Wildlife and Recreationists

COEXISTENCE THROUGH MANAGEMENT AND RESEARCH

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CHAPTER 16

Hawk Mountain Sanctuary: A Case Study of Birder Visitation and Birding Economics

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Bird watching is one of the most popular forms of nonconsumptive, wildlife-associated recreation (Kellert 1985; Kerlinger 1993). The ranks of birders has grown dramatically in the past three decades with estimates ranging as high as 60 million participants in the United States (Hall and O'Leary 1989), although the number of "committed" birders is actually smaller. Although there may be as many, if not more, birders than hunters or anglers, birders and their interests are relatively unrepresented in federal and state wildlife agencies. The reason for this is that birders historically have not been considered wildlife users, nor have they shared the cost of supporting state wildlife programs. In many cases, the needs of birders and nongame birds have been regarded by wildlife agency personnel as antithetical to, or not compatible with, management of game species.

Birders tend to focus on areas where large numbers of species can be seen or where birds are abundant. Usually this is during the migration or nonbreeding season, although breeding areas can also attract large numbers of birders. These locations are often rare ecosystems and, therefore, biologically interesting. They are also centers of biodiversity and support endangered, threatened, or unusual species. Hundreds of these sites exist across North America and are well known to the birding community. These sites serve as magnets, sometimes attracting more than a hundred thousand birders annually, or many thousands during a particular season. Birders come with professional tour groups, bird clubs, or by themselves, bringing millions of dollars to the areas surrounding these birding hotspots (Kerlinger 1993).

Studies of the economic impact of birders on communities near birding

hotspots, and demographic studies of the birders who visit those areas, are becoming important conservation tools to counter arguments that wildlife refuges are an economic burden to local communities (Kerlinger 1993). It has long been known that hunters and anglers provide substantial revenue to wildlife management, but until recently we have had little information about the economic impacts of birding. Here we present results of a one-year case study of birding economics and birder demographics at Hawk Mountain Sanctuary, Pennsylvania. We were particularly interested in characterizing the birders who visited this private, nonprofit sanctuary and determining the economic impact of this user group on neighboring communities. Information from our study is being used as a management tool for preventing habitat degradation by visitors and as a public-relations tool to promote open-space conservation in the area surrounding the sanctuary.

Recreational Effects

In the early 1930s the shooting of migrating hawks was a popular activity along the ridges of Pennsylvania. In 1934, after witnessing the autumn carnage at Hawk Mountain, a group of conservationists purchased 550+ ha of the Kittatinny Ridge in eastern Pennsylvania to protect migrating hawks. Hawk Mountain Sanctuary became the first sanctuary created specifically for birds of prey. A warden was hired to patrol the ridgetop sanctuary during the hawk migration season, and the Hawk Mountain Sanctuary Association (HMSA) was chartered in 1938. Since its establishment, the HMSA has grown steadily with membership totaling 2,500 in 1954 and 4,500 in 1971. Currently, HMSA has about 15,000 members, 15 staff, and 200 volunteers. Initially, the association was unpopular among the locals, and the early history of community relations was poor. After several projects initiated by HMSA in the 1970s, the local community began to realize birds of prey were an integral part of natural ecosystems, and the Hawk Mountain Sanctuary (HMS) was an important contributor to the local economy.

Since the 1930s HMSA has been a leader in the field of hawk and owl protection. Because of the large number of hawks, and the ease with which they could be seen, HMS has become a mecca for bird watchers. Today HMS encompasses nearly 1,000 ha and stands as one of the most popular birding sites in the world. In addition, it provides educational opportunities for primary and secondary school groups, college interns, graduate students, and others. The HMS also provides quality recreational opportunities including hiking,

photography, botanizing, birding, and cross-country skiing. Trails and facilities are open year-round, and visitors use the site at all times.

To characterize the people who visit the sanctuary and determine their economic impact on the local community, we queried 1,350 people during June 1990 to May 1991. Each respondent was asked to complete a questionnaire of 25 items. The time required of each respondent was about 5 to 10 minutes, and most visitors were glad to participate. Because we were interested in the economic impact of avitourists on the communities surrounding HMS, we defined the study area as a 48-km radius centered at the sanctuary. These data were also used to compare HMS with several other popular birding areas that have been studied.

Visitation

The number of people who passed through the gates of HMS during the study year was 53,853, similar to the numbers counted in the preceding five years. Visitation is highly seasonal, with most (67.4%) coming during the hawk migration season (1 September–30 November). As many as 3,000 birders have arrived at the sanctuary on one day.

Forty-five percent of questionnaire respondents were first-time visitors to HMS, suggesting that there is increasing interest in this form of recreation. Only 23% of all visitors were members of the HMSA. A majority of our sample were residents of Pennsylvania (69%), although respondents came from more than 32 states and eight foreign countries. Respondents from New Jersey, New York, and Maryland, all contiguous states, accounted for 15% of the sample. Visitors from adjacent counties totaled 32.9% of the sample.

Demographics of Visitors

As with other studies of avitourism, birders who visited HMS were mostly male (58.8%), middle-aged (average = 38 years), well educated, and with above-average incomes. Only 6.9% of visitors were retirees and 11.8% listed themselves as students. Most visitors (59.5%) were in the 31–50-year range, but ages ranged from <10 to more than 80 years. Although the proportions of the sexes found at HMS were similar to those reported in other studies, HMS visitors were slightly younger than avitourists studied at High Island, Texas (Eubanks et al. 1993); Cape May, New Jersey (Kerlinger and Wiedner 1991); and elsewhere (Payne 1991; Wauer 1991; and Wiedner and Kerlinger 1990). Average age in these studies ranged from 44 to 54.8 years. We conclude from these results that hawk viewing attracts a wider age-class of participants.

The income of respondents was greater than the national average, with 63.2% earning more than $25,000 per year, including retirees. Nearly 16% had

incomes in excess of $50,000. HMS visitors were also highly educated. More than 62% reported at least a four-year college degree, and another 14.5% reported having at least two years of college. These results are similar to those found in the previously cited studies.

An interesting measure of disposable income is the type and price of optical equipment used by birders, and their membership in conservation/birding organizations. About 7% of visitors to HMSA owned binoculars that retail for more than $1,000 (Zeiss, Leitz/Leica, and Bausch and Lomb). Although 54.4% of respondents reported that they belonged to no conservation organizations, the average number of memberships reported by the remainder of the sample was greater than two memberships. In comparison, the average number of organizations to which active birders belonged was 3.2 (Wiedner and Kerlinger 1990), suggesting that visitors to HMS are a mix of conservationists. There was an interesting variety of organizations listed by respondents, totaling 157, several of which (e.g., National Association of Environmental Professionals, People for the Ethical Treatment of Animals) were not strictly conservation groups. These findings on binoculars and memberships indicated that birders are willing to commit resources to their pastime.

Economic Impact on Local Communities

Income to local communities as a result of birder visitation to HMS includes expenditures for lodging, food, gasoline, and income to HMS (Table 16.1). Accommodations accounted for the largest expenditure by visitors, followed closely by eating establishments. Forty-three motels, hotels, and guesthouses, along with 23 camping facilities, were listed by respondents. Visitors supported a minimum of 150 restaurants (including delis and food stores), more than 65 different lodgings (motels, campsites, and bed-and-breakfasts), and many gas stations. This means that HMS attracts people who contribute to over 200 businesses and accompanying jobs in the area.

Perhaps the most important component of the economic impact of HMS on the community is the HMSA budget. Although some HMSA members live in nearby communities, most live outside the area. Membership support through contributions and purchases in the gift shop by members and nonmembers is revenue to the community. The total budget for HMSA in 1992 was about $800,000, much of which reaches the community through staff wages and purchases, or goods and services from local vendors. Staff wages are then spent on such diverse things as property taxes, clothing, automobiles, appliances, rent, and real estate.

Thus, about $1.5 million dollars, in total, came into the communities surrounding HMS as a result of HMSA activities during the study year. An estimate of the total economic impact of HMSA on the surrounding communities

Table 16.1

Summary of Economic Impacts of Birders on the Communities Adjacent to Hawk Mountain Sanctuary, June 1990 to May 1991

Expenditure	Calculation[a]	Amount
Lodging		
Motels	13.7% × $40 per night × 1 night	$295,120
Campsites	9.2% × $15 per night × 1 night	$74,317
Other	8.7% × no estimate made	
Meals	39.8% × $5 per meal × 2.01 meals	$215,400
Gas	29.5% × $ 10 per tank	$158,870
Hawk Mountain Sanctuary Association budget		$800,000
TOTAL		$1,543,707

[a]Calculations are based on 53,853 visitors to Hawk Mountain Sanctuary Association during the study year.

is difficult. Most economists employ multipliers to determine the actual impact of expenditures on the communities involved. Standard economic multipliers range from 1.6 (i.e., Texas Department of Commerce for tourism) to greater than 2.4 (the national average). Application of these multipliers to the $1.5 million estimated as direct input, yields estimates of between $2.5 and $3.7 million per year. Because visitation at HMS increased to nearly 70,000 per year in 1992, the range of economic impact given above is conservative.

How does the magnitude of this economic impact of avitourists on the communities surrounding HMS compare with the impacts found in other studies? The numbers reported in Table 16.1 are similar to those found in studies in New Jersey, Nebraska, Ontario, and Texas (Table 16.2). At all of these sites, avitourism is a multi-million dollar industry.

Because the economic impact of birders on the communities surrounding HMSA is diffuse, many business people may not realize the magnitude of spending by avitourists in the region. Several small businesses in communities like Orwigsburg, located nearest HMS, do benefit greatly and realize that avitourists are an important source of their annual income (unpublished data). It is the motels and restaurants closest to the mountain that benefit most during the autumn migration season. This is especially true because the immediate area has few other attractions for tourists during autumn.

Avitourism at HMSA is not without negative environmental impacts. With a maximum of 3,000+ birders visiting in a given day and hundreds visiting on most weekends during autumn, traffic jams, parking shortages, crowded

Table 16.2

Comparison of Visitation and Economic Impact at Five Major Birding Sites in the United States and Canada[a]

Site	Visitors per year	Annual economic impact	Reference
Cape May, New Jersey	100,000[b]	$10 million[b]	Kerlinger and Wiedner 1991
Hawk Mountain, Pennsylvania	53,000	$2.4 million	This study
High Island, Texas	6,000+	$2.5 million	Eubanks, Kerlinger, and Payne 1993
Grande Isle, Nebraska	80,000	$40 million	Lingle 1991
Point Pelee, Ontario	56,000	$3.2 million	Hvenegaard et al. 1988

[a]Comparisons given in table reflect differing methodologies, study area sizes, seasonal differences, and differences in the application of economic multipliers. They are given to provide the reader with an idea as to the magnitude of economic benefit accrued by local communities.

[b]Numbers reflect recalculation of economic impact in 1992, four years after the original study was published, based on increased visitorship.

trails, and a crowded lookout are not unusual. To alleviate some of the problems caused by large numbers of avitourists during the migration season, a comprehensive strategy was devised. On days when too many people arrive at the sanctuary, people are asked to come back at a later time. This is to prevent trail deterioration and to ensure a high quality birding experience. In 1990 to 1991, the visitor center was enlarged and new parking areas were placed in the forest in a way that an unbroken canopy was retained. Parking is also allowed along some of the roads leading to the sanctuary, which impedes the flow of traffic. Volunteer "wardens" and well marked trails minimize destruction of the forest. With nearly 70,000 visits during 1992 (J. Brett unpublished data), automobile traffic has become the most important negative environmental impact on the area. Exhaust fumes, noise, parking, and collisions with wildlife are now the concern of many locals.

Management Options for Coexistence

The primary implication of our case study is that businesses and wildlife benefit by the development of a world class refuge. HMS is a proven attractant of a specific type of tourist who visits during a season when few other tourists are present. That tourist is a well educated, middle-aged, affluent individual who spends money locally and has little negative impact on the community. When

local communities realize that wildlife viewing areas support local economies, and at the same time, protect open space, they become supporters of such activities. In effect, the HMSA has been responsible for a shift in public opinions, both locally and nationally, in which birds of prey are now viewed as integral parts of our environment.

Although many nonprofit conservation organizations are exempt from property taxes, HMSA has been taxed at the same rate as other property owners for more than 55 years. This means that the township has not lost tax ratables (ratables are revenue units derived from taxes on property), other than what might have been gained if HMSA had been subdivided and developed as single-family dwellings. In fact, the sanctuary may have saved taxpayers by preventing single-family home development, which is now known to be a tax drain through the cost of services (schools, fire, police, and infrastructure) to residents (Real Estate Research Corporation 1974; American Farmland Trust 1986). Because of the international reputation of this sanctuary, the value of adjoining and nearby properties has increased dramatically, raising valuation of property and, therefore, taxes paid by property owners. Thus, avitourism provides significant revenues without burdening the majority of taxpayers in the region. In fact, HMSA pays nearly $8,000 per year to the township in amusement taxes, which is 10% of entrance fees paid by trail visitors. Without open-space conservation, the economic benefits provided by avitourism could not be realized.

In addition to bringing revenues to the community, HMSA provides environmental education and recreational opportunities to residents at little cost. Nearby residents are now supportive of the sanctuary and perceive it as an asset. An ecotourism study (Estes et al. 1992) done by the University of Maryland revealed that a resounding 86% of respondents to their survey were in favor of preserving Hawk Mountain, although 71.4% did not want to see more visitors. Their response was based on the increase in traffic during the hawk migration season and on the potential for environmental degradation. Most interesting was the finding that more than one-half of the respondents who owned businesses derived 10% to 25% of their revenues from Hawk Mountain visitors. This percentage translates into a significant income for these local businesses. The growth of home businesses in the area adjacent to HMS is also evident. Because of the increase of tourism, the number of prospective buyers of home-made goods has increased.

The HMSA case study is an important public-relations tool for open space conservation and could prove to be an incentive to development of ecotourism in other areas. With economic and environmental planning on a regional scale, ecotourism can provide much needed revenue, especially in

economically depressed areas (see Chapter 11). Nonprofit organizations must play a role in offsetting the loss of ratables in areas where tax exempt, nonprofit organizations are now purchasing land.

In Cape May, New Jersey, local businesses were made aware of the positive economic impact of birders following a study similar to ours (Kerlinger and Wiedner 1991) (Table 16.2). Many made membership contributions to New Jersey Audubon Society's Cape May Bird Observatory and wanted to know how their businesses could attract birder dollars. Subsequent interactions between businesses and the Cape May Bird Observatory have been financially beneficial to both, and more business owners now realize the value of open space for attracting avitourists. Studies done at sites in Texas (Eubanks et al. 1993), Nebraska (Lingle 1991), New Jersey (Kerlinger and Wiedner 1991), and Ontario (Hvenegaard et al. 1988) showed that birding attractions brought large numbers of people into these areas, and that their spending was significant. What is most interesting about these studies is that the avitourist dollars come into these communities outside the traditional tourist season (Cape May, Texas, and Ontario), or they bring revenues to communities that have no other tourist attractions (Nebraska). In Cape May, High Island (Texas), and Point Pelee (Ontario), birders come mostly during migration season, which occurs in spring or autumn when beach goers or other tourists are not numerous.

Knowledge Gaps

Hawk Mountain Sanctuary is one of hundreds of birding sites in North America. Together, these sites attract millions of people annually. For example, J. N. "Ding" Darling National Wildlife Refuge attracts nearly three-quarters of a million people per year, most of whom come to view birds (Louis Hinds pers. comm.). Other preserves like the Nature Conservancy's Ramsey Canyon Preserve in Arizona draw over 30,000 visitors annually (T. Wood pers. comm.), attracted by the diversity of hummingbirds and vagrant Mexican bird species that frequent the preserve. The difference in attendance is large, but it illustrates the variation in popularity and accessibility of birding sites. To date, case studies of avitourist demographics and birding economics similar to the HMSA study have been conducted at fewer than five sites in the world. This leaves a wide gap in our understanding of one of the most popular forms of nonconsumptive wildlife use and its corresponding user-group.

Because there is no central clearinghouse for monitoring birding sites in North America, there is no means of calculating the magnitude of this aspect of birding economics. A fertile area for research would be to trace the revenues

that come into the communities surrounding a birding hotspot. Such a study at HMS could trace where dollars go once they come into the area and how many and what types of jobs are affected.

Our study did not examine the expenses incurred by visitors on travel to and from the HMS area. Although we did ask if visitors had purchased gasoline locally, we did not inquire as to how much they spent on their round-trip to and from the sanctuary. Based on the geographic origin of most visitors, it is likely that they arrive in their own automobiles. It is unknown how many flew on commercial aircraft and rented cars to visit the sanctuary. Travel expenses incurred by birders can be substantial. Eubanks et al.(1993) found that 35% of the avitourists who visit High Island, Texas, to observe the spring migration of songbirds arrived via airplane. Most of them rented automobiles. Approximately 50% of the cost of ecotourism is related to transportation. Similarly, Wiedner and Kerlinger (1990) found that "active" birders spend about $1,850 per year on their avocation, with more than half of that for travel.

Because there are so few studies of birding economics at either publicly or privately owned refuges, research is needed at an array of birding locales. Site-specific case studies like this one should also be conducted outside of North America, wherever biodiversity attracts ecotourists. These studies will provide a more complete picture of birders and their spending, and will promote better management of the resource as well as provide insight into how birders may be transformed into a source of funding for wildlife programs that manage for biodiversity.

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