

TRENDS IN PARTICIPATION RATES FOR WILDLIFE-ASSOCIATED RECREATION BY RACE/ETHNICITY AND GENDER: 1980-2001

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Abstract

This study looks at trends in participation rates in wildlife-associated recreation activities by race/ethnicity and gender among participants 16 years of age and older. Activities compared in the analysis are hunting, fishing, observing wildlife, and taking trips for the purpose of observing, feeding, and photographing wildlife. Five datasets from the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation were used in this analysis. Hunting was the activity with the greatest disparity in participation by gender and race/ethnicity. However, more women are participating in this activity and there appeared to be an early trend toward more similar participation rates by gender within racial/ethnic groups. Hunting participation by females appears to have decreased or leveled off later in the study period. Other activities have had similar participation rates for men and women over the entire study period. The effect of changes in the survey methodology on this type of analysis is also discussed. Methodological changes have resulted in the reduction of the number of observations. This affects the analysis of activities among some minority groups and it raises questions about the use of these datasets for this type of analysis in the future.

1.0 Introduction

Identifying trends in participation in wildlife-associated recreation by gender and race/ethnicity is important to managers who must allocate funds and manage the natural resources to meet the needs of clients. Managers are interested in identifying all of their clients as well as changes in the gender mix of the clients so that their needs can be better addressed. Females and some racial/ethnic groups have a relatively low level of participation in certain forms of wildlife-associated recreation. Low participation rates tend to result in females and minority

groups being overwhelmed by others in the data when general analyses of the population or participants in particular activities are carried out. A characterization of hunters, for example, provides considerable information about the activity of hunting and its potential effect on resources; but hunter demographics make it highly representative of non-Hispanic American white male hunters because they comprise the vast majority of hunters. The influence of females and African American and Hispanic hunters is small in such an analysis. However, managers are interested in female and African American and Hispanic hunters and how to better serve them. They are also interested in whether the percentage of female participants is changing over time. This type of information is also important to those who market goods and services to these participants. One objective of this study is to identify trends in participation rates in wildlife-associated recreation activities by race/ethnicity and gender among participants 6 years of age and older. This study updates an earlier study by Dwyer, Marsinko, and Fisher (1999), which covered the period 1980 to 1990 and found an apparent increase in the proportion of females who hunt and fish. Because of several changes in the method of conducting the surveys used in this analysis, we also look at the effects of selected methodological changes in the surveys and implications of these changes for future analyses.

2.0 Methods

The 1980, 1985, 1990, 1996, and 2001 National Surveys of Fishing, Hunting, and Wildlife-Associated Recreation were used in this analysis. The Census Bureau has conducted the surveys for the U.S. Fish and Wildlife Service approximately every 5 years since 1955 (U.S. Dept of Interior 1997). Each survey actually consists of three surveys that result in three datasets. The screening survey consists of demographic and limited participation data and is considered to be representative of the population of the United States in general. The sportsmen survey consists of detailed participation and expenditure data about hunting and fishing, and is considered to be representative of hunters and anglers residing in the United States. The wildlife watching survey consists of detailed participation and expenditure data about nonconsumptive wildlife-associated recreation activities and is considered to be representative of wildlife

watchers residing in the United States. The screening surveys were the primary source of data used in this analysis. Although the screening surveys contain only limited participation data, they permit comparisons of participants with nonparticipants as well as participation in all wildlife-associated activities (fishing, hunting, and wildlife watching). Participation data collected using the screening survey are for 1980, 1985, 1995, and 2000 and most of the data presented in the summary publications (U.S. Dept of Interior 1982, 1988, 1993, 1997, 2002), which are collected using the detailed surveys, are for 1980, 1985, 1996, and 2001. Because of the methodology used by the Census Bureau to select and adjust the weights for the detailed surveys, and the fact that the data are collected for different years, the total numbers of participants calculated using the screening surveys differ slightly from the total numbers of participants calculated using the detailed surveys.

Methodological changes in the surveys over the analysis period include a change from conducting the survey once per year to several times per year. In other words, each individual is contacted several times per year and asked about his or her participation and expenditures in each activity. The technology of conducting the survey has also changed. As a result of these changes, it has become difficult to analyze trends using these surveys. The change in the recall period is thought to have increased the accuracy of data about expenditures and days of participation. Thus, surveys conducted before the recall period changed are not usually compared to those conducted after the recall period changed. This analysis does compare surveys across the recall period change because it is based on whether an individual participated rather than level of participation. We felt that information about whether or not an individual participated in an activity would not be as likely to be affected by recall period or other methodological changes.

Other methodological changes may have affected the results of this study and they have implications for future studies. These changes include a reduction in the number of households surveyed, a decrease in the response rate, and a change in racial and ethnic definitions. More than 100,000 households were interviewed in 1980, 1985, and 1991. Only 44,000 were interviewed in 1996 and 52,500 were interviewed in 2001. Response rates were over 90% for 1980, 1985, and 1991. Response rates dropped to 71% in 1996 and 75% in 2001. Racial and ethnic

definitions changed in 2001. Ethnicity (before 2001) was defined by the following question: Is (household member) of Spanish or Hispanic origin? Ethnicity (2001) was defined as follows: Is (household member) of Spanish or Hispanic or Latino origin? Race (before 2001) was defined by the following question: What is (household member)'s race—White; Black; American Indian, Aleut, Eskimo; Asian or Pacific Islander; or another group not mentioned? In the 2001 survey, Asian was split from Pacific Islander. Respondents could pick any or all of the above races. Then they were asked to pick the one race with which they identify most. Unfortunately, this last question contained all races listed above including "other".

For this analysis, we removed the Hispanic/Spanish/Latino group from the other races in order to analyze them separately and we refer to them as Hispanic in this paper. Thus, Hispanics are treated as a separate race in this paper. The following races were analyzed in this paper: White; Black; American Indian, Aleut, Eskimo; and Hispanic.

Analyses are presented in the paper as follows. First, trends in participation in hunting, fishing, and wildlife watching are addressed. Then, the effects of the changes in the survey are addressed along with the implications for future analyses.

3.0 Results

3.1 Trends

Trends are presented using male/female participation ratios. This ratio is defined as the percent of males participating in an activity divided by percent of females participating in the activity. This ratio compares rates of participation, rather than numbers of participants. If the ratio is one, the rates of participation are the same. If the ratio is five, the male participation rate is five times that of the female participation rate. If the ratio is less than one, the female participation rate is higher than the male participation rate.

Male/female participation ratios for hunting range from about four to more than 40 (Table 1) and are higher than for any other activity considered in this analysis. The lowest ratios are for the American Indian, Aleut, Eskimo race, which means that a higher proportion of females in this race participate in hunting than for all other races. The opposite is true for African Americans (Black). The

Table 1.—Male/Female Participation Ratios by Race/Ethnicity and Year of Survey (Hunting)

Race	1980	1985	1990	1995	2000
White	12.1	11.1	8.6	10.9	9.1
Black	36.6	17.1	16.5	47.5*	50.5*
Am Indian	7.5	7.4	3.6	4.9	5.3
Hispanic	9.4	11	8.3	8	19.2

*Caution – These numbers are based on 3 observations each (see text)

Table 2.—Male/Female Participation Ratios by Race/Ethnicity and Year of Survey (Fishing)

Race	1980	1985	1990	1995	2000
White	2.3	2.2	2	2.1	2.2
Black	2.2	2.2	2.2	2.6	2.7
Am Indian	2	2	1.6	2.1	2.2
Hispanic	2.5	2.7	2.2	2.9	2.4

Table 3.—Male/Female Participation Ratios by Race/Ethnicity and Year of Survey (Wildlife Watching Trip > 1 Mile from Home)

Race	1980	1985	1990	1995	2000
White	1.1	1.1	1.1	1.1	1.1
Black	1.2	1.2	1.1	1.1	1.2
Am Indian	1.2	1	1	1.1	1
Hispanic	1.1	1	1.1	1.1	1.1

general trends show the ratios decreasing from 1980 to 1990 and then leveling off or increasing slightly afterward. The apparent sharp increase in the ratio for African Americans after 1990 is highly questionable and may be due to a lack of data. Only three female African hunters were surveyed in 1996 and in 2001. This is due to methodological changes in the survey and it is discussed in greater detail later in this paper.

Male/female participation ratios for fishing are considerably less than the ratios for hunting. They range from 1.6 to 2.9 (Table 2). This indicates that females are much more likely to participate in fishing than hunting. As was the case for hunting, the lowest ratios are for the American Indian, Aleut, Eskimo race, which means that females in this race are more likely than other races to participate in both of these activities. The highest ratios are for Hispanics. The ratios for African Americans appear to be increasing, and, in this case, there is sufficient data to suggest that this increase is actually occurring. The ratios for whites appear to have remained almost constant over the period.

One wildlife watching activity involves taking a trip greater than one mile from home for the primary purpose of observing, photographing, or feeding wildlife. Table 3 indicates that the participation ratio is slightly higher for males than females. The ratios range from one to 1.2 and have remained relatively constant over the period. African Americans have slightly higher ratios than the other races.

Another wildlife watching activity involves observing wildlife within one mile of the home. Table 4 indicates that the participation ratio is slightly higher for males than females. The ratios range from .8 to 1.3 and have remained relatively constant over the period. There does not appear to be any differences between races for this activity.

3.2 Methodological changes in survey

Race definitions were changed for the 2001 survey. Prior to 2001 there were five race categories: White; Black; American Indian, Aleut, Eskimo; Asian or Pacific Islander; or another group not mentioned. In the 2001 survey, Asian was split from Pacific Islander. Respondents

**Table 4.—Male/Female Participation Ratios by Race/Ethnicity and Year of Survey
(Observing Wildlife Within 1 Mile of Home)**

Race	1980	1985	1990	1995	2000
White	1.1	1	1.1	1	1
Black	1.2	1.1	1.2	1.2	1
Am Indian	1.1	1.3	1.2	0.8	1.1
Hispanic	1	1.1	1	1.1	1.1

Table 5.—Effects of the 2001 Race/Ethnicity Changes (14.7 million assigned/reassigned)

Race	Before (% of total population less 14.7 million)	After (% of total population with 14.7 million added)	Population increase (as % of population before)
White	85.9	85.3	6.5
Black/African American	9.9	10.2	10.4
American Indian/Alaska Native	.6	.7	16.4
Asian	3.1	3.4	14.8
Native Hawaiian or other Pacific Islander	.3	.4	29.6

could pick any or all of the above races. Then they were asked to pick the one race with which they identify most. “Other” was a valid response to this question. Those who chose “other” were reassigned to a specific race based on several criteria. If this variable was blank (i.e. no response to this question), race was assigned according to a priority list. For example, those who selected all races were assigned to the African American race. A total of 14.7 million people were assigned to races because they chose “other” or because they did not respond to this question. Assignment favored minority races. Table 4 shows the effect of the assignment of 14.7 million people to specific races. The first column shows each race as a percentage of the total population without the 14.7 million who were assigned to specific races. The second column shows the same information as the first after the 14.7 million were assigned. The effect was to reduce the percentage of whites and increase the percentage of all other races. The third column shows the effect of the assignment on each race. All races increased because 14.7 million people were added and some were added to each race, including the White race. The Native Hawaiian/Pacific Islander race increased by almost 30%, which is enough to affect the characteristics of this population.

Ethnicity was changed in 2001 by the adding the term “Latino” to the Hispanic/Spanish ethnicity question. This raises questions about whether the addition of the new

term affected the size of this ethnic group or participation in the activities analyzed in this paper. Specifically, are there people who consider themselves to be Latino but do not consider themselves to be Hispanic/Spanish? If so, are they more or less likely than the Hispanic/Spanish group to participate in activities such as hunting, fishing, and wildlife watching? Unfortunately, this cannot be determined from the information available in these datasets.

More than 100,000 households were interviewed in 1980, 1985, and 1990. Only 44,000 were interviewed in 1996 and 52,500 were interviewed in 2001. Response rates were over 90% for 1980, 1985, and 1991, 71% in 1996, and 75% in 2001. Although response rates have decreased considerably, they are high relative to many surveys. The reduction in the number of households interviewed affected our analysis of hunting among African Americans. There were 37,000 female African American hunters in 1990. This is a weighted value based on 35 observations. There were 9,700 in 1995 and 7,300 in 2000. These are weighted values based on three observations in each survey. We feel that three observations are not enough to produce reliable results, particularly in this case where the number of interviews decreased, the weight per observation increased, and the response rate decreased.

4.0 Summary and Conclusions

The male/female participation ratio for hunting appears to have decreased from 1980 to 1990 and then leveled off or increased for most races, although the increase for African Americans is questionable due to a small number of observations. The lowest ratios were for the American Indian/Eskimo race. The ratio for the White and American Indian/Eskimo races changed the least over the study period.

The male/female participation ratio for fishing has increased the most for Black anglers. There was almost no change for Whites and there was no clear trend for other groups. The lowest ratios were for the American Indian/Eskimo race.

The male/female participation ratios for wildlife-watching trips and for observing wildlife around the home showed little variation among all groups with slightly higher participation rates for males throughout the years. There was no clear trend or clear indication of a change in ratios.

Methodological changes in the survey could have affected the results of this study and may also constrain future studies. Fewer households were surveyed and the response rate was lower in 1996 and 2001. Both of these conditions could affect the results of this type of study. The assignment/reassignment of 14.7 million individuals into specific races in 2001 could affect the makeup of minority groups. Hunting is probably affected the most by the reduction in the number of households surveyed and the reduction in the response rate. This is because hunting has few participants relative to most other activities in this database. Thus, a large number of observations is needed to assess minority participation in hunting. In the past, we have been able to rely on the screening survey to provide information about minority group participation in hunting. However, fewer households surveyed and lower response rates in the last two surveys have resulted in insufficient data to provide useful information about participation in this activity by some minority groups. If the number of households surveyed and response rates continue to decrease in future surveys, analysis of activities such as hunting among minority groups will become more difficult or impossible.

5.0 Acknowledgment

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6.0 Citations

Dwyer, J., Marsinko, A., and Fisher, J. (1999). Trends in Participation Rates for Wildlife-Associated Outdoor Recreation Activities by Gender and Race/Ethnicity. In Hans Vogelsong, (ed.), Proceedings of the 1998 Northeastern Recreation Research Symposium. (Gen. Tech. Rep. NE-255. pp. 213-218). Radnor, PA: USDA Forest Service, Northeastern Research Station.

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