



# Proceedings of the 1999 Northeastern Recreation Research Symposium

April 11-14, 1999  
Bolton Landing, New York



## Northeastern Recreation Research Symposium Policy Statement

The Northeastern Recreation Research Symposium seeks to foster quality information exchange between recreation, tourism, and resource managers and researchers throughout the Northeast. The forum provides opportunities for recreation and tourism research managers from different agencies, state, and government levels, as well as those in the private sector to discuss current issues, problems, and research applications in the field. Students and all those interested in continuing education in recreation and tourism management are particularly welcome.

### NERR 1999 STEERING COMMITTEE:

Walter Kuentzel, University of Vermont, 1999 Committee Chair

Robert Bristow, Westfield State College  
Chad Dawson, SUNY College of Environmental Science and Forestry  
Alan Graefe, The Pennsylvania State University  
Bruce Lord, The Pennsylvania State University  
Tom More, USDA Forest Service, Northeastern Research Station  
Katherine Pawelko, Western Illinois University  
Rob Robertson, University of New Hampshire  
Steve Selin, West Virginia University  
David Solan, Mansfield University  
Gail Vander Stoep, Michigan State University  
Hans Vogelsong, The Pennsylvania State University  
Rodney Warnick, University of Massachusetts, Amherst

The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the U.S. Department of Agriculture or the Forest Service of any product or service to the exclusion of others that may be suitable.

**Note:** *These proceedings have been prepared using electronic and hard copy supplied by the authors. While some editing has been done, the authors are responsible for the content and the accuracy of their papers.*

Kyle, Gerard, comp., ed. 2000. **Proceedings of the 1999 Northeastern Recreation Research Symposium**; 1999 April 11-14; Bolton Landing, NY. Gen. Tech. Rep. NE-269. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 426 p.

Contains articles presented at the 1999 Northeastern Recreation Research Symposium. Contents cover tourism, environmental attitudes and values, water resource issues in recreation, gender, ethnicity, and special populations, visitor experiences and satisfaction, demographic trends, recreation planning and management, historic preservation in recreation, forest resource issues in recreation, human dimensions of fisheries, economics of outdoor recreation and tourism, contemporary issues in recreation and the environment, visitor experiences and participation, and place attachment.

**Keywords:** tourism, environmental attitudes, gender, ethnicity, historic preservation, fisheries





---

---

**Headquarters of the Northeastern Research Station is in Newtown Square, Pennsylvania. Field laboratories are maintained at:**

**Amherst, Massachusetts, in cooperation with the University of Massachusetts**

**Burlington, Vermont, in cooperation with the University of Vermont**

**Delaware, Ohio**

**Durham, New Hampshire, in cooperation with the University of New Hampshire**

**Hamden, Connecticut, in cooperation with Yale University**

**Morgantown, West Virginia, in cooperation with West Virginia University**

**Parsons, West Virginia**

**Princeton, West Virginia**

**Syracuse, New York, in cooperation with the State University of New York, College of Environmental Sciences and Forestry at Syracuse University**

**Warren, Pennsylvania**

---

---

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202)720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410, or call (202)720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

***"Caring for the Land and Serving People Through Research"***

NC-4402-02  
RVUR  
3.42  
Available

## **SIMILARITIES AND DIFFERENCES IN THE OUTDOOR RECREATION PARTICIPATION OF RACIAL/ETHNIC GROUPS: AN EXAMPLE FROM ILLINOIS**

John F. Dwyer

Research Forester, USDA Forest Service, North Central Research Station, 845 Chicago Avenue, Suite 225, Evanston IL 60202.

**Abstract:** Much of the initial research on the outdoor recreation participation of racial/ethnic groups focused on between-group differences in percent participating in an activity. This tended to focus research, policy, and management on between-group differences at the expense of a more comprehensive look at the participation patterns of racial/ethnic groups. This paper suggests a more comprehensive approach that focuses on similarities as well as differences between groups along several dimensions of participation. It also looks at participation rates while taking into account age, residence, household income, gender, and household size.

### **Introduction**

Much of the early research on the outdoor recreation participation patterns of racial/ethnic groups focused on between-group comparisons of activity participation rates (i.e., percent of the group participating in an activity) (Cheek et. al. 1976; Miller and Guerin 1962; Washburne 1978). That research has been effective in pointing out to managers and planners the need to consider different approaches to meeting the outdoor recreation needs of particular racial/ethnic groups. However, the research presented a less than comprehensive picture of the participation patterns of racial/ethnic groups (including similarities and differences).

We are moving into the new millennium where we anticipate a great deal more racial/ethnic diversity in the U.S. population. In order to address the recreation resource management issues associated with these changes, it seems appropriate to consider broadening and extending our analyses of the participation patterns of racial/ethnic groups. What follows are several suggestions for looking at outdoor recreation participation that can lead to new and better insights into outdoor recreation participation patterns by racial/ethnic groups. In a number of instances these suggestions are illustrated using random phone interviews with Illinois residents in four separate years (1987, 1989, 1991, and 1996), a total of 3,966 individuals.

### **Considering a Wider Range of Racial/Ethnic Groups**

The range of racial/ethnic groups considered should be wider than in the past where much of the attention was given to comparison of African Americans and Whites.

Census projections suggest important increases in a wide range of racial/ethnic groups in the years ahead. To the extent possible, future analyses should include Whites, African Americans, Asian Americans, Hispanic Americans, Native Americans, and other important racial/ethnic groups. The small sample size for some racial/ethnic groups in general surveys of the population makes it difficult to learn very much about these groups. In some instances it may be desirable to sample a higher proportion of the population for some groups.

Using census definitions for racial/ethnic groups has the advantage of providing linkages to census data and projections; but there may also be reasons for using other definitions as well, to include sub-groups of census categories. Census definitions of groups facilitate the use of cohort-component projection models for predicting future participation by racial/ethnic groups (Dwyer 1995). With the Illinois data the definitions of racial/ethnic groups did not strictly follow census definitions. Hispanic was considered a separate racial/ethnic category, where the census definition considers Hispanic as an ethnic group that can include individuals from all races.

### **Incorporating New Ways of Looking at Participation Rates**

In comparing participation rates among groups it may be useful to look beyond simple comparisons of activity participation rates to (1) the ranking of activities by percent of the group participating, (2) average number of activities engaged in by members of the group, and (3) percent of the group that does not participate in any of the activities. Rankings of activities by the percent of the group participating are often similar across racial/ethnic groups. The significant between-group differences in activity participation rates are often with those activities that rank towards the bottom of the list for all groups in terms of percent participating. Thus examination of activity rankings helps put in perspective differences and similarities in group activity participation rates. It may also be helpful to look at the average number of activities that each group engages in, as well as the percent of each group that reports no participation in any of the activities being considered. This will provide an indication of the breadth of activity participation by particular groups, and avoid the tendency to (1) focus attention on activities where there are significant differences in participation, or to (2) characterize groups by their differences from others. Looking at participation rates from different perspectives such as those outlined above can provide a more comprehensive view of the similarities and differences in participation patterns than will be the case with just pointing out significant differences in percent participating in activities.

Comparisons of outdoor recreation participation rates for pairs of racial/ethnic groups by Illinois residents (i.e., the traditional approach) reveal significant differences that span 25 out of 30 activities (Table 1). This appears to represent a large number of significant differences that span

differences in the outdoor recreation participation of racial ethnic groups: an example from Illinois. In: Kyle, Gerard, comp., ed. Proceedings, 1999 North eastern recreation research symposium;

Gen. Techn. Rep. NE-209. Newcomb Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station: 98-105.

a sizable portion of the activities. However, other interpretations may be made using alternative approaches. Significant differences in participation rates between pairs of racial/ethnic groups are limited to 58 out of the 270 comparisons that were made, or just slightly more than one out of five. This puts a somewhat different perspective on the comparisons between racial/ethnic groups. Widely ranging sample sizes might have complicated the pattern of results. In some instances small sample sizes may have limited our ability to detect significant between-group differences. Additional data may reveal more significant differences between groups. In other instances, large amounts of data may have made it more likely that small differences between groups are reported as significant.

When outdoor recreation activities were ranked in order of percent participating within each racial/ethnic group, the rankings were similar across groups. Pleasure walking, pleasure driving, and picnicking were ranked in the top three in all but the "other" category, which had a small sample size. When the mean number of activities engaged in by individuals in each racial/ethnic group are compared (footnote of table 1) there is little variation among groups (means range from 5 to 6 activities). When we look at the percent of each group that reports it engages in none of the 30 outdoor activities (footnote of table 1), the results range from 4 to 9 percent of the individuals in each group. In both of the above instances, Whites tended to have the highest participation; but the differences between groups are not particularly striking. Once again, moving beyond focusing on significant differences in activity participation rates between groups reveals a substantial amount of similarities in participation patterns between groups. This is a useful context in which to view the significant differences that are found, and to develop comprehensive outdoor recreation policies and programs.

#### **Looking at Average Number of Days of Participation by Those Who Participate**

When racial/ethnic groups are compared in terms of the average days of participation by activity participants, differences between groups are often much smaller than

what was observed with activity participation rates. Bringing this perspective into the analysis of participation focuses the question of between-group differences more on the question of who participates in an activity rather than the amount of activity by participants. Comparisons of days of participation by participants from each group are often difficult to make for many activities, given the small number of participants on which to base comparisons.

When we look at average number of days that Illinois participants engage in an activity across racial/ethnic groups (Table 2), the differences do not appear to be as large or the patterns as regular as with percent of the group participating in an activity (Table 1). Across the 30 outdoor recreation activities, the group with the highest mean days of participation in an activity varies widely. This pattern may be due, in part, to relatively small sample sizes for participants from some of the racial/ethnic groups. This is a reflection of small numbers of individuals from these groups in the sample, in conjunction with their low participation rates in some activities. This may call for more intensive sampling of some groups.

The mean days of participation across all 30 activities (footnote of table 2) suggests that individuals in each of the racial/ethnic groups engage in a significant amount of outdoor recreation activity. What differs most between groups is the percent of the group that participates in particular activities. The mean days of participation across all activities by racial/ethnic groups ranges from a high of 39 for African Americans a low of 27 for Asian Americans (footnote of Table 2). The African American group, which has the highest average days of participation, is the group with the smallest average number of activities participated in. In this instance, the relatively high numbers of days of participation by African American participants more than outweighs their lower group activity participation rates. Average days of participation in pleasure walking and pleasure driving by African American participants were especially high relative to other groups. These are two activities where participants often had a large number of days of activity (Table 2).

**Table 1. Recreation activities of Illinois adults, percent participating by race**

Activity	White (3230)	Black (484)	Hispanic (145)	Asian (84)	Other (23)
Pleasure walking	75+	69-	70	69	70
Pleasure driving	65+	54-	61	61	44
Picnicking	53	55	65+	67+	30--
Outdoor pool swimming	48+	29--	46+	33	57
Bicycling	43	40	43	41	39
Non-pool swimming	31+	12--	34+	23	39
Fishing	30+	15-	21	19	26
Softball or baseball	24--	37+++	41+++	14--	30
Motorboating	28+++	6-	11-	10-	17
Running or jogging	28	34	38	42	44
Golf	23+++	7-	10-	11-	9
Tennis	14--	16+	18+	32+++	9
Outdoor basketball	16--	25+	30+	24	22
Tent camping	15+	5--	11	19+	4
Hiking	18+	7-	14	14	4
Water skiing	12++	1-	6	4-	9
Off-road vehicles	11+	8+	11+	1---	26
Horseback riding	9	11	10	5	17
Ice skating	11+	4-	10	14	17
Canoeing	9+	2--	6	16+	9
Downhill skiing	9++	2-	2-	8	4
Vehicle camping	9+	4-	7	5	4
Sailing	7	5	5	6	9
Hunting	7+++	3+	2-	0--	9
Cross-country skiing	5+++	1-	2	1-	0-
Snowmobiling	4+	0-	5	1	4
Soccer	4-	3-	14++	6	9
Backpacking	4	4	8	8	13
Ice fishing	3++	1-	1	0-	4
Trapping	1+++	0	0-	0-	4

+Significantly higher than one other group at the 0.05 level

-Significantly lower than one other group at the 0.05 level

% who do not participate in any activities	3.7	8.9	5.5	4.8	4.3
Mean number of activities participated in	6.2	4.6	6	5.6	5.8

**Table 2. Recreation activities of Illinois adults, mean number of days of activity for participants, by race**

Activity	White (3230)	Black (484)	Hispanic (145)	Asian (84)	Other (23)
Pleasure walking	85	104+	86	61	95
Pleasure driving	30-	49++	36	22-	22
Picnicking	7	5	7	9	14
Outdoor pool swimming	27+	12-	19	60	34
Bicycling	33	30	22	30	28
Non-pool swimming	16+	6-	12	9	9
Fishing	20+	11	13	4-	13
Softball or baseball	17	19	11	15	7
Motorboating	17++	6-	12	4-	22
Running or jogging	70	73	57	61	112
Golf	22+*	10-	9-	9	48
Tennis	17+	17+	18	35+	3---
Outdoor basketball	18	61	26	19	26
Tent camping	7+	8	5+	2--	10
Hiking	9+++	10	6-	4-	3
Water skiing	16	4	18	3	35
Off-road vehicles	40+	27+	93+	25	48
Horseback riding	20+++	7-	3-	4-	21
Ice skating	8+	5	2-	4	10
Canoeing	9	3+	2	1-	2
Downhill skiing	25+	6	2-	4	
Vehicle camping	12++	6	6+-	3--	4
Sailing	14	3	4	3	2
Hunting	28+++	14-	7-		48
Cross-country skiing	5++	2-	2-		
Snowmobiling	17		12	15	
Soccer	20++	2-	18	8	7-
Backpacking	7+++	19	6	2-	3-
Ice fishing	23	5	3		1
Trapping	12	20			30

+Significantly higher than one other group at the 0.05 level

-Significantly lower than one other group at the 0.05 level

Mean days for all activities	31	39	28	27	38
------------------------------	----	----	----	----	----

**Table 3. Coefficients from the logistic regression analysis of participation in outdoor recreation activities by Illinois residents**

	Run	Walk	Drive	Picnic	Fish	Icfeish	Xeski	Dhski	Skate	PoolSwim	OthrSwim	Wtrski	Boat	Sail	Canoe	
Constant	-1.53*	0.70*	.34	-0.16	-1.57*	-6.31	-4.81	-5.59	-3.26*	-1.10*	-1.56*	-3.54*	-1.81*	-3.25*	-4.01*	
Race																
White	0.15	-0.34*	-0.20	0.03	-0.59*	-1.41	-1.58*	-1.73*	-1.38*	-0.89*	-1.34*	-2.12*	-1.49*	-0.77*	-1.31*	
Black	0.03	-0.31	-0.03	0.39*	-0.33	-1.41	-0.99	-1.77*	-0.45	-0.38*	-0.12	-1.09*	-1.15*	-0.94*	-0.48	
Hispanic	0.07	-0.35	-0.39	0.42	-0.90*	-5.60	-1.71	-0.27	-0.11	-0.97*	-0.85*	-1.85*	-1.36*	-0.34	0.54	
Asian	-0.38	-0.18	0.08	-0.06	-0.09	1.22	-5.62	-6.16	0.48	0.61	0.31	-0.83	-0.41	-0.26	-0.48	
Other	-0.09	-0.43	-0.06	-0.18	0.23	-5.40	0.24	-5.62	-0.61	-0.74	0.18	0.69	-0.16	-0.42	-4.72	
Not given																
Age																
18-25																
26-39	-0.75*	0.22	-0.10	0.39*	-0.16	-0.36	-0.60*	-0.50*	-0.55*	-0.45*	-0.53*	-0.58*	-0.49*	0.00	-0.55*	
40-55	-1.09*	0.14	-0.19	0.09	-0.28	-0.95*	-0.76*	-1.24*	-1.03*	-1.08*	-0.85*	-1.41*	-0.62*	0.13	-0.85*	
56-65	-2.02*	-0.23	-0.16	0.05	-0.25	-0.70	-1.57*	-2.50*	-2.69*	-1.66*	-1.35*	-3.17*	-0.93*	-0.44	-1.74*	
>65	-2.50*	-0.05	-0.43*	-0.33*	-1.00*	-1.62*	-3.70*	-4.30*	-2.87*	-2.06*	-2.56*	-3.16*	-1.67*	-1.10*	-3.55*	
Not given	-1.14*	0.30*	-0.20	0.27*	-0.10	-0.42	-1.31*	-1.13*	-1.08*	-0.70*	-0.70*	-0.83*	-0.70*	-0.04	-0.75*	
Residence																
Chicago																
N. Sub	-0.13	-0.10	0.03	0.06	0.23*	0.06	0.35	0.08	0.12	-0.25*	-0.06	0.21	0.51*	-0.33	0.65*	
S. Sub	-0.30*	-0.01	0.04	-0.12	0.33*	0.58	-0.07	-0.42	-0.03	0.19	-0.33*	0.24	0.56*	-1.14*	0.43	
North	-0.55*	0.13	0.39*	0.40*	0.48*	0.45	-0.15	0.05	-0.30	-0.02	-0.06	0.62*	0.64*	-1.08*	0.72*	
Central	-0.39*	0.08	0.49*	0.16	0.78*	0.32	-0.68*	-0.45*	-0.63*	0.25*	-0.26*	0.04	0.52*	-1.04*	0.77*	
South	-0.53*	0.07	0.73*	0.04	1.05*	0.24	-0.93*	-1.25*	-0.92*	0.15	-0.04	0.29	0.63*	-1.15*	0.76*	
Not given	-0.71	-0.37	-0.26	-0.74*	0.03	0.32	-0.39	-0.42	-0.85	-0.65	-1.07*	-1.17	-0.81	0.07	-0.76	
Household Income																
<15																
15-25	0.11	0.07	0.23	-0.07	0.05	-0.15	-0.21	-0.18	-0.02	0.33*	-0.04	-0.05	0.13	0.32	-0.17	
26-40	0.20	0.16	0.56*	0.37*	0.30	0.52	0.04	0.43	0.19	0.53*	0.25	0.24	0.47*	0.36	-0.09	
>40	0.58*	0.51*	0.82*	0.19	0.27	0.25	0.99*	0.82*	0.76*	1.04*	0.71*	0.83*	0.98*	0.84*	0.24	
Not given	0.17	0.02	0.29*	-0.09	0.01	-0.98	0.59	0.50	0.56	0.33*	-0.01	-0.14	0.23	0.43	0.21	
Gender																
Male																
Female	-0.57*	0.72*	0.08	0.19*	-0.81*	-1.52*	0.16	-0.13	0.06	0.06	-0.23*	-0.58*	-0.32*	0.23	-0.30*	
Household Size																
Total	0.03	0.07	0.04	0.25*	0.12*	0.11	-0.19*	-0.20*	0.19*	0.33*	0.13*	-0.02	-0.03	-0.11	0.04	
Adults	0.05	-0.11	-0.02	-0.24*	0.01	-0.12	0.00	0.13	-0.24*	-0.34*	-0.18*	-0.07	-0.11	0.05	-0.03	
	Bekpck	Hike	TentCamp	RVCamp	Golf	Tennis	Softball	Soccer	Bsktball	Biking	HorseRide	Snowmob	Off-road	Hunt	Trap	
Constant	-4.36*	-2.65*	-3.64*	-3.71*	-2.33*	-2.34*	-2.12*	-5.88	-2.54*	-1.28*	-2.65*	-7.96	-2.99*	-3.95*	-8.38	
Race																
White																
Black	-0.22	-1.07*	-1.15*	-0.56*	-1.09*	-0.06	0.60*	-0.67*	0.63*	-0.29*	0.24	-2.79*	0.18	-0.10	0.60	
Hispanic	0.23	-0.46	-0.57	0.07	-0.73*	0.02	0.44*	0.76*	0.45*	-0.47*	-0.21	-0.03	-0.02	-0.65	-5.39	
Asian	0.41	-0.63	0.21	-0.74	-0.94*	0.70*	-1.21*	-0.22	0.06	-0.76*	-0.76	-1.61	-2.32*	-5.26	-5.49	
Other	1.09	-1.12	-0.96	-0.24	-1.52	-0.33	-0.16	0.07	0.79	-0.26	0.82	-7.38	1.50*	0.98	2.66*	
Not given	-5.11	-0.15	-4.37	-3.75	-0.50	-0.34	0.15	0.35	-0.24	-0.66	-0.41	-6.82	-0.78	0.55	-5.75	
Age																
18-25																
26-39	-0.43	0.18	-0.49*	0.05	-0.27	-0.51*	-0.58*	-0.85*	-0.55*	-0.34*	-0.89*	-0.76*	-0.57*	-0.18	-0.37	
40-55	-0.77*	0.16	-1.19*	0.23	-0.77*	-0.88*	-1.28*	-1.46*	-1.25*	-0.82*	-1.11*	-1.17*	-1.11*	-0.20	-0.76	
56-65	-1.56*	-0.77*	-2.01*	-0.52	-0.84*	-1.90*	-2.45*	-7.79	-2.35*	-1.32*	-2.63*	-2.73*	-2.41*	-0.17	-1.21	
>65	-3.19*	-1.42*	-2.94*	-0.33	-0.88*	-2.86*	-3.36*	-3.37*	-3.05*	-2.34*	-2.52*	-7.59	-2.64*	-1.87*	-1.51	
Not given	-0.43	0.22	-0.84*	0.09	-0.48*	-0.81*	-0.82*	-1.12*	-0.84*	-0.74*	-1.23*	-0.93*	-0.74*	-0.16	-0.31	
Residence																
Chicago																
N. Sub	-0.12	-0.06	0.22	0.22	0.60*	0.27*	0.11	0.06	0.17	-0.06	0.05	0.75*	0.55*	0.17	1.12	
S. Sub	-0.17	-0.12	0.03	0.17	0.30	-0.23	-0.17	0.15	0.05	-0.10	-0.06	0.78*	0.57*	0.46	1.08	
North	-0.31	0.09	0.13	0.68*	0.36	-0.34	-0.42*	-0.51	-0.14	-0.53*	0.11	0.59	0.48	1.16*	2.27*	
Central	0.09	0.03	0.53*	0.59*	0.27	-0.44*	-0.24	-0.56	0.12	-0.19	0.03	0.53	0.93*	1.59*	0.75	
South	-0.23	-0.18	0.68*	1.24*	0.01	-0.55*	-0.15	-0.36	-0.25	-0.59*	0.37	0.20	1.56*	2.02*	2.16*	
Not given	-0.11	0.23	-0.11	-0.74	-0.32	-0.95	-0.68	-7.39	-0.05	-0.59	-0.55	1.02	0.18	1.19*	-4.69	
Household Income																
<15																
15-25	0.49	-0.16	-0.08	-0.02	0.47	0.15	0.19	0.00	0.22	0.21	0.49	0.52	0.12	-0.24	-0.79	
26-40	0.24	0.27	0.26	0.00	0.98*	0.43*	0.26	-0.14	0.29	0.45*	0.42	0.53	0.11	0.04	-1.14	
>40	0.49	0.39*	0.05	0.14	1.62*	0.63*	0.36*	0.24	0.36	0.92*	0.88*	0.86	0.22	-0.12	-0.73	
Not given	0.72	0.20	-0.07	-0.17	0.98*	0.56*	0.06	0.39	0.39	0.38*	0.69*	0.30	0.16	-0.08	-0.96	
Gender																
Male																
Female	-0.65*	-0.08	-0.48*	-0.17	-0.97*	-0.19	-0.79*	-0.83*	-1.27*	0.04	0.03	-0.37*	-0.62*	-2.57*	-0.84	
Household Size																
Total	0.06	0.10*	0.12*	0.01	-0.11*	0.07	0.21*	0.31*	0.26*	0.25*	0.10	0.11	-0.01	0.06	-0.21	
Adults	-0.03	-0.04	-0.02	0.11	0.10	-0.12	-0.12	-0.29*	-0.05	-0.24*	-0.25*	0.06	0.10	-0.13	0.22	

\*Indicates significance at the 0.05 level

The logistic regression model essentially allows us to compare the activity participation rates of each racial/ethnic group with Whites, while accounting for all other variables in the model. In 43 instances out of a possible 120 the model indicates that there are significant differences between the participation rates for a racial/ethnic group when compared with Whites, with all other variables in the model accounted for. This compares to 40 instances where there were significant differences in simple comparisons of means between whites and each of the other groups (i.e., no other variables were accounted for) (Table 1.). Variations in the results of significance tests for between-groups differences using logistic regression and the simple paired comparisons were largely the result of correlations between racial/ethnic groups and other variables. Three examples are described below.

With sailing, simple comparisons of mean participation rates (Table 1) did not indicate significant differences between whites and any of the other racial/ethnic groups. However, the logistic regression model indicated that African Americans and Hispanic Americans are significantly less likely than Whites to participate in sailing. The confounding factor in this instance is place of residence. African and Hispanic Americans are the groups that are most likely to live in Chicago. In turn, Chicago residents are more likely to engage in sailing than are individuals from any other part of the State (perhaps due to Chicago residents' easy access to Lake Michigan). Given their relative concentration in Chicago we would expect somewhat higher participation rates in sailing for African and Hispanic Americans. In the logistic regression, accounting for place of residence and other variables allows differences in participation associated with race/ethnicity to be evaluated. With all other variables taken into account -- these groups are significantly less likely than whites to participate in sailing (Table 3).

In the case of driving for pleasure, a simple comparison of mean participation rates (Table 1) indicated significantly lower participation by African Americans when compared to Whites. However, the logistic regression model does not indicate significantly lower participation for African Americans when compared to Whites. We hypothesize that this difference in the results of the two significance tests reflects the confounding effects of place of residence and household income. Specifically, individuals who live outside Chicago and those that have higher incomes tend to have significantly higher participation in driving for pleasure. Since African Americans are more likely than other groups to live in Chicago and also have lower incomes than other groups, a simple comparison would indicate lower African American participation in driving for pleasure. In contrast, the logistic regression model does not indicate a significantly lower participation rate for African Americans than Whites in driving for pleasure -- given that location, income, and the other variables in the model are accounted for (Table 3).

With softball, simple comparisons of mean participation rates (Table 1) did not indicate a significant difference in participation between Asian Americans and Whites. However, with the logistic regression model, Asian Americans were shown to have a significantly lower rate of participation in softball than Whites, with the other variables in the model considered. We suggest that the difference in the results of the two evaluations may be attributable to age. Participation in softball is significantly higher in the younger age classes than in the older ones. Asian Americans in our sample had a larger proportion of individual in the lower age classes than Whites. Given this situation we would expect higher participation rates in softball for Asian Americans. By controlling for age in the logistic regression, however, the model suggests that Asian Americans are significantly less likely than whites to participate in softball.

The coefficients for the models for predicting participation rates in individual activities vary markedly across activities. The effect of factors other than race/ethnicity in explaining differences in percent participating varies with activity. For example, gender is an especially important factor in explaining participation in hunting. A person's age is a particularly relevant factor in understanding participating in athletic activities. For activities that require a considerable amount of space or special resources (i.e., hunting, off-road vehicles, camping) place of residence (Chicago, its suburbs, other parts of Illinois) is an important factor in explaining participation. Income is important for those activities that require substantial expenditures for participation; such as with playing golf, boating, and driving for pleasure.

### Summary

A new millennium is upon us, and with this transition we are inspired to be more creative and embracing in our approaches to managing lands and serving people. In anticipation of increased racial/ethnic diversity in our population it will be especially important in planning for the years ahead that we view race/ethnicity and its implications for outdoor recreation in a framework that extends beyond examination of simple differences in participation rates.

In many instances it will be useful to look beyond between-group differences in participation rates to other dimensions of participation, such as rankings of activities by participation rates, average number of activities engaged in by a group, and percent of the group that does not engage in any of the outdoor activities studied. Extending the analysis to days of participation can also provide a useful context for policies and programs. Important measures can include; average number of days of participation in an activity, as well as across all activities, and the market share (of total days in an activity) attributed to each racial/ethnic group. Amount of activity (as indicated by days of participation) often presents a different picture of participation patterns than percent of the group that

participates in the activity. It is also useful to look at the portion of the total participation in an activity that is made up by a particular racial/ethnic group (market share). This provides some indication of the relative significance of particular groups among current participation in the activity. This broader analysis will help extend the discussion of the outdoor recreation participation of racial/ethnic groups to similarities and differences among groups, and put the differences that do exist in a broader perspective. It will also help avoid focusing our attention and policies only on differences between groups and characterizing groups by their differences from others.

Looking at racial/ethnic differences in the context of other variables such as age, residence, household income, gender, and household size will become even more critical in obtaining an improved understanding of outdoor recreation participation as racial/ethnic groups increase in numbers and diversity, and extend their influence across the landscape. An improved understanding of the role that these variables play in conjunction with race/ethnicity will help us anticipate and prepare for meeting the needs of increasingly diverse customers in the years ahead.

In sum, It will be increasingly important to look beyond simple comparison of participation rates to address the policy issues of the future – many of which will deal with

expansion and diversification of racial/ethnic groups. It is critical that in the next millennium we focus on comprehensive policies and programs for meeting the outdoor recreation needs for all segments of our population.

#### Literature Cited

Cheek, N.H., Jr., D.R. Field, and R.J. Burdge. 1976. Leisure and recreation places, p. 99-129. Ann Arbor, Michigan: Ann Arbor Sciences.

Dwyer, J.F. 1995. Forecasting outdoor recreation participation: A cohort-component projection model for Illinois residents. In: Proceedings, 1994 Northeastern Recreation Research Symposium; 1994 April 10-12, 1994; Radnor PA: U.S. Department of Agriculture, Forest Service Northeastern Forest Experiment Station: 172-175.

Miller, E., and G. Guerin. 1962. Participation in outdoor recreation: Factors affecting demand among American adults. ORRRC Study Report 20. Ann Arbor, Michigan: University of Michigan Survey Research Center.

Washburne, R.F. 1978. Black under-participation in wildland recreation: Alternative explanations. *Leisure Sciences* 1(2):175-189.

# **Northeastern Recreation Research Symposium Policy Statement**

The Northeastern Recreation Research Symposium seeks to foster quality information exchange between recreation, tourism, and resource managers and researchers throughout the Northeast. The forum provides opportunities for recreation and tourism research managers from different agencies, state, and government levels, as well as those in the private sector to discuss current issues, problems, and research applications in the field. Students and all those interested in continuing education in recreation and tourism management are particularly welcome.

## **NERR 1999 STEERING COMMITTEE:**

Walter Kuentzel, University of Vermont, 1999 Committee Chair

Robert Bristow, Westfield State College

Chad Dawson, SUNY College of Environmental Science and Forestry

Alan Graefe, The Pennsylvania State University

Bruce Lord, The Pennsylvania State University

Tom More, USDA Forest Service, Northeastern Research Station

Katherine Pawelko, Western Illinois University

Rob Robertson, University of New Hampshire

Steve Selin, West Virginia University

David Solan, Mansfield University

Gail Vander Stoep, Michigan State University

Hans Vogelsong, The Pennsylvania State University

Rodney Warnick, University of Massachusetts, Amherst

The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the U.S. Department of Agriculture or the Forest Service of any product or service to the exclusion of others that may be suitable.

*Note: These proceedings have been prepared using electronic and hard copy supplied by the authors. While some editing has been done, the authors are responsible for the content and the accuracy of their papers.*

# Proceedings of the 1999 Northeastern Recreation Research Symposium

April 11-14, 1999



*On Lake George in Bolton Landing, New York*

## **Compiled and Edited by:**

Gerard Kyle

The Pennsylvania State University

## **Sponsors:**

Mansfield University

Michigan State University

The Pennsylvania State University

SUNY College of Environmental Science and Forestry

University of Massachusetts

University of New Hampshire

University of Vermont

USDA Forest Service, Northeastern Research Station

Western Illinois University

Westfield State College

West Virginia University

## Gender, Ethnicity, and Special Populations

Ethnicity and Recreation: Problems With Concepts and a Need For New Approaches. <i>Edwin Gomez</i> .....	93
Similarities and Differences in the Outdoor Recreation Participation of Racial/Ethnic Groups: An Example from Illinois. <i>John F. Dwyer</i> .....	98
Disabled Wildlife-Associated Recreation Participants. <i>Allan Marsinko</i> .....	106

## Visitor Experiences and Satisfaction

More on Conceptualizing and Measuring Leisure Involvement. <i>Gerard Kyle, Deborah Kerstetter, and Frank Guadagnolo</i> .....	115
User Satisfaction and Perceptions of Crowding in Four Adirondack Wilderness Areas. <i>Chad Dawson, Peter Newman, and Cathy Fuller</i> .....	120

## Demographic Trends

Demographic Change in the 21 <sup>st</sup> Century: The Impact on Recreation Participation. <i>Amy L. Sheaffer, Ken Cordell, and Joseph T. O'Leary</i> .....	129
The New England Travel Market: An Update of Changing Demographics and Geographic Markets, 1980 to 1996. <i>Rod Warnick</i> .....	134
Promoting In-State Tourism Using Travel Consumer Profiles. <i>Sotiris H. Avgoustis</i> .....	141
The Relationship Between the Experiences of Organized Sports League and Leisure Attitude. <i>Seok-Pyo Hong</i> .....	150

## Recreation Planning and Management

Park Partnerships: A Case Study of Yosemite Institute and Yosemite National Park. <i>Siri Doble, Chad Dawson, and Robin Hoffman</i> .....	157
The Importance of Environmental History in Natural Resources Management and Planning. <i>Karl Roenke</i> .....	162
The Effect of Fees on Recreation Site Choice: Management/Agency Implications. <i>Allan Marsinko</i> .....	164
Boosting Confidence In Importance-Performance Analysis: An Explanation and Application of An I/P Modification. <i>Erin K. Smith and Michael A. Tarrant</i> .....	172
The Destruction of Wildlife Habitat by Suburban Sprawl and the Mitigating Effects of Land Use Planning. <i>Richard B. Nichols</i> .....	177
Visitor Perceptions of Personal Security and Crime at Outdoor Recreation Areas: Contemporary Issues at US Army Corps of Engineers Lakes and Along the Appalachian Trail. <i>Robert C. Burns, Robert D. Lee Jr., and Alan R. Graefe</i> .....	186
Weather Related Liability in Outdoor Recreation. <i>Bruce Hronek</i> .....	190
Mountain Bicyclists' Behavior in Social Trail Etiquette Situations. <i>William W. Hendricks, Roy H. Ramthun, and Deborah J. Chavez</i> .....	194

Distinctions Between Permitted and Non-permitted Registered Snowmobilers. <i>Joel A. Lynch and Charles M. Nelson</i> .....	199
---	-----

**Historic Preservation in Recreation**

Museums and Cultural Institutions in Michigan: Can They Be Viable Tourism Attractions and Tourism Industry Partners? <i>Gail A. Vander Stoep</i> .....	205
--	-----

**Forest Resource Issues in Recreation**

Aspects of Nonindustrial Forest Ownership That Influence Attaining Recreation and Other Nontimber Objectives. <i>Donald F. Dennis, Thomas H. Stevens, David B. Kittredge, and Mark G. Rickenbach</i> .....	215
Recreationists' Attitudes Toward the Forest and Forest Management Policies. <i>Gene L. Theodori, A. E. Luloff, and Timothy A. Slack</i> .....	219

**Human Dimensions of Fisheries**

Development and Verification of a Specialization Index for Angler Segmentation. <i>Ronald J. Salz and David K. Loomis</i> .....	227
Testing Recreation Specialization: Application of a Specialization Index. <i>Kelly L. Finn and David K. Loomis</i> .....	232
Assessment of Tourists' Attitudes Toward Marine Aquaculture - A Preliminary Investigation of UNH's Sea Grant Discovery Passengers <i>Torene Tango-Lowy and Robert A. Robertson</i> .....	242

**Economics of Outdoor Recreation and Tourism**

Economic Impact of Elk Viewing in Rural Pennsylvania. <i>Bruce E. Lord, Charles H. Strauss, and Walter M. Tzilkowski</i> .....	251
Fiscal Trends in America's State Parks: A Eight-Year Analysis. <i>Daniel D. McLean, Deborah Chavez, and Julie Knapp</i> .....	257
Economic Impacts Of A Heritage Tourism System. <i>Charles H. Strauss and Bruce E. Lord</i> .....	264
Spending Priorities for Outdoor Recreation Planning in New Hampshire: Implications for Managers. <i>Al Williams, Sam Lankford, and Robert A. Robertson</i> .....	272
Determining Economic Impact Through Secondary Data. <i>Hans Vogel song and Alan Graefe</i> .....	275

**Contemporary Issues in Recreation and the Environment**

Information Search by Backpackers: A Qualitative Analysis of Planning Behaviors. <i>Roy Ramthun</i> .....	285
Using Geographic Information Systems with Travel Cost Models: A Case Study. <i>William Zawacki and Allan Marsinko</i> .....	287