

HUNTER-FISHERMAN CHARACTERISTICS: FACTORS IN WILDLIFE MANAGEMENT AND POLICY DECISIONS

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ABSTRACT. Research on the characteristics and motivations of hunters and fishermen is examined for factors important to resource managers and policy-makers. Characteristics related to the learning experience, time for participation, utilization and accessibility of the resource base, and the type of fish and game harvested are considered. Motivational research, although in its infancy, suggests that participation in these sport activities has importance other than for only the taking of fish or game. In-depth motivation research is needed.

DURING THE PAST decade researchers associated with land and water resources have focused attention more and more on the so-called outdoor recreationist. Social scientists, especially those with an undergraduate education in, or a casual acquaintance with, one of these resources, have conducted research to study participants in one of many activities—camping, hiking, boating, skiing, hunting and fishing. The impetus for this work gained momentum with publication of the Outdoor Recreation Resource Review Commission's reports, some of which dealt with participants in recreation in general and others with particular activities.

Many recreation-participant studies have described the characteristics of the user in terms of socio-economic, demographic, and participation criteria. These criteria are analyzed by correlating a variety of dependent factors against certain independent

ones, usually showing some interesting associations. Interesting to whom? As recreation researchers—campers, hunters, fishermen—we have often considered this question.

In our association with the regional technical committee that undertook a "Consumer Analysis of Forest-Oriented Outdoor Recreation Activities in the Northeast," (N.E.M. 35), we were called upon in the annual reports to indicate the usefulness of the findings. This is always a challenge! Most of us resorted to the rationale that the information collected and presented about the characteristics of hunters and fishermen is useful to managers and policy-makers. We have never been asked to prove this contention—and would probably have a difficult time to do so. The most objective proof derives from requests for publications.

Future managers and policy-makers will

benefit by studies similar to those done by the N.E.M. 35 Committee because they serve as benchmarks with which later studies can be compared. The value of data-assimilating research is sometimes questioned because it lacks depth. On the other hand, it is well to know the situations existing at various points in time and thereby to be able to predict trends.

It may be presumptuous of us—because we are not in the position of manager or policy-maker, nor are we trained in resource professions dealing directly with wildlife or fish—to attempt an examination of the utility of knowledge about characteristics of hunters and fishermen as they relate to management and planning. However, it may be helpful to those of you who are in this position to have our views on the manner by which we perceive how information from studies of hunter-fisherman characteristics may be interpreted.

The research on which much of this paper is based was done by an interdisciplinary group from six Northeastern States—New York, Maine, Massachusetts, Pennsylvania, Vermont, and West Virginia. Economists with agricultural and forestry backgrounds, a rural sociologist, and a wildlife biologist comprised the committee. The diversity of outlook, although a deterrent to the development in one sense, proved valuable in the long run. Our views have been influenced by varied disciplines.

CHARACTERISTICS

Consider some of the characteristics about which information has been gathered, and what possible meaning they have to the policy-maker. The statistics we have are from the hunter-fisherman phase of N.E.M. 35 (*Bevins et al. 1968*). Four general areas of knowledge about hunters and fishermen are: the learning experience, time for participation, utilization and accessibility of the resource base, and type of fish and game harvested.

Learning Experience

A number of sociologists have shown that, if people participate in a recreational activity, they learned to do it at a young

age (*Nash 1962*): "A thousand case studies . . . of adults with recreation skills indicate that many skills were established before the age of 6 and fully 90 percent before the age of 14."

We found that the average hunter was 38 years old and the average fisherman 40. The average number of years that they had participated was 21 and 26 years respectively. This means that, on the average, hunters learned this sport at 17 and fishermen at 14. It should be pointed out that hunting is precluded by law before a certain minimum age, which varies by state.

We found that 84 percent of the hunters and 93 percent of the fishermen participated in these activities in their youth (16 years or younger). Hunters, on the average, participated alone at the age of 16 years and fishermen at 13 years.

These statistics seem to verify the early learning experience contention. Admittedly, we have no knowledge about those people who no longer hunt or fish but did so in their youth. To make these statistics relevant to the manager and policy-maker we need to consider other characteristics known about these sportsmen.

One of these factors is the source of learning. For both hunters and fishermen, 70 percent were introduced to this activity by a parent or other relative. Asked if they took any children under 16 years of age with them to participate in these activities during 1965, 27 percent of the hunters said they did and so did 59 percent of the fishermen. Parents and relatives will undoubtedly have an increasingly less important role in introducing children to hunting and fishing as they reside in urban areas where the resource base is not as easily accessible.

Another characteristic needs consideration: the rurality of residence during childhood. Seventy-two percent of the hunters and 68 percent of fishermen said they spent most of their childhood in a rural area. It is difficult to define a rural area, and obviously there is some relativity involved in the individual's interpretation. We can only assume that although rural Massachusetts and Maine, as extremes, are different, they each offered about the same opportunity to hunt and fish. Seventy-eight percent of the Maine hunters spent their childhood in a

rural area as compared with 67 percent of those in Massachusetts. For fishermen the percentages were 72 and 62 respectively.

Evidence for the apparent importance of a rural background in youth as a commitment to hunting and fishing can be observed from Maine and Massachusetts findings. Different percentages of rural backgrounds were found for persons in Maine who hunted only, 77 percent; fished only, 64 percent; and both hunted and fished, 83 percent. In Massachusetts a similar relationship held true: hunted only, 58 percent; fished only, 54 percent; and both hunted and fished, 69 percent. A greater proportion of people who participate in both sports came from rural areas during childhood, thus indicating the greater influence of a rural background to the combination activity.

The thing about rurality that is important is the number of people today who are living in a rural situation. The statistics are roughly the inverse of what were found for hunters and fishermen: today 70 percent of the population is urban. Projections for future populations are that the Nation as a whole will be 75 to 80 percent urban within the century.

Obviously the learning experience in hunting and fishing is going to be considerably different for much of today's youth and those of the future than in the past. The opportunity, and thus the desire to participate, in such sporting activities will encompass a diminishing segment of the population. This is already evidenced in the declining rate of increase in license sales over the past few years in a state such as Massachusetts. If one assumes a desire to maintain a high level of interest in hunting and fishing for the many benefits one can attribute to them, a method of fostering the learning experience of urban and suburban youth may be required.

Until the present, fish and game managers and policy-makers have focused their attention primarily on providing game and fish. They have emphasized the biological aspects of perpetuating the species. Future emphasis on the user of the resource, whether he hunts or fishes or simply observes, is going to require a reorientation in

decisions relating to management and policy-making.

Time for Participation

When and how much time is devoted to hunting and fishing by today's sportsman? About three-quarters of our respondents said that they would like to hunt or fish more than they do, and that for hunters (we did not ask fishermen) time was the most frequently mentioned constraint; 79 percent so indicated.

Approximately one-third of the respondents for each sport worked more than a 40-hour week. Three-fifths had a Saturday-Sunday days-off pattern, about one-sixth reporting only Sunday free during the normal work week. Therefore, slightly over three-fourths of the respondents had only weekends for these activities unless they lived close enough to the resource to enable them to do so before or after work.

It might be assumed that because weekends are the predominant leisure time, an effort would be made by hunters to have Sunday hunting legalized. Maine nonresident sportsmen were asked if they favored Sunday hunting; 44 percent did, 28 percent did not, and 28 percent did not answer. Of those not answering, 84 percent were fishermen only. Because Sunday hunting would facilitate participation by nonresidents, greater support could have been anticipated for this question.

Three-fourths of the hunters and fishermen took vacations. These varied in length, a third having 10 days or less and a third having 21 days or more. Important to the vacation statistic is the degree of use of this vacation for hunting or fishing. Forty-one percent of the hunters used some portion of their vacation to hunt, and 55 percent of the fishermen used part of it to fish. The greater activity by fishermen is related to the concurrency of vacation time and fishing season. Also, fishing is more closely tied to activities enjoyed by families, such as swimming and boating.

If a hunter uses vacation time to hunt, he will devote more hours to it than the fisherman will to fishing. The lesser time spent by fishermen probably reflects family involvement and the need to share vacation

time activities. The hunter may expressly take a vacation to go hunting and not be accompanied by his family.

These findings imply two things for the resource manager. First, an effort is needed to make the resource more readily available. Second, applicable only to hunting, is that where Sunday hunting is excluded, changing the law would provide more time to the hunter during existing seasons. In the six participating states, only Vermont and certain rural New York counties allowed it. Another way of achieving more time would be to extend seasons, but this might not be feasible on a supply-and-demand basis. In fact, simply permitting Sunday hunting might require curtailing the length of season in order to perpetuate certain game species.

The question of satisfying demand is foremost; yet there is good reason for close regulation. Obviously the hunter cannot have all the time he would like to have for hunting. In Maine and Massachusetts there is perennial legislation before the Legislature to permit Sunday hunting. It is inevitably defeated, but not from the rationale of perpetuating game species.

Utilization and Accessibility of Resource Base

A relatively small proportion of hunters (25 percent) and fishermen (20 percent) belonged to a sportsman's group. Of those that did, about one-third were in a club or group that owned land for hunting or fishing; and 20 percent of the hunters and 10 percent of the fishermen were members of clubs that leased lands for these purposes. Only 6 percent of the hunters reported using club lands to hunt.

As might be expected, individual land ownership for hunting purposes was not extensive, although perhaps 24 percent is more than would be anticipated. Twenty-three percent of the hunters said that they hunted on lands owned by them in their State. Leasing of hunting and fishing rights by individuals was negligible. The ownership of camps for the primary purpose of hunting (15 percent) and fishing (8 percent) varied greatly among the States.

Just how much change has occurred

over the years in this pattern of owning a resource base on which to participate is not known. The more rural the hunter and fisherman population, probably the greater the likelihood of resource ownership and thus the easier its accessibility.

It is evident from these statistics that private and public land ownerships are heavily relied upon as a base for participation. For the region, dependency on either type of ownership appears to be equally shared. However, there is often some question whether the sportsman knows who the landowner is. Taking into account the fact that the Northeastern States are predominantly in private ownership would place an inordinate pressure on the existing public land base for hunting. This implies the need for additional public land or public subsidization for management of private lands to promote game availability.

A further implication is the need to maintain or improve access to private lands. Strangely enough, however, at the time of this study, access did not seem to be a problem, because in the region only 17 percent of the hunters and 11 percent of the fishermen indicated it as a problem. The most urban states had the most hunting accessibility problems—New York (23 percent), Massachusetts (21 percent), and Pennsylvania (19 percent). This may indicate that with urbanization come greater access problems and an increased need to provide for public sponsorship of the resource base.

The availability of the resource base for participating in hunting and fishing activity, as well as other outdoor recreation, will be an increasingly perplexing problem. Programs are underway in many states to improve access. As an example, in Maine and Massachusetts, boat-launching facilities have been constructed in recent years. Also, Massachusetts has an active program of land acquisition for game and fish management areas. The free use of the resource base has been the accepted norm in the United States throughout its history. Excluding recreationists from private lands is becoming more common. The reason for posting land may be to control use rather than to preclude it. However, even the hunter and fisherman, who are the ones

excluded, supported the right of private landowners to prohibit these activities on their lands—88 percent of the hunters and 72 percent of the fishermen. The rights of private land ownership are apparently well entrenched and respected by these sportsmen.

Hunting and fishing as a marketable activity is accepted by a fairly substantial number of hunters (43 percent) and fishermen (38 percent), but not by the majority. The price that people are willing to pay for a day of activity is not large. Only 5 percent indicated a willingness to pay over \$5 per day for hunting small game and fishing and 20 percent over \$5 per day for hunting big game.

The six States in which the regional study was conducted produced some unexpected contrasting findings about willingness to pay to hunt and fish. The two most rural States, Maine and West Virginia, were at the extreme ends of the spectrum. In Maine, 33 percent of the hunters were willing to pay to hunt, while in West Virginia 59 percent were. Thirty-three percent of Maine fishermen indicated a willingness to pay, in West Virginia 50 percent.

The reason for the differences in willingness to pay between hunters and fishermen in these States appears to be due to availability of the resource base. Even though land is plentiful in West Virginia, its use is more restricted. Also, the availability and quality of bodies of water for fishing in Maine are far greater than in West Virginia. In Maine, water bodies larger than 10 acres come under the Great Ponds Act, which requires that they be accessible to public use. Control of the resource base seems to be a major factor in willingness to pay for sport hunting and fishing.

An ever greater opportunity presents itself to market hunting and fishing; and in some States, sale of these rights is already common. The day may come when hunting and fishing on private lands will be available only at a price. Whether the participant or the general public pays is a policy question.

Fish and Game Harvested

We are not going to elaborate too much on the species of game and fish taken for two reasons. One, there is obviously a high correlation between game and fish sought after and their indigenous availability. Second, we begin to tread on even unsteadier ground than heretofore, because of the biological aspects of game management.

If one examines the regional and state statistics, the correlation between species availability and what is hunted or fished is apparent. Deer, small game mammals, and upland game birds (excluding turkey) are hunted most, in that order. Massachusetts and West Virginia are the only States where deer is not uppermost in importance. The deer is replaced by upland game birds in Massachusetts and by small game in West Virginia. In Maine, upland game birds rank second in importance.

In popularity, the fishes in the six States rank this way: trout, bass, panfish, pickerel, and pike. In Maine, salmon ranks second; and in West Virginia bass outranks trout. The ranking by states varies greatly.

Are these really preferences? Biological constraints act to inhibit changing species composition in most states; therefore, what is indigenous is preferred. Some steps can and are being made toward introducing other species, but both the economic and ecological impacts are being more frequently questioned.

One thing that resource managers might do is to change preferences of the consumers—hunters and fishermen. By making available more native species, participation in the activity might be enhanced. The bag or catch may not be the sole reason for participation. To change species preferences, people manipulation is necessary, as opposed to managing fish or game. A little of the Madison Avenue advertising strategy could be helpful. The commercial fisheries industry is attempting to change consumer preferences by convincing people that pollock is as good as haddock. This is an attempt to alter demand to place it in balance with supply.

An entirely new facet in managing and policy-making may be attributed to those recreationists who seek game only for observation purposes. Their objectives are different from those of the hunter, so they create an entirely new set of factors to be considered.

MOTIVATIONS

Motivation and attitude research for this group of recreationists—and in fact for all forms of activities—is in its infancy. Our association with this work has been minimal. The study about hunters by Thomas A. More (1970), as yet unpublished, was done at Massachusetts under Bond's direction. Boat-using sport fishermen were studied in Rhode Island by Irving A. Spaulding (1970). Each of these researchers used a different approach, and their findings are limited in scope but serve to illustrate a point.

In both of these studies an attempt was made to discover why people participated in these activities and what they derived from them. In both, it is our interpretation that the enjoyment of participating was not so much the success of the harvest but the many experiences related to the activity.

Using factor analysis, More was able to isolate seven factors illustrating attitude motivations of hunters. He did this by submitting 52 statements, attitude objects, to a randomly selected sample of licensed Massachusetts hunters. The attitude objects were ranked by respondents on a five-step scale from strongly agree to strongly disagree. A measure of consistency of response within the seven factor groups, termed an *Eiginvalue*, was used to measure the factor strength. The seven factors in order of declining *Eiginvalue* are: display, aesthetics, communality, pioneering, the kill, familiarity, and challenge. Although the *Eiginvalue* may be a poor measure for ranking importance, it can serve as an indicator.

What his findings seem to indicate is the importance of the things associated with hunting. Showing off guns, the enjoyment, beauty, and tranquility of being in forest and field, the communality of associates, the escape from everyday responsibilities,

the proof of manliness, the challenge of locating the game—all of these things seem to be an integral part of the actual experience of hunting. The display of game and the enjoyment of eating it is also important.

Dr. Spaulding, a sociologist at the University of Rhode Island, has a complex analysis of information collected from 151 mail-questionnaire respondents who were boat-using fishermen. In his conclusions he lists six attributes that sport fishermen would miss if they had to stop fishing: (1) Experiencing the euphoria-tension dynamic, (2) catching fish, (3) involvement with some aspect of the environment, (4) interpersonal relationships and aesthetic attributes of the environment, (5) experiencing transition from one situation to another, and (6) personal integrative responses.

The point to be illustrated by very briefly citing these two motivational studies is that there is obviously more to participation than killing game and catching fish. There is a need for the resource manager and policy-maker to consider these things in their decisions. The interpretation of the findings as they bear upon decisions is not conclusive, but there is obviously some important input information to be gained from this type of social-psychology research.

FUTURE RESEARCH

We have considered two forms of hunter-fisherman research. One concerns the characteristics of present participants; the other an attempt to look within the person to uncover the whys and satisfactions derived from hunting and fishing. An attempt has been made to show how both forms have utility to the manager and policy-maker who is called upon to provide the basics to participation—resource base (environment) and commodity (fish and game).

Future research can be greatly enhanced by the decision-maker telling the researcher what it is that he feels needs to be known about hunters and fishermen. The N.E.M. 35 Regional Committee, in its planning, contacted State fish and game agencies and asked for assistance. Some was provided, but probably not enough.

A follow-up question to accomplished research should be: do managers and policy-makers find it useful? There are two worthwhile reasons for doing this research: it provides a norm for later studies, and it should have current usefulness to those having responsibility for resource management and policy-making.

Future research should be valuable in providing inputs into the decision-making process. We need to build some models and collect data that will help this process. We need to know, first, what is needed, rather than simply going out and collecting a lot of information.

Research in studying people is even more complex than controlled experiments. A marketable and consumable commodity

lends itself more readily to an examination of demand than a free-use participatory commodity.

In-depth research into the motivations and attitudes of hunters and fishermen is needed for a better understanding of the values they place on participation. The surface is just being scratched in this research field. It is imperative that the resource specialist contribute his knowledge to the social scientists doing this research. Better still, professional resource personnel who are so inclined can become social scientists and, having backgrounds in both fields, can contribute to a greater degree than those researchers having knowledge of a single discipline.

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