Status of hunter recruitment and retention in the United States
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Abstract
Participation indicators of hunter recruitment and retention in the United States (U.S.) point to decreasing trends, although some regions of the country are experiencing slight increases in hunter-education graduates and license buyers. If the overall declining trends persist, they could have serious implications for continuation of some wildlife agency programs that depend on hunters for political, financial, or harvest-related support. Superficially, these trends also might be interpreted to indicate lessening need for programs aimed at providing hunting recreation or maintaining cultural benefits relating to hunting. Consequently, it is important to understand whether participation indicators tell the whole story regarding hunter recruitment and retention. Social-psychological indicators also need to be taken into account and definitions of recruitment and retention need to be considered carefully. Integrating social-psychological and participation indicators suggests that recruitment and retention may be decreasing, but at a rate slower than participation indicators alone would depict. More emphasis on measuring social-psychological indicators could have several important benefits that lead to more positive implications for wildlife agency programs.

Key Words
hunters, participation indicators, recruitment, retention, social-psychological indicators, trends

Hunter recruitment is the number of people entering the hunter population. An indicator of recruitment in any given year is the number of first-time participants (e.g., license buyers or graduates from hunter-education courses). Hunter retention is the number of people remaining in the hunter population over time. An indicator of retention is the comparison of the number of participants from year to year (i.e., license buyers or the number of persons who say in a survey that they hunt), accounting for new recruits and those who cease participation between years. A secondary indicator of retention is the mean number of days that persons hunt annually. Decreases in within-year participation may indicate either declining interest or lesser prioritization of hunting compared to other activities.

Trends in hunter recruitment and retention reflect the need and ability of wildlife agencies to continue providing recreational, cultural, and management benefits through hunting-related programs. For example, wildlife agencies make available opportunities for hunting-related recreation and expression of hunting traditions and cultures (Brown et al. 1995). Year-to-year and within-year participation can be used to assess demand for these opportunities and to evaluate the degree to which such demand is being met by agency programs (Walsh et al. 1992, Wentz 1996). Numbers of hunters reflect the pool of strongest political support on which agencies can rely for the continuation of...
programs that provide recreational and cultural benefits associated with hunting (Kallman 1987).

Trends in hunter recruitment and retention also have implications for wildlife agencies that go far beyond receipt of recreational and cultural benefits by persons who participate in hunting. These trends affect the degree to which wildlife agencies are able to provide management benefits to all stakeholders. Agencies rely on hunters to control populations of nuisance or overabundant wildlife species (Diefenbach and Palmer 1997). Many agencies also use revenues from license sales and excise taxes on hunting equipment to fund nongame and endangered-species programs for everyone’s benefit (Kallman 1987). Thus, trends in hunter recruitment and retention indicate changes in the pool of persons on which agencies can rely for financial and harvest support.

Concerns about the possibility that pools of political, financial, and harvest support were shrinking (Applegate 1977, Applegate et al. 1984) have contributed to the development of hunter recruitment and retention programs by dozens of state agencies and partnering non-governmental agencies throughout the U.S. (Olsen 1992). Many states now have programs specifically aimed at attracting and retaining women and minority hunters because these groups typically have been underrepresented among hunters (Jackson 1988, Thomas and Peterson 1993). The goals of these programs generally are to increase hunter recruitment and retention.

Participation indicators of hunter recruitment and retention have been monitored regularly within states since at least the 1930s and nationally since the 1950s. Since 1937, the states have been required to document annually the number of persons buying hunting licenses as a criterion for distribution of federal aid funds to the states (Kallman 1987). Since 1955, the United States Fish and Wildlife Service (USFWS) has estimated every 5 years the numbers and various participation characteristics of persons who engage in the activity of hunting (licensed or not). State wildlife agencies also are required to provide the USFWS with the number of persons graduating annually from hunter-education courses in their states.

This monitoring effort has allowed agencies to follow trends in participation indicators of recruitment and retention and to assess changes in the pool of persons on whom agencies can rely for support. However, we believe the utility of this monitoring effort has been inadequate, for several reasons. First, we provide evidence that active hunters are not the only persons who associate themselves with hunting, support management efforts politically and financially, or receive recreational and cultural benefits from hunting. We also show how participation indicators may lead to erroneous interpretations about magnitude of trends in recruitment and retention and to unnecessarily negative implications. Finally, we suggest that reliance on participation indicators may de-emphasize the need to implement some of the most important components of recruitment and retention programs.

Our purposes for this paper are to: 1) describe hunter recruitment and retention trends using participation-based indicators; 2) interpret those trends with respect to agency provision of management, recreation, and cultural benefits relating to hunting; 3) suggest social–psychological
indicators of a more inclusive population of hunters; and 4) discuss hunter recruitment and retention in the context of these more inclusive indicators.

**Trends in participation indicators of hunter retention**

According to data from the national survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR), total numbers of hunters (≥16 years of age) increased 46% nationally from 1955 to 1975 (from about 11.7 million to about 17.1 million), but decreased 18% since then (to about 14.0 million, USFWS 1997). Regional trends in numbers of hunters differ substantially. For example, between 1991 and 1996, numbers of hunters increased in Pacific (9.3%) and West North Central (12.2%) regions of the country (Figure 1). Hunters decreased 16.8% in Mid-Atlantic states during the same period. Other regions experienced changes of <5%.

Analyses of other databases by Kelly (1987) also indicated a general declining trend starting in the mid-1970s. Using Nielsen Sports Market surveys, Kelly found that numbers of hunters increased about 4% during 1973–76, but decreased 4% from 1976 to 1979 and 5% from 1979 to 1983. Analysis of Simmons Market Share Surveys by Kelly showed that much of the decline in the early 1980s was accounted for by a nearly 30% decrease in numbers of young male hunters between 1979 and 1985.

Changes in total population regionally can confound interpretation of these trends. For example, despite relatively stable numbers of hunters in the Rocky Mountain region, the proportion of the total population that hunts in that region declined from 11% to 9% from 1991 to 1996 (USFWS 1997). Also, although Mid-Atlantic states experienced a dramatic decrease in numbers of hunters, the overall population in those states also dropped substantially. The proportion of hunters in the Mid-Atlantic population dropped only from 6% to 5%.

Declining trends in mean number of days hunted annually may indicate either decreasing interest or lower prioritization of hunting compared to other activities. This could portend a decrease in retention. According to the FHWAR survey, retained hunters participated about 17% fewer days annually on average during 1991 and 1996 than in the years 1975, 1980, and 1985 (USFWS 1997). Hunters spent about 13–14 days afield annually during 1955–70, increased to a plateau of 20–22 days during 1975–85, then decreased to 17–18 days in 1991–96.

Means that aggregate numbers of days afield for all types of hunting mask large decreases in within-year participation for small-game hunting. FHWAR surveys show that during 1980–96, mean number of days spent hunting big game and waterfowl increased 28% and 5%, respectively, while mean number of days spent hunting small game decreased 40% (USFWS 1997). The sharp decrease in small-game hunting effort, coupled with the decrease in hunters, could indicate sharply lower retention of small-game hunters.

**Trends in participation indicators of hunter recruitment**

The large decrease in mean number of days spent hunting small game annually is notable because new hunters usually take advantage of small-game hunting opportunities (rather than big game) as part of their introduction into hunting (Decker et al. 1986). This is due in part to greater chances of success, more shooting opportunities, and younger legal ages for small-game hunting. Because of older legal ages for big-game hunting in some states, recruitment into the youngest age classes cannot be accounted for by the increase in big-game hunters. In the absence of any evidence to suggest that opportunities to hunt small game have declined, a decrease of 40% in the mean number of days spent small-game hunting suggests that young hunters are not being recruited into hunting.

This is corroborated by examining age-class data from the FHWAR (USFWS 1997). The proportion of persons who said they went hunting aged 16–24 years decreased from 28% to 15% from 1975 to 1996. The proportion of hunters ≥34 years of age increased steadily during the same period, despite an overall decline in hunter numbers.

Mangun et al. (1996) interpreted age-class data differently by organizing 1991 FHWAR data into standardized 5-year age-classes. They found the greatest number of active hunters in the 16- to 20-year age-class, rather than older age-classes. However, they suggested this did not indicate high levels of recruitment because only 0.6% of the total population take up hunting in a given year.

Another index to recruitment, the number of graduates from hunter education courses, declined about 3% nationally during 1981–97 (USFWS, unpublished data). As with license sales, some regions of the U.S. experienced dramatic declines during that time whereas other regions experienced increases. For example, number of hunter-education graduates in Mid-Atlantic and South Atlantic states decreased 45% and 26%, respectively. Conversely, number of newly certified hunters in the West South Central and East South Central states increased 114% and 55%, respectively.

Hunting is dominated by white males, despite recent emphases on recruitment of under-represented groups (e.g., Thomas and Peterson 1993) and despite past predictions of increases in the proportion of nonwhite hunters as demographic shifts occur in the total U.S. population.
Implications of trends in participation indicators

Participation data presented above indicate declining trends in hunter recruitment and retention. These trends have important implications to agencies' needs and abilities to continue providing recreational, cultural, and management benefits through hunting programs. Declining trends also have implications for the pool of persons on whom wildlife agencies can rely for different kinds of support.

If only participation data are examined, one could conclude that the need to provide opportunities for people to receive hunting-related recreational and cultural benefits is decreasing:

1) A decreasing proportion of the population places importance on hunting as a recreational activity as indicated by trends in participants.
2) Current supply of small-game hunting opportunity provided by agencies (i.e., long seasons, adequate populations of most species) exceeds demand for that opportunity as evidenced by decreases in both year-to-year and within-year participation by small-game hunters.
3) The number of persons for whom hunting is an important cultural activity is declining.
4) Decreasing trends in the number of persons who have a vested interest in the continuation of hunting programs for recreational and cultural reasons indicate erosion of the political support base for hunting.

Providing management benefits for all stakeholders will become more difficult in the future:

1) Despite an increase in the mean number of days that big-game hunters spend afield annually, agencies must rely on a decreasing pool of persons to harvest overabundant or nuisance wildlife species.
2) Declining hunting recruitment and retention portend a decreasing financial support base for management of all wildlife species for everyone's benefit.
3) If hunters reflect the pool of strongest political support for hunting-related programs, continued support for agency programs that rely on hunting as a management tool is brought into question.

Cautions about trend data and interpretations

Interpretation of hunter recruitment and retention trends must take into account dynamic patterns of initiation, cessation, and continuation. Some former participants will participate again in the future (Applegate 1977, Decker and Brown 1982, Mangun et al. 1996). Also, some persons who never participated as youth will participate in the future as adults (Purdy and Decker 1986, Jackson and Dunn 1988).

FHWAR data show that active hunters accounted for about 7% of Americans in 1996 (USFWS 1997). However, Duda and Young (1995) found that 37% of adults in the U.S. population had hunting experience as youth (<16 years old) and 35% hunted at least 1 year after their sixteenth birthday. Analysis by Heberlein and Thomson (1991) of the 1990 General Social Survey of U.S. households revealed that 17.5% of adults (32% of males) reported “going hunting,” although not necessarily in the year of the survey. Wentz (1996) reported that 15% of Ohio youths aged 12–17 had hunting experience and an additional 34% would like to try hunting.

The number of active and inactive hunters is about equal (Enck et al. 1993, Mangun et al. 1996). Through a longitudinal study of persons who completed hunter education in New York in 1983, Purdy et al. (1989) found that only about two-thirds hunted in any given year and about 20% bought a license for a year or 2 before ceasing altogether. Not all these former participants are interested in hunting. Nonetheless, by also considering inactive hunters, the number of people with hunting experience in the U.S. is much greater than the number of license buyers or persons who go afield hunting in any given year (Kelly 1987, Mangun et al. 1996).

When active and inactive hunters are considered, the pool of persons on whom agencies rely for support can be recognized as being substantially larger than if only active hunters are considered. In addition, the pool of persons who depend on agency programs for recreational and cultural benefits relating to hunting also can be recognized as being larger than just the number of active participants. Thus, the population of hunters into which persons are recruited and in which persons are retained over the long term is not measured adequately with participation indicators alone.

Integrating social-psychological indicators

Thus far, we have discussed hunter recruitment and retention from the perspective of participation as the
defining characteristic. From this perspective, a hunter is someone who buys a license or goes afield ≥1 day with the intention of harvesting game. Potential hunters are considered “recruited” when they become legally certified to do these activities or when they actually do them for the first time. Hunters are “retained” if they continue to buy licenses or continue to go afield year after year.

Our dissatisfaction with these definitions lies partially in the question: how do you know when a person is recruited or retained? We offer possible answers based on social–psychological indicators. A person is “recruited” into the population of hunters when she/he develops a self-perception as a hunter. Someone is “retained” in the hunter population as long as he/she continues to have this perception. In addition, a person is “recruited” into the population of hunter associates (Stedman et al. 1993) when she/he identifies hunting-related benefits from personal association with hunters but does not have a self-perception as a hunter.

These redefinitions of recruitment and retention from a social–psychological perspective and the addition of the new category “hunter associate” take into account several important research insights absent from participation-based definitions. First, many persons perceive of themselves as hunters without buying a license or going afield in a given year; these persons are not accounted for in participation data even when inactive hunters are included in the hunter population. Purdy and Decker (1986) found that 25% of hunter-education graduates in New York considered themselves to be hunters even though they had not yet been legally certified to become licensed hunters. Heberlein and Thomson (1991) suggested that the discrepancy between the percentage of adults who say they “go hunting” in the General Social Survey and the percentage who “hunt” according to the FHWAR survey could be due to persons who define themselves as hunters although they do not meet participation-based criteria. These persons may purchase a hunting license at least sporadically in the future or at least be “hunter associates” and thus can be counted on by agencies for financial and political support.

Second, many persons “…who do not go afield in pursuit of game (‘nonhunters’)” associate with hunters, participate in hunting-related activities, have beliefs about hunting similar to those of hunters, and receive benefits from hunting” (Stedman and Decker 1993:2). More than one-half (57%) of persons who do not buy a hunting license in New York are hunter associates who have significant social and cultural connections to hunters and hunting but do not perceive of themselves as hunters (Stedman et al. 1993). Of these persons, 74% who personally knew hunters in ≥2 social networks participated in hunting-related activities like eating game, helping to scout for game, or visiting a hunting camp during hunting season. Although these persons may not provide direct financial support to agencies through license sales, they likely have a major impact on license sales by providing social support and apprenticeship opportunities for persons who do buy licenses (Purdy and Decker 1986).

Determining whether persons are recruited and retained as hunters can be accomplished using social–psychological indicators from the concepts of hunter identity (Enck 1996) and stage of hunting-adoption (Purdy and Decker 1986). Both concepts have measures of whether persons perceive of themselves as hunters (recruitment), and stage of hunting-adoption includes a temporal dimension that assesses whether individuals continue to have self-perceptions as hunters (retention). Indicators of recruitment and retention of hunter associates can be measured using membership in a hunting network (Stedman et al. 1993).

Redefinition using social–psychological indicators is consistent with research findings pertaining to the concepts of hunter motivations and satisfactions. Motivations pertain to the reasons persons engage in hunting behaviors (Manfredo et al. 1995). Overall satisfaction indicates the degree to which motivations are fulfilled (Manfredo et al. 1995) and is influenced greatly by hunters’ evaluations of specific sets of satisfaction components (Decker et al. 1980, Vaske et al. 1986, Hammitt et al. 1990). Persons defined as hunters using participation indicators and those who perceive themselves to be hunters (but who do not buy a license) may be motivated to engage in hunting-related activities to maintain and enrich personal relationships and to connect with nature (Purdy and Decker 1986). In addition, many of the opportunities sought by license buyers to experience important satisfaction components (e.g., sharing game meals, sharing hunting stories, scouting for game) are the same as those sought by hunters and hunter associates defined using social–psychological criteria.

Use of social–psychological indicators expands the concept of who is a member of the “hunter” population and acknowledges hunter associates as a population to watch. It also results in different trends in hunter recruitment and retention. It is possible that many persons who are being recruited into the hunter population, based on their self-perceptions as hunters (Purdy and Decker 1986, Enck et al. 1996), are undetected with participation indicators. They simply may not want to take advantage of the privileges a hunting license allows. Whether this kind of recruitment is increasing or decreasing is
unknown. Given trends in license sales, recruitment of persons into the hunter population based on their self-perceptions also may be decreasing, but not necessarily at the same rate as measured by participation variables. We simply do not know.

Retention in the hunter population of persons who have self-perceptions as hunters may be quite stable and may translate into political or financial support if interest were mobilized. Purdy et al. (1989) found that only 3% of those who previously considered themselves to be hunters in 1983 no longer held that self-perception 5 years later. Retention of hunter associates in the social world of hunting requires maintenance of their social networks with hunters (Stedman and Decker 1993). These networks probably are affected by some of the same factors that affect retention of license buyers or year-to-year participation in hunting (e.g., changes in place of residence from rural to nonrural and family–work obligations). Thus, retention of hunter associates also may be declining, but those data have not been obtained.

Reinterpretation of recruitment and retention trends and their implications

Integration of social–psychological indicators with participation indicators modifies implications of trends in hunter recruitment and retention. First, the need to provide opportunities for persons to receive recreational and cultural benefits from hunting-related programs remains strong:

1) The pool of persons who receive recreational and cultural benefits from hunting is possibly 3 times larger than the number of active hunters, when inactive hunters, persons with self-perceptions as hunters, and hunter associates also are considered.

2) A large pool of hunter associates have significant relationships with hunters and these relationships are based on shared experiences in hunting-related activities.

3) Increased benefits could be gained by facilitating or providing additional opportunities for recreation within and outside the hunting season (e.g., by legally allowing hunter associates to accompany hunters afield in states where prohibited, by facilitating opportunities for hunters to provide game in excess of what they need to others, and opportunities through which hunters can be introduced to hunter associates and other people who desire relief from nuisance wildlife).

 provision of some kinds of management benefits may remain possible into the future:

1) The number of inactive hunters (who either participate sporadically or who have permanently ceased going afield) is more than twice the number of active participants in any given year.

2) The pool of persons who perceive of themselves as hunters is larger than participation data alone indicate. The possibility exists that these persons could be motivated to provide harvest-related support by appealing to a sense of civic responsibility.

3) Focusing on participation indicators may understate the number of persons who do, or could, provide political, financial, or harvest-related support.

Future considerations

Include a broader range of indicators when assessing trends in hunter recruitment and retention. We must measure social–psychological indicators of hunter recruitment and retention in addition to participation indicators. Minimally, social–psychological indicators for stage of hunting adoption (Purdy and Decker 1986) and identity development (Enck 1996) should be built into regular monitoring efforts (e.g., FHWAR survey). Also, consider dynamic patterns of initiation, cessation, and continuation when interpreting trends. Numbers of hunter associates also should be monitored to determine changes in the entire pool of persons who benefit directly from hunting-related programs and on whom agencies can count for various kinds of support.

Adopt standardized definitions of the terms “hunters” and “hunting” as a basis for research and management. Understanding recruitment and retention trends depends on first understanding what it means to be recruited or retained as a hunter. Use of participation indicators alone seems to be inconsistent with research findings about hunters. Many persons believe they are hunters although they do not buy a license or go afield (in a particular year or ever, Purdy and Decker 1986). Many experiences that are important for hunters to be satisfied occur before or after a particular trip afield (Langenau and Peyton 1982) or outside of the hunting season (Enck and Decker 1994), outside of the time when participation indicators define them as hunters.

Past reliance on participation indicators may explain some gaps in hunter-motivations research. Such research is lacking for persons who perceive of themselves as hunters but who have not purchased a hunting license. Motivations research also is lacking for persons who do not go hunting but who provide social support or mentoring for persons interested in hunting, despite research showing that nonhunting initiators and companions can have a strong influence on whether someone decides to purchase their first hunting license or whether they consistently go afield (Purdy et al. 1989).

Concentrate more on understanding and influencing antecedents to participation and less on trying to influence participation directly. Concern about declining license sales has led to efforts to make it easier and less
expensive to buy licenses or have opportunities to go afield (Olsen 1992). However, those actions may have little influence on whether someone is recruited or retained as a license buyer or as someone who has a self-perception as a hunter (Purdy et al. 1989, Enck et al. 1996). Those actions also may have little influence on whether license buyers are interested in or capable of harvesting wildlife (Brown et al. 2000), if that is a need of agencies.

Many of the most important factors affecting hunting initiation and continuation are social and cultural, rather than regulatory or access barriers (Enck et al. 1993). Processes of initiation into and continuation of hunting usually involve social support for hunting, mentoring aimed at developing that support (not only skill development), and apprenticeship opportunities all occurring within specific social contexts (Purdy et al. 1989). Although these are difficult to provide programmatically, their absence limits success of recruitment and retention programs—even those aimed at increasing license-buying behavior or days spent afield (Enck et al. 1996).

Focusing on factors that influence development of persons’ self-perceptions as hunters (a likely antecedent to hunting participation and certainly for continued activity) could have multiple benefits. First, it can increase agencies’ chances of influencing trends proactively, rather than just reacting to them. That is, it will increase opportunities for recruitment and retention programs—even those aimed at increasing license-buying behavior or days spent afield (Enck et al. 1996).

Second, focusing on how people develop and sustain a perception of themselves as hunters will help agencies reinforce that perception among hunters and facilitate public understanding of the broader perspective of what it means to be a hunter. Emphasis on measurement and interpretation of trends in participation-based variables may unintentionally communicate to the public that hunting can be equated simply with license buying or going afield to shoot game. Purposeful measurement and discussion of social—psychological indicators may increase the chances that the meaning of the term “hunter” can be understood, especially by the roughly 50% of the population who have no social linkages with hunting (Stedman et al. 1993). Further, this approach may lead to more accurate portrayals of the cultural importance of hunting to society and enhance support for agency interest in maintaining the cultural benefits associated with hunting (Brown et al. 1995).

Literature cited


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