes the sustainability of bird habitats. Hopefully, the information in this report will allow resource managers and policy makers to make informed management decisions when birds and birding are involved.

Grant La Rouche

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Cape May Warbler *(Dendroica tigrina)* by Steve Maslowski, USFWS

Appendix A. Methods

Economic Impact Methods

The 2001 National Survey contains estimates of annual travel and equipment expenditures by wildlife-watching participants. Travel expenditures were obtained only for away-from-home participants while equipment expenditures were obtained for both around-the-home and away-from-home wildlife watchers. To obtain the economic impact figures, these expenditures were used in conjunction with an economic modeling method known as input-output analysis. The estimates of economic activity, jobs, and employment income were derived using IMPLAN, a regional input-output model and software system. State and federal tax impacts are based on industry-wide averages for each industrial sector.

Contingent Valuation Methods

Using expenditure and trip data collected from respondents earlier in the survey, respondents were presented with their average number of wildlife-watching trips in 2001 and average cost per trip. If the respondents did not think this information was accurate they were allowed to change it to what they thought was the accurate number of trips and/or an accurate cost per-trip. The respondent was then asked how much money would have been too much to pay per trip. This question was reiterated in another form in case there was misunderstanding (the full series of questions is in Appendix B). Assuming a linear demand curve, annual net economic value was then calculated using the difference between current cost and the maximum cost at the intercept and the number of trips taken in 2001.

The valuation sequence was posed in terms of numbers of trips and cost per trip because respondents were thought more likely to think in terms of trips. The economic values here are reported in days to facilitate their use in analysis.

Outliers were deleted if respondents answered in a way that resulted in zero or negative willingness to pay. Observations were also dropped from the sample if the CV responses resulted in an annual net economic value for an activity that exceeded 5 percent of an individual's household income.

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Appendix B. Contingent Valuation Section from the 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

RESIDENT STATE

Note: These series of questions were asked about ALL trips taken for the PRIMARY PURPOSE of observing, photographing, or feeding wildlife during the ENTIRE calendar year of 2001 in the respondent's state of residence.

You reported taking [X] trips for the PRIMARY PURPOSE of observing, photographing, or feeding wildlife in [RESIDENT STATE]. Is that correct?

1—Yes
2—No

[IF NO] How many trips did you take for the PRIMARY PURPOSE of observing, feeding or photographing wildlife in [RESIDENT STATE] (from Wave 1) during 2001?

Zero was allowed as a valid response.

In your current and/or previous interview(s), you reported that you spent on average $[X] per trip during 2001 where your PRIMARY PURPOSE was to observe, photograph, or feed

wildlife in [RESIDENT STATE] . Would you say that cost is about right?

1—Yes
2—No

[IF NO] How much would you say is the average cost of your current and/or previous trip(s) during 2001 where your PRIMARY PURPOSE was to observe, photograph, or feed wildlife in [resident state]? If you went with family or friends, include ONLY YOUR SHARE of the cost.

Zero was allowed as a valid response.

What is the most your trip(s) to observe, photograph, or feed wildlife in [RESIDENT STATE] could have cost you per trip last year before you would NOT have gone at all in 2001, not even one trip, because it would have been too expensive? Keep in mind that the cost per trip of other kinds of recreation would not have changed.

Zero was allowed as a valid response.

So, in other words, [X] would have been too much to pay to take even one trip to observe, photograph, or feed wildlife in 2001 in [RESIDENT STATE] ?

1—Yes
2—No

[IF NO] How much would have been too much to pay to take even 1 trip to feed, photograph, or observe wildlife in 2001 in [RESIDENT STATE] ?

Zero was allowed as a valid response.

RANDOM STATE NOT EQUAL TO RESIDENT STATE

Note: These series of questions were asked about ALL trips taken for the PRIMARY PURPOSE of observing, photographing, or feeding wildlife during the ENTIRE calendar year of 2001 in a state other than the respondent's state of residence. If the respondent took a trip in more than one state as a nonresident, one state was randomly chosen.

You reported taking [X] trip(s) for the PRIMARY PURPOSE of observing, photographing, or feeding wildlife in [STATE]. Is that correct?

1—Yes
2—No

[IF NO] How many trips did you take for the PRIMARY PURPOSE of observing, feeding and photographing wildlife in [STATE] during 2001?

Zero was allowed as a valid response.

In your current and/or previous interview(s), you reported that you spent on average $ [X] per trip during 2001 where your PRIMARY PURPOSE was to observe, photograph, and feed wildlife in [STATE]. Would you say that cost is about right?

1—Yes
2—No

How much would you say was the average cost of your current and/or previous trip(s) during 2001 where your PRIMARY PURPOSE was to observe, photograph, and feed wildlife in [STATE]? If you went with family or friends, include ONLY YOUR SHARE of the cost.

Zero was allowed as a valid response.

What is the most your trip(s) to observe, photograph, or feed wildlife in [STATE] could have cost you per trip last year before you would NOT have gone at all in 2001, not even one trip, because it would have been too expensive? Keep in mind that the cost per trip of other kinds of recreation would not have changed.

Zero was allowed as a valid response.

So, in other words, [X] is too much to pay to take even one trip to observe, photograph, or feed wildlife in 2001 in [STATE]?

1—Yes
2—No

[IF NO] How much would be too much to pay to take even 1 trip to feed, photograph, or observe wildlife in 2001 in [STATE]?

Zero was allowed as a valid response.

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