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Private Conservation Case Study

Hawk Mountain Sanctuary Association

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The creation of the Hawk Mountain Sanctuary in the Appalachian Mountains of eastern Pennsylvania has been one of the most significant private conservation success stories in to date. Prior to its existence, each autumn an army of hunters waited atop this strategically located high promontory in Pennsylvania, waiting for the south-bound Fall migration of hawks, falcons and eagles – heavy-bodied birds that soar and ride along mountain ridges on the warm air thermals and updrafts. As these birds passed Hawk Mountain, the gunners would blast the hawks out of the sky for “sport”, marksmanship, and the belief that they were doing good by killing the predators that fed on gamebirds and songbirds. Indeed, they were encouraged to kill hawks by bounties paid by government fish and game agencies.

Early conservationists’ pleas to halt the slaughter fell on deaf ears. Hawks and eagles were viewed by most as vermin to be eliminated. Receiving little positive response from sportsmen’s groups, wildlife societies or government agencies, Rosalie Edge, who had led the struggle to protect the birds, turned to private action. In 1934, she purchased the mountaintop, created the world’s first hawk sanctuary, posted it, and hired a biologist/warden to patrol and protect it and the birds. Today, over 70,000 people visit the mountain annually to watch and photograph the procession of thousands of migrating hawks and eagles. Mrs. Edge proved that even when the government is subsidizing environmental destruction, one person with a vision and a little money can affect human behavior for the better through voluntary action and the institution of private property.

Hawk Mountain

Hawk Mountain is a promontory atop the Kittatinny Ridge, the eastern-most range of the Valley-and-Ridge province of the central Appalachian Mountains, located in Berks and Schuylkill counties in eastern Pennsylvania. The combination of prevailing winds and mountain topography make it one of the superb hawkwatching spots in the world. Especially from mid-August through November, large numbers of raptors – hawks, falcons, ospreys and eagles – migrate south along the mountain ridges. Raptors from

much of northeastern North America follow the ridges, as do many other species of birds. Occasionally, there are spectacular concentrations of Broad-winged Hawks early in the season; the all-time, one day tally was 21,488 raptors, mainly Broadwings. However, the average Fall count is about 20,000 birds of 14 species.

Prior to the creation of the Sanctuary, hunters, gunners and “sportsmen” gathered on the ridgetops in the Fall to shoot the migrating hawks for sport. Over the years, untold thousands of raptors were slaughtered as they passed down the mountains of eastern Pennsylvania, and Hawk Mountain, in particular, become a favorite shooting spot. The shooting was so heavy that one man collected the spent shells for scrap brass. As early as 1900 a few local conservationists had begun to work to halt this slaughter, but birds of prey were still considered vermin or “chicken hawks” which preyed on “good” birds, and there was little support for these efforts. During World War I, and again in the 1930s as the prospects for another war in Europe loomed, in fact, these conservationist efforts were viewed as suspiciously “pro-German” because they deprived American boys of the opportunity of shooting at live targets.

By the late 1920’s, there was mounting concern over the slaughter. George M. Sutton, then the Pennsylvania State ornithologist, first drew the attention of conservationists and professional ornithologists to the issue when he published two articles in a professional journal. Richard H. Pough, an amateur ornithologist in Philadelphia, visited the Mountain in the early 1930s, and began to spread the story of the raptors’ plight to a broader conservation and birdwatching audience.

Mrs. Edge’s Protection Efforts

The founding spirit behind the creation of the Sanctuary, however, was Mrs. Rosalie Edge, born in 1877. She was a relative of Charles Dickens and James McNeill Whistler, a leading suffragette, and one of the nation’s first prominent conservationists. She conducted successful campaigns to expand Yosemite National Park and to create Olympic National Park and Kings Canyon National Park.

Rosalie Edge became an avid birdwatcher in the New York City area where she became acquainted with the noted zoologist Willard Gibbs Van Name and the staff of the American Museum of Natural History. She soon came to share their concern about the rapid loss of birdlife to “sportsmen” and market hunters, and became especially concerned about vanishing species and the number of species that had recently become extinct. She assailed the bird protection organizations of that time for not doing enough. In 1929, she formed the Emergency Conservation Committee and began an active campaign criticizing the “conservation establishment,” including the National Association of Audubon Societies, the U.S. Biological Survey, and state game departments, as being too closely associated with the hunting establishment, sportsmen and ammunition manufacturers. She argued that these organizations were mainly concerned with the plight of game species: waterfowl, gamebirds and shorebirds. She

maintained that with a few exceptions, notably the spectacular wading birds such as egrets and songbirds, they were relatively indifferent to the fate of other species.

Richard Pough and his friend Henry H. Collins, Jr., first visited Hawk Mountain and witnessed the slaughter in the Fall of 1932, and Collins presented a paper on the situation to the Hawk and Owl Society, an affiliate of the National Association of Audubon Societies (NAAS). In August 1933, the Emergency Conservation Committee met with the NAAS, and Mrs. Edge urged Audubon to purchase Hawk Mountain to halt the slaughter. In October, Pough and Collins brought the issue up before a joint meeting of the NAAS, the Hawk and Owl Society, and the Linnaean Society in New York City, and Audubon was again urged to purchase the area. Mrs. Edge and others thought Audubon would take action.

In June of 1934, Rosalie Edge contacted Richard Pough to find out what the NAAS had done. It had done nothing. Mrs. Edge then determined to take immediate action herself to see that not one more Fall slaughter took place. She asked Pough to meet her at the mountain the following Sunday and to bring along a local real estate agent. She was informed that 1,398 acres were available for purchase at \$2.50 an acre. She leased the area for one year for \$500, which she borrowed from Willard Van Name (later forgiven), and obtained an option to purchase the property for \$3,500.

In August, Mrs. Edge asked a young naturalist in Massachusetts, Maurice Broun, to move to Hawk Mountain to become its first warden and to post, patrol, and guard the sanctuary, but to keep the information confidential in order to prevent the hawk shooters and the NAAS from learning about it. Broun accepted and arrived for duty on September 10, 1934. He began posting the property the following day, and Mrs. Edge's hawk conservation efforts were underway. As Mrs. Edge wrote to Broun: "There has never been such a thing as a Hawk Sanctuary – as far as I know – and I believe there is no other such place for the observation of hawks as this mountain." Broun viewed the job as a temporary assignment and refused to accept a salary in 1934. He stayed on until 1966 as the first curator.

Following this initial success, the rift between Rosalie Edge and the Audubon Association widened, as she became determined to raise the money for the purchase of Hawk Mountain and to manage the Sanctuary with complete independence from the Audubon Association or any organization associated with it. In October 1934, she stated her concerns to the Hawk and Owl Society:

"The indifference of the Audubon Association to hawk protection, the fact that in certain of its publications it recommends the pole-trap and that it uses steel-traps on its chief sanctuary; that it believes in the 'control' of many valuable species and in general urges the protection only of the 'birds of lawn and garden' makes it undesirable that the Audubon Association shall have a controlling voice in the policies that shall regulate

Over the following year, as Mrs. Edge rushed to raise the money to meet the deadline on her purchase option, the fight to prevent control by Audubon grew bitter, and many friendships were strained. But finally, in December 1935, she raised the last of the \$3,500, and following two years of land title clearances, the Hawk Mountain Sanctuary Association was incorporated in 1938 to hold and manage Hawk Mountain.

With the Sanctuary secure, Mrs. Edge and her conservation associates had taken the first steps to protect the nation's birds of prey. The first year was largely spent in posting and patrolling the Sanctuary. By the second year, birdwatchers and naturalists began to arrive, and the sport of hawkwatching and hawkcounting began. The maximum number of visitors on one day in 1935 was 193. In 1936, it reached 540. However, through the first few decades, there were seldom more than a hundred people gathered on the lookouts. Today, daily crowds sometimes exceed 3,000 as they come to the mountain during Fall migration to view the spectacular hawk flights. In a typical year, visitors will come from about 44 states and 25 foreign countries. Detailed counts of the hawk flights have been maintained from the first Fall, with the exception of three years during World War II.

Changing Public Attitudes

One of the major conservation efforts of the Hawk Mountain Association was through educational programs to change public attitudes toward birds of prey and to obtain legislative protection for all raptors. Prior to the creation of the Sanctuary, most raptors were considered pests and vermin. Many state governments and state game associations encouraged the shooting of hawks in order to protect gamebirds and poultry. Very few species were protected. As early as 1885, the Commonwealth of Pennsylvania had passed a bounty of 50 cents each on all hawks, owls, weasels and minks. Known as the "Scalp Act", it paid out \$90,000 on 128,571 "predators" in the eighteen months before it was repealed.² However, as late as 1934 it was not only legal to shoot almost any species of hawk in Pennsylvania, but there was also a state bounty on the Goshawk, the largest of the three accipiters or "bird hawks." The large and aggressive Goshawk's prey included grouse, hares, rabbits and squirrels, and when Fall migration brought increased numbers into winter grounds around farms, free range and unguarded poultry were easy pickings. In place since 1929, the Goshawk bounty was \$5.00 per bird – a significant amount of money in those days and especially in the following Depression years. Because the vast majority of the gunners could seldom tell one hawk from another (even today country folk refer to a wide number of raptors as "chicken hawks"), this certainly encouraged wide-scale slaughter.

At the peak of the 1885 bounty period, Dr. C. Hart Merriam, chief of the U.S. Biological Survey, noted that Pennsylvania paid \$90,000 in bounties for hawks that may have killed \$1,875 worth of chickens.³ While a few chickens may have been saved, his calculations also estimated that farmers lost nearly \$4 million in grain crops because of increased

rodent populations resulting from the decreased number of hawks. Merriam concluded, "In other words, the State has thrown away \$2,105 for every dollar saved!"⁴ While these early cost-benefit estimates were certainly crude and unreliable, they did begin to make the argument for the beneficial role and economic importance of raptors.

The Hawk Mountain Sanctuary Association and other conservationists continued to work for the protection of the state's raptors over the years. In 1937 a law was passed protecting all hawks except accipiters, although it was not enforced. In 1951 the state ended the bounty on Goshawks. In 1957 Pennsylvania passed a law protecting all hawks during Fall migration in the northeastern part of the state, but it was not until 1970 that the state gave complete year-round protection to all hawks, eagles and owls, except the Great Horned Owl. By then, the "environmental era" was in full swing, and finally, in 1972, the federal government extended full protection to all birds of prey in the United States under the Migratory Bird Treaty Act.

The Hawk Mountain Sanctuary Environment

The Sanctuary preserves a 2,380-acre block of unbroken second growth oak-maple mixed-deciduous forest in the Appalachian Mountains. The dominant species are Red Oak, Chestnut Oak, Red Maple, Sassafras, and Black Gum. Eastern Hemlock grows in some of the cool ravines. There are about 40 species of trees. There are impressive thickets of Mountain Laurel and rhododendron, among the two dozen or so shrubs. Ninety species of flowering plants grow on the mountain and a showy variety of wildflowers carpet the forest floor in the Spring and more open areas in the summer. And 33 species of ferns and their allies have been found.

The forest is home to such resident wildlife species as Ruffed Grouse, Wild Turkey, Great Horned Owl, Pileated Woodpecker, White-tailed Deer, and Red and Grey fox. Thirty-three species of mammals have been documented on the mountain, including two newly discovered species following the advent of a comprehensive biological survey of all the biota and habitats on Hawk Mountain, initiated in 1996. Springtime brings the return of a host of Neotropical migrant songbirds from their winter grounds in Central and South America. Included among them are some of the most colorful species and most accomplished songsters in North America, as well as some of the plainest species and some with the most simple bi-syllabic "songs". These include such species as Scarlet Tanager, Rose-breasted Grosbeak, many warblers and vireos, and a number of flycatchers and thrushes. Annual breeding surveys are conducted on these species. Over 230 species of birds have been counted over the years. A number of species of butterflies occur on the property and are the subject of ongoing studies as well as an annual Fourth of July butterfly count, aimed at tallying all species and all the individuals of each species that can be located in the area. Herpetology is also an important activity, with studies of the reptiles and amphibians, with special emphasis on the salamanders. Thirty-three species of herps have been tallied, including a number of uncommon species at the limits of their ranges.

Hawk Mountain, however, will always be especially noted and internationally renowned for its autumn migration of birds of prey – raptors – as well as a number of diurnal migrant songbirds including the Blue Jay, the tiny Ruby-throated Hummingbird, Chimney Swift, Cedar Waxwing, Tree Swallow, American Robin, Common Crow, and a few other species. There is also an obvious movement of substantial numbers of Monarch butterflies, drifting along the ridges from the Northeast on their seemingly Sisyphean journey to their winter grounds in the groves of coniferous forests in the mountains near Mexico City.

A marked trail, three-quarters of a mile long, leads to various observation points and to the popular North Lookout, which at an elevation of 1,521 feet, rises 1,000 feet above the Little Schuylkill River. The Sanctuary is now a Registered Natural Landmark and the Appalachian Trail runs adjacent to the property. (In 1982, 100 acres were sold to the federal government, containing that portion of their property crossed by the trail.)

The Hawk Mountain Sanctuary Association

The Hawk Mountain Sanctuary Association is a private, member-supported, nonprofit, tax-exempt organization. The Association was incorporated in 1938 to maintain Hawk Mountain Sanctuary, which had been established in 1934 to foster the conservation of birds of prey, as well as to create better understanding of the natural environment. Hawk Mountain Sanctuary will celebrate its 65th anniversary in 1999.

There are eight membership categories with annual dues beginning at \$25 for seniors and full-time students, \$30 for individuals and \$35 for families. Contributing memberships and sponsor levels beginning at \$50, \$100, \$250, \$500 and \$1,000 entitles members to use of special campgrounds and trail shelters, listing in the Annual Report, guest passes, exclusive lapel pins, invitations to special events and copies of special publications. (Substantial portions of dues and all contributions are tax deductible.) Current membership is about 10,000, mainly individuals and families, with about 15 percent made up of corporate sponsors and patrons. Members receive the Association's semi-annual magazine *Hawk Mountain News* and other special communications, invitations to nature classes and lectures, discounted rates for educational and most special events, free admission to all Sanctuary trails and lookouts, and discounts at the Sanctuary bookstore.

The Association's annual budget in 1998 was \$1.125 million. In 1985 it was approximately \$300,000. In 1975 it was \$85,000. The increased budgets of recent years are largely the result of a growing membership and increasing private contributions, bequests and foundation grants.⁵ The Association maintains an invested reserve fund of more than \$2.5 million, mostly from large bequests and special fund-raising drives. The investment income is used to help support regular operations; the principal may be used for major capital purchases and projects. In 1984 a land purchase of an additional 185 acres was made to protect the core of the Sanctuary.

In 1991 a special fund-raising project brought in \$750,000 to expand and make additions to the Visitor Center complex, adding a museum-exhibits gallery on birds of prey, an expanded bookstore and additional staff offices. This expanded complex, and especially the gallery, has helped make Hawk Mountain much more of a year-round center, with attractions and activities for the eight months that the hawks aren't flying south, for indoor activities during inclement weather, and for beginners or people who have a short attention span for watching hawks fly by. Another special fund-raising effort brought in \$250,000 to complete *Hawks Aloft Worldwide*, a ten-year project begun in 1988 to prepare a world atlas of raptor migration and to identify the major raptor migration watch sites around the world, with data on the various species and numbers of birds passing those sites. The *World Atlas of Raptor Migration* will be published in 1999 by Hawk Mountain Sanctuary and BirdLife International.

The Hawk Mountain Sanctuary receives over 70,000 visitors per year. Entrance is free to members; trail fees for non-members are \$4 for adults (\$6 on weekends), \$3 for seniors (\$4 on weekends), \$2 for children ages 6-12 (\$3 on weekends), and children under 6 are admitted free. It is open 365 days a year. The visitor center is open from 8 a.m. to 5 p.m. during the Fall migration and from 9 to 5 the rest of the year. The trails to the lookouts are open from dawn to dusk throughout the year.

Over the past half century, the Hawk Mountain Sanctuary Association has grown from a small unpopular effort to stop the slaughter of "predatory" birds on the mountains of Pennsylvania, into an internationally known, year-round, wide-ranging conservation, education and research center – while still continuing to maintain, expand and analyze the all important hawk migration data. From a staff consisting of one volunteer warden, it has grown to include thirteen full-time and five part-time employees, plus ten interns each year, selected from the United States and foreign countries, with half conducting their research during the Spring session, and half in the Fall, and a cadre of some 200 seasonal volunteers, who do everything from collecting gate receipts to assisting in bookkeeping and accounting, data processing, sales and secretarial work.

Workshop and Seminars

The Hawk Mountain Visitors Center has interpretive educational displays, including raptors species and art exhibits, a bookstore, and an education center which is used for classes, meetings and conferences. There is a regular Fall lecture series as well as additional education programs, workshops and seminars. Special programs have been developed for visiting school children who number several thousand annually.

In recent years, Hawk Mountain has undertaken a national effort to provide college students, naturalists, and the general public with a better understanding of the role and importance of raptors in the ecosystem and the consequent need for conservation programs. In 1975, a program was started for undergraduate and graduate students

offering internships accredited by Cedar Coast College in Allentown, Pennsylvania. These include participation in the Sanctuary's educational and sanctuary management programs, as well as a wide range of independent studies in conservation and research. More recently, in affiliation with local colleges, Hawk Mountain has established an outdoor classroom, offering full college credit for courses in ecology, environmental studies, botany and ornithology, with most courses held at the Sanctuary and some involving field excursions to other areas. These courses are especially popular with school teachers in need of in-service training credits.

Other recent Association activities include: trips combining conservation education and field studies of birds of prey to major raptor observation areas in this country and abroad. Past years' trips have included the Birds of Prey Natural Area along the Snake River in Idaho and Eilat, Israel. Currently there is an annual trip to the River of Raptors watch site in the town of Cardel, Veracruz, Mexico. This is the most numerically significant hawk watch site in the world, with over 5 million raptors passing the site each autumn. Hawk Mountain also serves as a national repository for hawk migration data. In 1983, Hawk Mountain cooperated with the California Condor Recovery Program to develop more effective public education and awareness programs about condors. Thus, Hawk Mountain is helping generate the vital support needed from local ranchers, farmers and landowners to carry out this important national effort to preserve one of the nation's most endangered species.

Raptor Research

Prior to the accomplishments and proselytizing of the Hawk Mountain Sanctuary Association, there had been very little scientific or popular interest in raptors or knowledge about their ecology, population sizes, and migrations. However, raptor biologists have since become an important wing of the wildlife conservation community, and there are now numerous private organizations dedicated to the conservation, protection, restoration and rehabilitation of raptors. The Raptor Research Foundation, Inc., for example, was created in 1966 by raptor specialists to disseminate information and promote a better understanding and appreciation of the value of birds of prey. There are raptor organizations in most European countries, the former Soviet Union, and Israel, and the International Council for Bird Preservation has a World Working Group on Birds of Prey.

The Hawk Migration Association of North America (HMANA) was founded in 1974 to advance the knowledge of raptor migration across the continent and to monitor raptor populations as an indicator of a sound environment. It monitors migration counts at over a hundred hawkwatching sites throughout the United States and Canada. HMANA helps foster and establish new watch sites and has identified hundreds of other potential watch sites. It has prepared and distributed standardized hawk count forms and procedures in order to help facilitate a national data base. This organization and Hawk Mountain have begun to computerize the growing data from hawk counts in order to create a data base to

determine such things as long-term population trends. The nearly 65 years of consistent, systematic, daily, season-long records from Hawk Mountain are a wealth of research information. The Hawk Mountain records are especially important because it is the only data spanning the years before, during, and after the widespread use of DDT.

In 1984 Hawk Mountain Sanctuary celebrated its 50th anniversary with a Golden Anniversary Week, October 8-14, bringing together leading raptor specialists, ornithologists, scientists and naturalists from across the country and many foreign nations to honor the achievements of Rosalie Edge and her Association. A part of the program was an international symposium on “Raptor Conservation in the next 50 Years.” Coincident with the program, the federal government designated the week “National Birds of Prey Conservation Week,” and there were many educational programs conducted in various parts of the country. This was a fitting tribute to the vision and foresight of Mrs. Rosalie Edge and her belief in “the interdependence of all living

The efforts of Mrs. Edge and her associates to protect birds of prey contributed to a revolution in the way that conservationists and naturalists view nature. These efforts also helped to create the important insight that as predators at the top of complex food chains, raptors are indicators of environmental quality and their populations reflect environmental conditions and changes. Information gathered from raptor specialists, hawkwatchers and counters led to the awareness in the early 1960s of the plight of, and rapid decline of, some species of raptors suffering from pesticide contamination and helped create a national consensus around environmental protection. Equally important, and more encouraging, have been the hawkcounting data of the past decade, documenting a nearly complete recovery of these formerly declining species – a sign that we have begun to see an improvement in important aspects of environmental quality.

Conclusions

The history of the Hawk Mountain Sanctuary offers a striking example of the role of private initiative in achieving major accomplishments in wildlife conservation. The perseverance and single-mindedness of a very small group of concerned individuals enabled the pioneer organization to spawn national and international efforts to educate the public about the ecological importance of birds of prey, and to further efforts toward their conservation, including tireless work to obtain the passage of legislation to protect these important species.

Rosalie Edge was often difficult to work with and was an irritant to many leading conservationists of her day. But she persisted in her belief that it was a fallacy to carry out piecemeal conservation or that there were “good” birds and “bad” birds, and she stuck to her principle to conserve nature whole. Ten years after her death in 1962, there was finally complete federal protection of all birds of prey. The sport of raptor shooting had largely vanished and been replaced with the sport of hawkwatching and

hawkcounting. The shotgun had given way to binoculars. Now, across the country, and increasingly in many spots throughout the world, professional and amateur ornithologists, naturalists and nature lovers gather to view and document the passage of raptors at key Spring and Fall migration concentration sites.

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This case study was written by Robert J. Smith, senior environmental scholar at the Competitive Enterprise Institute and the Center for Private Conservation.

Much of this case study is based upon the author's early visits to Hawk Mountain in the mid-1960's when he lived on the North Jersey Shore and served as president of the Monmouth County Nature Club/Audubon Society. Robert Hughes, a good friend and fellow birder with whom the author traveled widely in pursuit of birds, first took the author to Hawk Mountain. He served as conservation chairman of the Monmouth County Audubon as well as being national conservation chairman for the Sierra Club. Thanks also goes to Fred Wetzel, the exceptional artist and bird painter and former naturalist at Hawk Mountain, for his hospitality and insights into the world of raptors. Special thanks goes to a valued friend, Richard Thorsell, former director of conservation for the Edison Electric Institute, a noted New Jersey birder and raptor enthusiast, who spent much of his career involved in private conservation of rare birds and plants, raptors in general and wildlife habitat and wetlands. Thorsell has valuable personal experience with Hawk Mountain and other early hawk shooting and watching sites and has worked extensively to assist raptor preservation and education programs. His work has included finding solutions to the one-time problem of raptor electrocution on transmission lines in the West, finding support for the captive breeding and reintroduction programs of the Peregrine Fund and the World Center for Birds of Prey, as well as for the Hawk Mountain Sanctuary Association and the Raptor Research Foundation. Thanks also goes to Andrew M. Thompson, vice president of Bird Watcher's Digest and a Hawk Mountain board member and to Hawk Mountain's director of development, Nancy J. Keeler, and director of research and education, Keith L. Bildstein, for valuable assistance and advice.

Created in 1995, the Center for Private Conservation researches, documents and promotes the public benefits of private conservation and private stewardship. The Center for Private Conservation is supported by the William H. Donner Foundation.

ENDNOTES

¹ James J. Brett, "American Conservation's Glorious Joan of Arc" *Hawk Mountain News* 50th Anniversary Issue, No. 62, 1984, p.11.

² Michael Harwood, *The View from Hawk Mountain*, (New York: Charles Scribner's Sons, 1973), pp. 45-46.

³ Harwood, 1973.

⁴ Harwood, 1973.

⁵ Hawk Mountain's budget is derived mainly from memberships and earned income, nonmember admissions and bookstore and giftshop sales, 55 percent; foundation grants and individual gifts, 20 percent; government grants for specific biological research and educational projects, 17 percent; and endowment income, 8 percent. The Sanctuary receives very little corporate support.