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# Visitor attitudes toward and knowledge of restored bobcats on Cumberland Island National Seashore~ Georgia

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Abstract Effective management of our National Park Service lands requires information about the social aspects or human dimensions of wildlife. Understanding attitudes aids fish and wildlife professionals to predict public responses to management strategies like species restorations. We documented visitor attitudes toward and knowledge of restored bobcats *(Lynx rufus)* on Cumberland Island National Seashore (ClNS). Bobcats were restored on ClNS in 1988 and 1989. During fall 1997, we compared 4. visitor user-groups (white-tailed deer *[Odocoileus virginianus]* hunters [DH], day-only [DO] visitors, developed-site [OS] campers, and back-country [BC] campers) concerning their attitudes and knowledge, using a self-administered, drop-off questionnaire distributed on return ferries and at island campsites. We contacted 1,138 individuals. Overall response rate was 82.6%. Across 4 visitor user-groups, the mean attitude-toward-restored-bobcat score was 0.8, with a range of -18 to 16. A positive score represented a positive attitude, and a negative score represented a negative attitude. Zero represented neutrality. Deer hunters had a statistically less positive mean attitude score (-0.1) than the 3 other visitor user-groups. Overall mean score for knowledge-of-bobcats was 3.8 out of a perfect score of 10.0. Deer hunters had a statisti~ally greater mean knowledge score (5.1) than the 3 other visitor user-groups. Thus, our results indicated that visitor attitudes toward and knowledge of bobcats on CINS differed among the 4 visitor user-groups. Wildlife interpretive and education programs should be specifically targeted to address the differences in attitudes and knowledge among visitor user-groups.

Key words attitudes, knowledge, questionnaire, restored bobcats, visitor user-groups

Humans and wildlife are 2 of the most common components of this nation's public parks, forests, and recreation areas. Cumberland Island, a coastal barrier island located 0.5 km north of the GeorgiaFlorida border, was designated as a National Seashore in 1972 (public Law 92-536) under the administrative authority of the United States Department of the Interior, National Park Service. The physical and ecological characteristics of Cumberland Island National Seashore (ClNS) were

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described in detail by Hillestad et al. (1975).

Absher and Bratton (1986) reported 3 primary visitor user-groups for CINS. These included dayonly (DO) visitors, developed-site (DS) campers, and back-country (BC) campers. Another visitor user-group that was not investigated in their study was white-tailed deer *(Odocoileus virginianus)* hunters. Deer hunters (DH) have been using the island each autumn since 1980. Over 85% of visitors surveyed reported that wildlife viewing was important to their visit to the island (Absher and Bratton 1986).

To further restore native biodiversity and ecological integrity to CINS, bobcats *(Lynx rufus)* were successfully restored on the island in 1988 and 1989 (Diefenbach et al. 1993). The once-extant bobcats were extirpated in the early 1900s, probably from disease and persecution by humans (Warren et al. 1990). Initially, the restoration effort was controversial. The major concerns voiced were human safety, adverse effects on native wildlife species, and unclear objectives for the restoration project itself (Warren et al. 1990). Public involvement with the bobcat restoration project included written comments and petitions addressed to the National Park Service, 2 public meetings to review
the proposed project, and media coverage (Le., news articles, television broadcasts; Warren et al. 1990). Although common and often necessary, this level of public involvement and understanding is insufficient to predict human preferences for or support of wildlife management strategies such as carnivore restorations.

There is a precedent for using attitude surveys in research involving carnivore restorations (Bath 1987, McNaught 1987, Reading and Kellert 1993, Bright and Manfredo 1996, Lohr et al. 1996, Pate et al. 1996). Understanding attitudes aids fish and wildlife professionals to predict public responses and assess the social atmosphere that surrounds a particular restoration or management strategy.
Tarrant et al. (1997) gave 4 reasons why understanding public attitudes is important for effective fish and wildlife management: 1) wildlife agencies are legally mandated to consider public opinion during the decision-making process, 2) attitudes can predict human behavior, 3) a changing and more diverse wildlife constituency makes predicting human responses to management actions challenging, and 4) managing fish and wildlife at the ecosystem level requires that public attitudes and values be considered in conjunction with biologi
cal and physical data. A more accurate understanding of public preference gives managers a basis for better public representation and education (Bright and Manfredo 1996).

Nearly 10 years after a bobcat population was restored to CINS, we initiated the current study to better understand attitudes and knowledge levels of CINS visitor user-groups toward restored bobcats. We had 2 goals: 1) provide public land managers with an information base for better public education and wildlife interpretive programs and 2) contribute to our understanding of attitudes toward and knowledge of carnivores.

Our specific objectives were to: 1) measure and document visitor user-group attitudes toward restored bobcats and their objective, factual knowledge of bobcats on CINS; 2) identify differences among DO visitors, DS campers, BC campers, and the DH group concerning these attitudes and knowledge levels; and 3) identify demographic factors (e.g., education, gender, etc.) related to attitudes and knowledge for the 4 visitor user-groups. We hypothesized that there would be differences among the 4 visitor user-groups concerning attitudes and knowledge, particularly when comparing the deer hunters to the other visitor user-groups.

## Methods

### *Sampling and data collection*

Use of human subjects in this study was approved by the University of Georgia's Human Subjects Office (project No. H970060C1). The population of interest for this study was visitors to CINS during fall 1997. Sampling occurred from 8 October 1997 to 8 January 1998. We targeted 4 visitor or user-groups (DO, DS, BC, and DH). Because the DH group was accessible only on the dates of regulated hunts, we sampled the 3 other groups about 1 week prior to, the week during, and 1 week after each hunt. The managed hunts were held during the weeks of 20 October, 3 November, 15 December 1997, and 5 January 1998. To control for seasonal variation, we sampled all visitors during the same visitation period, namely fall 1997. Physical encounters were rare between deer hunters and the 3 other visitor user-groups because the hunting zone (northern region of the island) was closed to other activities during the 3-day hunts.

Approximately 60% of CINS visitation was by visitors staying one-half to 1 day (Absher and Bratton

Back-country camper arriving at Cumberland Island.

1986). Consequently, we tried to sample about 60% from the DO visitors. We divided the remaining 40% proportionally (quota sampling) among the remaining groups (Bernard 1994). We approached visitors :2:18 years of age on ferries leaving CINS and returning to St. Marys, Georgia, and, to a much smaller extent, in island campgrounds. No sampling occurred on ferry trips arriving at CINS from mainland Georgia. We sampled all visitors after they had experienced the island for some time. This was done for consistency because visitors who were new to the island may have differed from those who had spent time on the island. The ferry trips were critical to our sampling regime because they essentially transported all visitors to the island. Some deer hunters arrived at CINS via personal watercraft and were not accessible during return ferry trips; therefore, we sampled most of the DH group at the designated hunting camps.

We sampled visitors on weekdays and weekends and on morning and evening return ferries. During fall, ferries operated Thursday through Monday only. For efficiency, we systematically targeted ferries operating at or near capacity 050 people maximum) throughout the sampling period. Efficiency was an issue because ferry trips and personnel 03 researchers/ferry at any given time) were limited. To meet predetermined quotas for each visitor user-group, we occasionally sampled ferry trips that were below capacity. On average, we contacted approximately 40 adults/ferry trip.

On ferries and at campsites, we approached visi tors and introduced the study and the self-administered drop-off questionnaire. We immediately handed questionnaires and pencils to visitors who agreed to participate. Subjects took about 10-15 minutes to respond. During this time, we answered questions concerning how to complete the questionnaire (i.e., instructional questions). We collected completed questionnaires either directly from subjects or from drop-boxes on ferries or at campsites. After all questionnaires for a particular ferry trip were returned, we addressed questions about bobcats and our research. To prevent bias, we did not address such questions while subjects were completing the survey.

*Questionnaire design*

For a theoretical guide, we used the social-psychological Theory of Reasoned Action (Fishbein and Ajzen 1975,Ajzen and Fishbein 1980) to develop the attitudinal measure in the self-administered drop-off questionnaire. The structure and format of the questionnaire followed suggestions by Dillman (978) and Salant and Dillman (994). The questionnaire consisted of 12 attitude items, 10 knowledge items, 9 visitor information items, and 6 demographic items. One of the visitor information questions asked: "How important to you personally is the existence of bobcats on Cumberland Island National Seashore?" Its 5-point response scale was "not at all" 0) to "extremely important" (5). This served as a single-item indicator of the importance of bobcats existing on CINS. The last page of the questionnaire was left blank for open-ended comments. We pre-tested the questionnaire in an undergraduate forest recreation class consisting of 50 students to identify confusing or poorly written items, which were then revised. A copy of the questionnaire can be found in Brooks (998).

*Attitude measurement.* We measured attitude toward restored bobcats on CINS using 6 paired questions 02 total items). Each item was measured on a 5-point, Likert-type response scale. Before

Survey administrator aboard the ferry.

Successful deer hunters at the island's north end.

these items were written, we conducted an elicitation survey (Ajzen and Fishbein 1980, Fishbein and Manfredo 1992) by telephone to identify beliefs indicative of attitudes toward restored bobcats. Such beliefs can be thought of as the roots of attitudes and are salient to current issue(s). Salient beliefs comprise a set of beliefs about an issue or entity that comes to mind most readily in a targeted population (Ajzen and Fishbein 1980, Fisbein and Manfredo 1992, Pate et al. 1996). We conducted this preliminary procedure because salient beliefs are more representative of attitudes than responses to researcher-identified questions (Barro et al. 1994). Asking open-ended questions of a small representative sample of the population can identify salient beliefs. Responses that are most frequently recorded are considered to be salient beliefs (pate et al. 1996).

Our representative sample for the elicitation survey consisted of 31 randomly selected past CINS visitors (13 DO, 9 DS, 4 BC, and 5 DH), whom we contacted by telephone and asked to list advantages and disadvantages of having bobcats on CINS. We used content analysis (pate et al. 1996) to identify the most frequently listed advantages and disadvantages. Six specific statements about bobcats resulted from the elicitation survey. These became the items used to measure attitudes toward restored bobcats.

We measured belief strength by asking subjects the extent that they agreed or disagreed with each statement, using a 5-point scale ranging from "strongly agree" (+2) to "strongly disagree" (-2). To measure the evaluations of the belief outcomes, we asked subjects to rate a slightly different version of each item on a 5-point scale ranging from "very good" (+2) to "very bad" (-2). The middle response for the belief scale was "neutral" (0), compared to "neither" (0) for the evaluative scale. Following procedures used by Ajzen and Fishbein (1980), we multiplied each belief score by its corresponding evaluation score on an item-by-item basis for each subject. A single value resulted for each paired item ranging from -4 to 4. A positive value resulted when a subject indicated a positive belief and a positive evaluation, or a negative belief and a negative evaluation. A negative value resulted when a subject expressed a negative belief and a positive evaluation, or a positive belief and a negative evaluation (pate et al. 1996). We calculated an overall attitude index (score) for each subject by summing the 6 values for each paired item. Attitude scores could range from -24 to 24. A positive score represented a positive attitude, whereas a negative score indicated a negative attitude. Scores near or at 0.0 represented neutrality.

*Knowledge measurement.* We measured subjects' objective, factual knowledge of bobcats using 10 quiz questions with "true;' "false;' and "I'm not sure" as response categories. **In** our study, knowledge items were compiled from a set of researcheridentified items, specific to CINS bobcats, and items previously used by Bath (1987) and Reading and Kellert (1993) to measure objective knowledge about other carnivores. Because we intended to measure knowledge about bobcats, these later items were specifically altered to ask about bobcats. Correct responses were scored 1, whereas incorrect or "I'm not sure" responses received a score of 0.0. We used the "I'm not sure" response option to decrease guessing. We summed the scores of the 10 individual items to calculate a knowledge score for each respondent (Bath 1987). Possible knowledge scores ranged from 0.0 to 10.0. Ten was a perfect score.

*Analyses*

We analyzed data using SPSSIPC+7.0 (SPSS Inc. *1996a, b).* We tested the 4 visitor user-groups for differences concerning attitude and knowledge scores using a I-way analysis of variance (ANOVA), followed byTukey's studentized range (HSD) multiple comparisons test. We calculated Levene's test for equal variances (SPSS Inc. *1996a)* and used square-root transformation of attitude score plus 19 (due to negative and zero scores) in instances of unequal variances. We reported original means and standard deviations. We calculated Pearson's product moment correlation coefficient to determine

whether significant relationships existed between visitor information and demographic variables and attitude-toward-bobcat or knowledge-of-bobcat scores for each visitor user-group. We used Spearman's rho (the non-parametric equivalent to Pearson's coefficient) for variables whose values consisted of ordered numeric codes (ordinal measures).

Because the DH group was essentially all males, we used an independent samples (-test to identify differences between males and females regarding knowledge scores. We also conducted this analysis to test for differences between first-time visitors and those reporting ~2 return visits regarding knowledge score. For all statistical tests, *P~0.05* was required for rejection.

## Results and discussion

### *Questionnaire response*

Of the 1,138 individuals approached with a questionnaire during the fall 1997 visitation season, 940 completed the questionnaire, for an overall response rate of 82.6%. Of the 1,138 individuals approached, 152 refused to participate by not accepting a questionnaire. Of these 152 refusals, 5 could not read the language of the instrument (English). The refusal rate for the DH group was 19.6%. Combined refusal rate for DO visitors, DS campers, and BC campers was 17.0% (these groups were mixed on ferry trips so individual refusal rates could not be calculated). Because of the great overall response rate, we did not conduct tests for nonresponse bias. We recorded 46 questionnaires as missing. Of the 940 completed questionnaires, 26 were from visitors who listed "other" for the visitor user-group item. These were not included in the analyses. We used 914 (80.3%) questionnaires in the final data set.

### *Attitudes among user-groups*

The mean attitude score for the 830 visitors who completely responded to the 12 attitude items was 0.80 (SD=3.9). The range of attitude scores was -18 to 16; therefore, an overall mean of 0.8 essentially indicates an overall neutral attitude, when all visitor user-groups were pooled. Attitude scores differed significantly among visitor user-groups (Table 1, *F=6.127,P<0.00l).* The DH group essentially had a neutral mean attitude-toward-bobcat score compared to the positive scores for DS campers, DO visitors, and BC campers (Table 1). However, these significant differences may have been an artifact of our large sample size. Considering that the range in attitude scores was -18 to 16, the maximum difference in mean attitude scores that we observed (Le., 1.5, which was the difference between means for the DH and BC groups, Table 1) was probably not indicative of substantively and psychologically significant differences in attitudes among groups.

Table 1. Mean attitude-toward-restored-bobcats and knowledge-of-bobcats scores for 4 Cumberland Island National Seashore visitor user-groups for fall 1997.

| | Attitude scorea | | | Knowledge scoreb | | |
|---|---|---|---|---|---|---|
| Groupc | *x* | SD | *n* | *x* | SD | *n* |
| DO | 0.9Ad | 3.3 | 397 | 3.5A | 2.2 | 427 |
| DS | O.7A | 3.1 | 195 | 3.9A | 2.3 | 204 |
| BC | l.4A | 3.2 | 137 | 3.8A | 2.1 | 141 |
| DH | -O.lB | 7.0 | 101 | 5.1 B | 2.3 | 96 |
| Overall | 0.8 | 3.9 | 830 | 3.8 | 2.3 | 868 |

a Attitude scores ranged from -18 to 16 with a positive value representing a positive attitude, a negative value representing a negative attitude, and 0.0 representing neutral.

b Knowledge scores ranged from 0.0 to 10.0.

C DO=day-only visitors, DS=developed-site campers, BC=backcountry campers, DH=deer hunters.

d Visitor user-group means with dissimilar letters are statistically different *(P<0.05;* Tukey's studentized range multiple comparisons test; SPSS@ base 7.0).

Lohr et al. (996), investigating the social component of a possible wolf *(Canis lupus)* reintroduction into New Brunswick, Canada, found that hunters were negative toward wolves and naturalists were positive. Northern deer hunters (where the hunting season was closed due to deer scarcity) had significantly more negative attitude scores than southern deer hunters and 2 groups of naturalists (Lohr et al. 1996). In the wolf study, the possible range of attitude scores was -18 to 18, which was practically the same as our observed range for attitude scores. However, in the wolf study, mean deerhunter attitude scores were substantively different from zero and negative (Lohr et al. 1996).

### *Knowledge among user-groups*

Mean knowledge score for the 868 visitors who completely responded to the 10 knowledge items was 3.8 out of a possible 10.0 (SD=2.3), indicating a relatively low level of knowledge about bobcats for fall 1997 visitors to CINS. Knowledge of bobcats differed among visitor user-groups (Table 1; *F=12.998, P<O.OOI).* Deer hunters had a signifi

cantly greater mean knowledge-of-bobcat score than the 3 other visitor user-groups (Table 1). That is, the DR group scored significantly greater on the knowledge-of-bobcats quiz than the 3 other visitor user-groups. Given the tighter range for knowledge scores (0.0-10.0), the mean knowledge score difference between deer hunters and the 3 other groups is more meaningful than what we observed for attitudes toward bobcats (Table 1).

Kellert and Berry (1987) reported that males had significantly greater knowledge-of-animal scores than females. In our study, an independent samples t-test for a difference between females and males in knowledge across all visitor user-groups resulted in a statistical difference between males and females *(t=4.097, df=860,P<0.00I).* Males (X=: 4.1, SD=2.3, *n=479)* had greater knowledge-of-bobcat scores than females (X=: 3.5, SD=2.2, *n=383).* We conducted the same test without the DR group, which was almost entirely male. It also indicated a difference between males and females *(t=2.480,* df=765, *P=0.OI3).* To control for the significant gender effect, we ran a I-way ANOVA for knowledge score among visitor user-groups using only male subjects. This test was significant *(F=8.244, P<O.OOI).* The subsequent Tukey's RSD test *(P<0.05)* indicated that males from the DR group (X=: 5.1, SD=2.3, *n=94)* had greater knowledge-of-bobcat scores than male DS campers (X=: 4.2, SD=2.4, *n=96),* DO visitors (X=: 3.8, SD=2.3, n=I9I), and BC campers (X=: 3.7, SD=2.I, *n=98).* We conducted the F-test again for both sexes, excluding the DR group. It detected no significant differences among DO, DS, and BC visitor user-groups. We concluded from these analyses that the significantly greater knowledge scores for the DR group were not simply reflecting a gender effect.

Nearly 80% of the DR group were return visitors C?2 visits). For this reason, we conducted an independent samples t-test with all visitor user-groups pooled to test for differences in knowledge between first-time visitors and return visitors. This test indicated that return visitors (X=: 4.5, SD=2.2, *n=377)* had greater *(t=7.742,* df=83I, *P<O.OOI)* knowledge-of-bobcat scores than first-time visitors (X=: 3.3, SD=2.3, *n=456).* Then, we conducted the same test without the DR group. The results were significant *(t=6.296,* df=738, *P<O.OOI)* and revealed that, for DO, DS, and BC visitor user-groups, return visitors (X=: 4.3, SD=2.2, n=30I) had greater knowledge scores than first-time visitors (X=: 3.2, SD=2.3, *n=439).* From these analyses, we conclud ed that the greater knowledge scores for return visitors were not simply reflecting the effect of the high-knowledge levels characteristic of the DR group, most of whom were return visitors.

Perhaps repeat visits to CINS and repeat attendance at wildlife interpretive events have positively influenced the knowledge levels of people about the bobcat situation and CINS wildlife in general. This question could be investigated during future research. People who repeatedly visit parks and wilderness areas may be more interested in the components of such places (e.g., wildlife). We believe that personal interest also logically leads to self-education for some people. Number of previous visits is an important variable to consider when studying visitor groups on CINS. In our study, 46% of subjects were return visitors.

### *Correlations among attitudes, knowledge, visitor information, and demographics*

We found neither attitude nor knowledge to be significantly correlated with either age or distance traveled to visit CINS for the 4 visitor user-groups.

Seven other variables (education, importance of bobcats existing at CINS, importance of seeing wildlife, where the individual grew up, whether they had previously seen a bobcat in the wild, gender, and amount of wildlife programming viewed on television) were tested against knowledge and attitude score using Spearman's rho correlation coefficient. We found no significant correlations between education level and attitude or knowledge scores. The mean education level of our visitor population was between the trade-technical-vocational training and college graduate categories. Education level may have no influence on the type of knowledge we measured (Le., specific factual knowledge of an individual species), or perhaps there was not enough variation in education level in our sample to make an adequate test. In other words, we do not know whether knowledge or attitude correlated with low education, because our sample had a high education level.

For the DR group, the single item measure of importance of bobcats living on CINS was correlated positively with attitude *(r=0.46, P=O.OI).* Importance of bobcats living on the island (existence importance) accounted for 21% *(R2=21.0)* of the variation in DR attitudes toward restored bobcats. It is unclear how the relationship between existence importance and attitudes toward bobcats relates to how important the attitudes were (atti

tude importance) to the individual deer hunters sampled. A reliable and multiple item measure of attitude importance could have provided useful information because attitude importance is associated with attitudes that tend to be resistant to change, persistent over time, and capable of guiding behavior (Krosnick et al. 1993, Boniniger et al. 1995, Krosnick and Petty 1995). In other words, important attitudes are more likely to predict behavior than unimportant attitudes.

Existence importance of bobcats at ClNS correlated positively with knowledge of bobcat scores for the DS *(r=0.43, P=O.OI),* DO *(r=0.23, P=O.OI),* and BC *(r=0.26,P=0.01)* groups, respectively. These are modest to small correlations. Previous work in social psychology has documented similar correlations between importance and knowledge of the attitude object (Wood 1982, Krosnick et al. 1993). We found no significant correlation between knowledge and existence importance for the DH group.

The importance of seeing wildlife (a visitor information variable) for the decision to visit ClNS was not related to either knowledge or attitude scores. However, the overall importance of wildlife viewing to CINS visitors has remained great. Absher and Bratton (1986) reported 88.0% of visitors surveyed indicated that seeing wildlife was moderately, very, or extremely important to their decision to visit CINS. For the fall 1997 visitation period, 87.0% of the visitors responding to the identical question fell within these same categories. We noted that, unlike Absher and Bratton (1986), our sample included deer hunters, who naturally want to see wildlife.

For the remaining variables (where visitors grew up, having seen a bobcat in the wild, gender, and amount of wildlife programming viewed on television), we found no significant relationships with attitude or knowledge score. Some of the variables investigated in this study were used earlier at CINS (Absher and Bratton 1986). Some variables were identified, from the literature, as being related to attitudes toward other carnivores in other areas.

Mean attitude scores for DS, DO, and BC groups toward restored bobcats were not substantively positive, and mean attitude score for the DH group toward restored bobcats was not substantively negative. The attitude scores were clustered around the midpoint of the scale, which was neutral. This result also could explain why no strong correlations with attitude were revealed. Because we conducted our investigation nearly 10 years after the restoration of the ClNS bobcat population, the issue may not have been salient to the average visitor to the Seashore. The controversy surrounding the bobcat restoration involved local interest groups; one of these was a local hunting group (Warren et al. 1990). However, the average distance traveled by visitors to CINS during the fall 1997 season was 681 km. This represents more than the local population, for whom bobcat restoration, at one time, probably was a salient issue.

The secretive nature of bobcats and the narrowness of the topic are important when considering the overall low mean knowledge-of-bobcats score reported in our study. Few people have any direct contact with bobcats. Direct experience with an attitude object is an important source of information about that object or issue (Fazio and Zanna 1981). Generally, human understanding of the qualities and characteristics of attitude objects often develops through direct exposure (Wood et al. 1995). There are not many opportunities for the general public to learn about bobcats through direct experience. For most people, knowledge of wildlife species is probably gained through other media, such as books and television. The typical national park visitor does not possess factual knowledge of elusive carnivores, such as bobcats. The knowledge-of-bobcats scores recorded in our study reflect this. The fact that the DH group scored greater than the 3 other groups is meaningful. However, our results do not explain why this occurred. Perhaps hunting is associated with more interest in wildlife, leading to self-education. Also, different outdoor activities offer different wildlife experiences and learning opportunities that may differentially influence wildlife knowledge. For example, does recreational wildlife viewing lead to more knowledge than hunting and angling or vice versa? Future research should address how type of wildlife recreation activity relates to wildlife knowledge and attitudes.

## Implications for wildlife education programs

Differences in wildlife knowledge and attitudes among public lands user-groups need to be incorporated into education programs. Public lands interpreters and environmental educators working to increase the knowledge levels of their visitorgroups should become familiar with factors influencing knowledge levels. Different constituency

groups possess different levels of knowledge about wildlife species. Therefore, education programs that are targeted toward groups based on their experience and knowledge levels will most likely be effective. For example, in the case of CINS, dayonly visitors may benefit more from rudimentary biological information in their educational programs than deer hunters.

To promote better visitor understanding of wildlife, particularly carnivores, education should attempt to include wildlife viewing. More programs should focus on rarely seen but important species (Le., keystone species). The feasibility of providing alternative wildlife viewing experiences, such as blinds or viewing attempts at dawn and dusk, should be considered. These experiences may be important to wildlife education. Because mammalian carnivores are rarely experienced this way, it is important to attempt to provide carnivoreviewing opportunities and, at minimum, visitor center displays and poster presentations that focus on carnivores and other elusive species of social or ecological concern.

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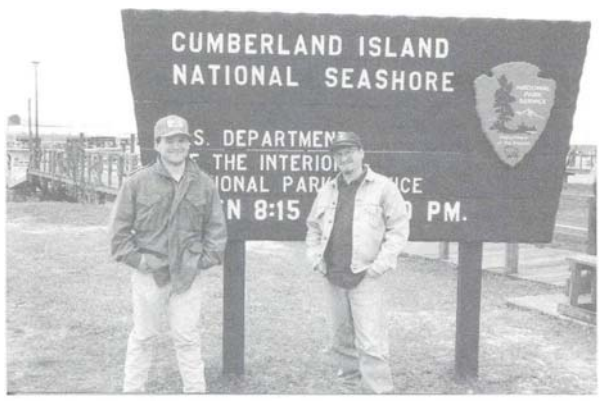


***Jeff Brooks*** (at right in photo) is a doctoral student in the Department of Natural Resource Recreation and Tourism at Colorado State University's College of Natural Resources. He received an M.S. in conservation ecology and sustainable development from the University of Georgia; his B.S. in biology came from Saginaw Valley State University and an A.S. in biology from Delta College, both in Michigan. From 1990 to 1992, Jeff worked as a United States Peace Corps volunteer in Benin, West Africa. His work there focused on water-borne disease control and Guinea worm eradication. From 1993 to 1996, he was employed (at separate times) by the University of Georgia, Americorps, and the National Park Service as a wildlife field technician in various locales in Georgia and Florida. He is a member of The Wildlife Society and the National Peace Corps Association. Jeff's primary research interests include applying social, psychological, and anthropological theory and methodology to natural resource issues, human dimensions of wildlife, human ecology, sustainable development, and community-based management. ***Bob Warren*** is a professor of wildlife ecology and management in the Daniel B. Warnell School of Forest Resources at the University of Georgia. He formerly was on the wildlife faculty at Texas Tech University. Bob obtained a B.S. in zoology from Oklahoma State University and an M.S. and a Ph.D. in wildlife from Virginia Polytechnic Institute and State University. Bob is Southeastern Section Representative to TWS Council (1997-2000). He served as president of the Southeastern Section (1992-1993), and as associate editor for the *Wildlife Society Bulletin* (1986 and 1987) and the *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies (1988* and 1989). Bob's current areas of research interests are the ecology and management of wildlife populations, especially in parks and urban-suburban areas. ***Greg Nelms*** (left in photo) recently accepted a biologist position with the Florida Fish and Wildlife Conservation Commission. He completed an M.S. in wildlife at the University of Georgia. His research focused on the effects of bobcat reintroduction on the white-tailed deer population on Cumberland Island National Seashore, Georgia. Greg received a B.S. in forest resources with a concentration in wildlife ecology and management from the University of Georgia and an A.A.S. in wildlife technology from Abraham Baldwin Agricultural College. His primary areas of interest are responses of wildlife populations to management, ecology of fire-dependent ecosystems in the southeastern United States,
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