

Isle Royale National Park: Balancing Human and Natural History in a Maritime Park

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Introduction

BETWEEN FALL 2006 AND SUMMER 2010, the author researched and wrote a historic context for the National Park Service intended to provide a framework for assessing the significance of surviving cultural resources on Isle Royale National Park, located in the northwest corner of Lake Superior (Figure 1).¹ Isle Royale, like many other units in the National Park Service's inventory, experienced considerable and extended human impact before becoming a national park. At the same time, Isle Royale's public story emerged as a single-theme, wilderness narrative. That narrative supported a management plan that stripped away much of the island's material culture in favor of re-establishing an "actual" wilderness that had not existed for a long time. Assessing the significance of cultural resources on Isle Royale turned on the historical meaning of that place, especially issues of wildness and wilderness contrasted with the long history of human use and development.

Even though moose and wolves are "exotic species" on Isle Royale, they have emerged as iconic symbols of wilderness, playing important roles in defining the modern meaning of that place. Moose experienced sudden introduction in about 1912; rapid population growth; catastrophic crash; and an uneasy equilibrium with the island even after wolves arrived in the late 1940s. The history of moose on Isle Royale raises several key questions: What is "natural" on Isle Royale? Historically what has constituted ecological integrity? Where are the lines between wild and not wild; between natural and not natural? How do the answers to these questions relate to defining, restoring, protecting, and preserving ecological integrity on the island? How can the answers to those questions enhance understanding of the interplay between natural and human history on Isle Royale?



On August 11, 1998, *The Detroit News* published an article titled "The Campaign to Preserve Isle Royale," which summarized the founding of Isle Royale National Park and the piv-

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Figure 1. Location of Isle Royale National Park.

otal role played by Albert Stoll, a conservation columnist for the *News*, in the establishment of the park.² Stoll was one of the key players in creating both the public constituency and the political will that resulted in Congress passing legislation early in 1931 that designated Isle Royale as a national park. The Crampton–Vandenberg Act authorized the secretary of the interior to develop a new national park. Issues related to private land claims proved thorny, and the legacy of the ways in which the National Park Service settled and administered those claims remains a major challenge associated with managing Isle Royale in the present. By April 3, 1940, the National Park Service had acquired a sufficient amount of private land and officially declared establishment of Isle Royale as a national park. Given the crisis of World War II, dedication took place August 27, 1946.³

The author of the August 1998 article in *The Detroit News* led with a description of the island and a historical summary of the threats that prompted Stoll to become interested in saving Isle Royale:

Isolated by miles of water, the islands remained virtually untouched in the 300 years since French explorer Etienne Anto [sic] Brule stumbled across them in the early seventeenth century.

But by 1920, virtually all of Michigan’s native white pine forests had been cut down, and copper and iron mines dotted much of the Upper Peninsula. The islands—particularly the 210-square-mile main island of Isle Royale—were attracting lumber and mining companies hungry for new resources to tap.⁴

These few lines draw together and repeat a common blend of fact and myth that surrounds the history of Isle Royale. It is absolutely true that the rapid and wasteful harvest of the pine forests of the Great Lakes states caught the attention of many Americans and helped persuade them that natural resources were not without limit and that active conservation and even government protection was necessary to save what was left. Likewise, copper and iron mines “dotted much of the Upper Peninsula.”

During the first third of the 20th century actual or potential resource exploitation presented a threat to the qualities that recreationists, outdoor enthusiasts, and wilderness advocates prized about Isle Royale. In the 1920s, summer cabins, several hotels, and numerous fishing camps dotted coastal locations on Isle Royale, but most of the land on the island was owned by a variety of mining companies. In 1922, summer residents of Isle Royale found out that the Island Copper Company, the largest property holder on the island, planned to sell 65,000 acres to the Minnesota Forest Products Company, which intended to begin large-scale cutting of pulp wood on Isle Royale. Summer residents organized themselves into the Citizens Committee of Isle Royale to oppose such threats. The Citizens Committee dispatched a request that the island be designated a state game and timber reserve to John Baird, Director of the Michigan Conservation Department. Baird forwarded their petition to Albert Stoll, outdoor editor of the *Detroit News*. Stoll visited Isle Royale in September 1921 and talked to summer residents about the island’s potential as a state park.⁵ On August 24, 1923, the Citizen’s Committee of Isle Royale unanimously adopted the following resolution:

Resolved, That the members of the Citizens’ Committee of Isle Royale, collectively and individually, make every effort to have Isle Royale controlled by the National Government as a ‘forest preserve’ and thus be maintained in the condition that nature has left it.⁶

Making common cause with Albert Stoll gained the Citizens Committee an influential advocate and spokesperson, but in the process the committee lost control of the movement to save “their” island from development and exploitation. They also lost control of the opportunity to define and shape the narrative about the meaning of Isle Royale. By 1923 Stoll was actively boosting Isle Royale as a national park, and working with Michigan Congressman Louis C. Crampton, chair of a House subcommittee that partially controlled the budget of the National Park Service. Crampton helped bring Stoll and his plan to the attention of Stephen Mather, first director of the National Park Service, who was already interested in expanding the national park system, especially in the eastern half of the United States. In 1924, Stoll organized a tour of Isle Royale that brought key people to the island, including Mather, Secretary of the Interior Hubert Work, and Sierra Club President Francis Farquhar. After his trip to Isle Royale, Director Mather became a believer, and he used his influence to proselytize among conservation groups, including the Izaak Walton League, to support the idea of a national park on Isle Royale.⁷ Stoll and Mather, Work and Farquhar became important players not only in persuading Congress to authorize creation of Isle Royale National Park but also in defining the public story of Isle Royale as a single-theme narrative emphasizing wilderness.

The essence of Isle Royale is its maritime location, where water, land, and sky overlain by physical isolation have combined to create a uniqueness of place. Even in the early 21st century, Isle Royale is hard to reach, which means fewer visitors than other national parks or lakeshores on the Great Lakes. Travelers to Isle Royale must leave the relative safety of the mainland and cross miles of open water on Lake Superior. They reach not a single island but a series of parallel ridges and atolls rising high enough above the lake to support plant and animal life—but still intimately bound to Lake Superior. Indeed, much of the total acreage embraced by the park's boundaries is water. Close inshore, a treacherous admixture of deep water close by rock reefs and fluctuating lake levels challenges the skills of boaters. On the island, hikers leave behind the technological security blanket of modern life to wander in a place where wolves bring down moose, where cell phones do not work, and where, even under optimum conditions, emergency medical evacuation can be hours away. In many ways, the 19th-century Romantic term “sublime” captures the feel of Isle Royale—a combination of spectacular natural beauty layered with a tinge of risk and danger; a blend of peace and tranquility set against the knowledge that nature in that place is beyond human control.

While Isle Royale was certainly “isolated by miles of water,” a significant chapter in the story of the island is one of extensive human modification. By the 1920s, as the movement to protect Isle Royale germinated and grew, the island itself was far from an undisturbed wilderness. There are places on Isle Royale that have seen on-again, off-again human occupation for thousands of years.⁸ In the prehistoric period, Isle Royale was likely used by multiple groups of Native Americans. Early people mined copper, hunted, fished, and gathered on Isle Royale. They canoed back to the mainland with copper in the shape of rectangular bars, awls, beads, and hooks. Timothy Cochrane notes in *Minong: The Good Place* that these ancient peoples used Isle Royale frequently and “traveled throughout the Island, living in many locations that are campgrounds today.”⁹ Archaeological evidence indicates that Isle Royale may contain the most important identified concentration of prehistoric mining features in the basin of Lake Superior.¹⁰ By the “dawn” of the historic period, the Ojibwe were the only Native Americans still using Isle Royale. Following arrival of Americans in increasing numbers, the high point of Ojibwe presence on Isle Royale came in 1850 during a brief commercial fishing boom, which ended with the Panic of 1857. Thereafter, the Ojibwe experienced declining association with Isle Royale, which ended in the early 20th century.¹¹

Europeans and Americans sought to profit by extracting commodities from the island and its surrounding waters. Nineteenth-century copper miners came and went three times (1843–1855, 1873–1881, and 1889–1893), pushed by a growing demand for the metal in an industrializing nation. Each wave of copper mining produced considerable development, population growth, and environmental modification.¹² Commercial fishing, which the American Fur Company began on Isle Royale in 1837, waxed and waned until the late 19th century. Thereafter, fishing began a period of growth and sustained production that lasted into the 1950s, when the commercial fishery in the west end of Lake Superior succumbed to the invasion of lampreys.¹³ Fishermen sold catches in expanding urban markets on the mainland, first salted in wooden barrels and then fresh-packed in ice for transport in refrigerated cars on steel rails that literally tied the nation together. Many of the fishermen were Scandinavian

immigrants who joined the great migration from Europe to the United States. By the late 1920s, as the movement to protect Isle Royale gathered momentum, around 75 families, representing over 200 people, were fishing commercially on Isle Royale.¹⁴

Significant timber removal took place coincident with copper mining on Isle Royale, and by the 20th century, lumbering shifted to the harvesting of pulp wood. A black and white photograph taken in 1936 near Siskiwit Bay on the south shore of Isle Royale illustrates the impact of harvesting timber for pulp. The hand-written label proclaims: “18,000 Cords Pulp Wood 1 Mile Long,” and the picture shows row after row after row of stacked pulp logs. While it is not possible to verify either the 18,000 cords or the mile of logs, the visual impact of all of that pulp wood makes a strong statement.¹⁵ The label, “18,000 Cords of Pulp Wood 1 Mile Long,” offers a boast and a declaration of accomplishment; it stands in powerful counterpoint to the attitudes and goals of people seeking to preserve the Island.

Resorts and recreational cabins and camps began to appear on Isle Royale in the 1890s. During the first half of the 20th century, there were three clusters of “settlement” on Isle Royale: Rock Harbor/Tobin Harbor on the eastern end, Belle Isle–Amygdaloid Channel in the northeastern quadrant of the archipelago, and Washington Harbor on the far western end. Each of these three population centers included resorts, active fisheries, and the homes of summer residents, which actually and symbolically drew these trends together into a common history of Isle Royale.¹⁶

In his classic volume, *The Wolves of Isle Royale*, Rolf Peterson describes a long-term study of the teeth of moose and wolves designed in part to uncover the environmental parameters of their symbiotic existence on Isle Royale. Peterson’s description of the findings as they relate to wolf teeth connect the biology of Isle Royale with two worldwide patterns of development: the burning of fossil fuels and the radioactive fallout associated with the above-ground testing of nuclear weapons prior to the Nuclear Test Ban Treaty approved by the United States and the Soviet Union in 1963. Peterson concluded:

In the island’s wilderness, which is as pristine as any in the continental United States, wolves have inadvertently recorded [in their teeth] the two largest atmospheric perturbations generated by modern humans—the radioactive fallout from thermonuclear weapons and the accelerating rise in CO² from the combustion of fossil fuels. For any thinking human, this should underscore the scale of the modern human enterprise, and should hint at the magnitude of the challenge of maintaining natural processes in our national parks.¹⁷

Peterson’s observation drives home the fact that the idea of wilderness plays such a central role in Isle Royale’s narrative that it has become almost synonymous with the meaning of that place. It would be difficult, if not impossible, to assess the significance of the cultural resources on Isle Royale or to plan for their preservation and continuing use without carefully defining the historical relationship between wildness and cultural resources on the island.



In the 1960s and 1970s, with the advent of Mission 66, the ecology-based environmental movement, and passage of the federal Wilderness Act (1964), the National Environmental

Policy Act (1969) and the Eastern Wilderness Act (1975), the mission and management of Isle Royale National Park continued to evolve. President Gerald Ford signed legislation designating nearly all of Isle Royale as wilderness on October 20, 1976. Public Law 94-567 provided wilderness protection to 131,000 acres, which, along with small additions in subsequent years placed, about 99% percent of the land area of Isle Royale under wilderness designation.¹⁸ President Ford's signature represented a victory for environmentalists and wilderness advocates who had waged a decade-long struggle with the National Park Service over the location and extent of wilderness on the island. One of the leaders of the movement to require the Park Service to expand wilderness on Isle Royale was Doug Scott, who had visited the Island on a backpacking trip in 1966. Writing many years later, Scott remembered, "I, a kid from the Pacific Northwest, had been in forestry school in Ann Arbor, feeling sorry for myself for being so far from the Oregon Cascades. Yet, having trekked around the grand wilderness areas of Oregon and Washington, I was not prepared for the world-class wilderness environment I discovered on Isle Royale."¹⁹

Historical patterns of use, development, and management on Isle Royale argue strongly that the island is not presently a wilderness as defined by the Wilderness Act of 1964. Public Law 94-567 signed October 20, 1976, was an omnibus-type wilderness bill, which included Isle Royale. Section 6 states that "The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act." Public Law 88-577 (16 USC 1131-1136), passed by the 88th Congress, Second Session, September 3, 1964, defines wilderness in the following terms:

(c) A wilderness . . . is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain . . . an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable. . . .²⁰

Isle Royale clearly possesses wild qualities, although the wildest area in the vicinity of Isle Royale may be the surrounding waters of Lake Superior, with cold depths, shallow reefs, and formidable rocky coasts—beautiful, unpredictable, treacherous, and potentially deadly. Wilderness designation on Isle Royale is more a matter of managing land and resources to create a wilderness than protecting and preserving a place "where the earth and its community of life are untrammelled by man"; where land retains "its primeval character and influence, without permanent improvements or human habitation," and, a place "affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." In the decades since the dedication of Isle Royale National Park in 1946, managers put considerable effort into creating wilderness, often by "erasing" cultural resources or allowing them to fall into ruin and disappear. The practice and policy of "erasure" and "moldering ruins" resulted in significant reduction in the stock of cultural resources in the Park. More recently, Isle Royale National Park stepped away from erasure and moldering ruins, and in the process raised an essential management question: What happens to cultural resources after the Park Service spares them from erasure?²¹

Managing Isle Royale as an “actual” wilderness not only denies or greatly diminishes the long and essential role of human history on the Island, but it also severs the intimate links between Lake Superior and Isle Royale, between water and land in shaping the meaning of that place over time. Isle Royale is much more than a remote bit of land set aside for hiking and camping in the middle of Lake Superior. It is a maritime park. The navigation channels in and around Isle Royale represent a fundamental element in shaping and understanding human use of Isle Royale from the time of the ancients to the present. The same can be said of long-used canoe routes and portages.

Historian William Cronon uses the term “rewilding” to describe Apostle Islands National Lakeshore, which he calls “a superb example of a wilderness in which natural and human histories are intimately intermingled.” Cronon adds that if visitors believe they are encountering pristine nature, they will come away not understanding either the complex human history that has helped create today’s Apostles or the degree to which that human history has shaped the nature they encounter in those islands. “In a very deep sense,” Cronon argues, “what they will experience is not the natural and human reality of these islands, but a cultural myth that obscures much of what they most need to understand about a wilderness that has long been a place of human dwelling.” In a similar manner, separating human and natural history on Isle Royale and privileging the wilderness narrative creates a cultural myth that obscures the significance of both the wild areas and the surviving cultural resources.²²

Reflecting on the relationship between the Ojibwe, history, and wilderness in *Minong: The Good Place*, Timothy Cochrane observes that with the establishment of Isle Royale National Park “officials did not understand the historical links between the North Shore Ojibwe and Isle Royale.” Cochrane further notes that “Isle Royale only became attractive as a potential national park . . . after its economic attractiveness hit bottom, when it becomes plain that its copper deposits would not make anyone rich. It then becomes valuable for its insularity, beauty, wildlife, and for many, a faux wilderness with no human past.”²³

There is some irony in the fact that the two species most commonly associated with wilderness on Isle Royale are exotics: moose arrived on the island around 1912, and wolves followed in the middle of the 20th century. In the mid-1930s, William F. Shiras, field naturalist, wildlife photographer, and author, reported that when he first visited Isle Royale in 1886 he neither saw nor heard reports of moose on the island. He added that “moose are believed to have come first to this island in the early winter of 1912, over an ice bridge from the mainland from either Minnesota or Ontario.” Shiras joined a lengthy list of writers who repeated and perpetuated the claim that moose made a one-time crossing on the ice. Others modified the migration story to credit the moose with swimming to Isle Royale. (The closest mainland would require swimming or walking about 17 or 18 miles from Ontario and more than 20 miles from Minnesota at the international border.) Shiras also noted that in 1912 the Michigan State Conservation Commission planted nine white-tailed deer on Isle Royale.²⁴ Caven Clark concludes in *Archaeological Survey*, that “the presence of moose prior to historic contact has not been demonstrated.” Rolf Peterson has the last word: “Careful archeological work by the NPS has revealed much evidence over the past 4,000 years of Native Americans, caribou, and beaver on Isle Royale, but no indication that moose or wolves inhabited Isle Royale before 1900.”²⁵

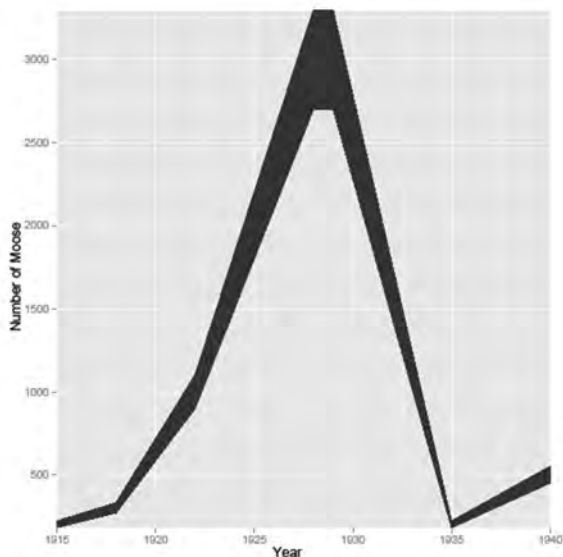
Reports by direct observers in the first third of the 20th century demonstrate a two-decade cycle of rapid expansion and precipitous decline of the moose population on Isle Royale (Figure 2).

Moose found a new home on the island with an abundance of browse, little competition for food, and no predators, including human hunters. Shiras explained that “for years Isle Royale has been a State game preserve where all shooting is illegal.” He reported a population explosion hitting a peak of over 2,000, followed by a dramatic crash as the collective appetite of the ballooning moose population exceeded the available supply of food.²⁶

Adolph Murie estimated in “The Moose of Isle Royale” that by 1930 the moose population on Isle Royale had increased to more than 1,000—a number he immediately qualified by observing, “I think that a count would give a figure far above the estimated minimum. As a rule, wild populations are greatly underestimated, so it would not be surprising if the actual number of moose in 1930 proved to be two or three thousand.”²⁷ Murie’s field work in 1929 and 1930 revealed that serious overgrazing by the moose was already well advanced. He observed significant depletion of pond weeds and lilies, as well as several varieties of terrestrial vegetation favored by the moose. Murie explained:

Ground hemlock (yew), an evergreen shrub ... is another important source of food which has been practically exhausted. Adams, in 1905, and Cooper, in 1910, found it growing in profusion.... Today nothing remains of this spreading shrub except the dead branches and a few leaves near the roots.²⁸

Figure 2. Crash of moose population, Isle Royale, 1915–1935. Figure prepared by Samuel V. Scarpino. Line width accounts for variability of population numbers reported. Scarpino based his calculations on figures and information on moose populations on Isle Royale from the following sources: Murie, “The Moose of Isle Royale”; Paul F. Hickie, “Isle Royale Moose Studies,” *Proceedings of The North American Wildlife Conference Called by President Franklin D. Roosevelt* 11 (1936): 396–398; John D. Snyder and Robert A. Janke, “Impact of Moose Browsing on Boreal-Type Forests of Isle Royale National Park,” *American Midland Naturalist* 95, no.1 (1976): 79–92; B.E. McLaren and Rolf O. Peterson, “Wolves, Moose, and Tree Rings on Isle Royale,” *Science* 266, no. 5190 (December 2, 1994): 1555–1558; François Messier, “Ungulate Population Models with Predation: A Case Study with the North American Moose,” *Ecology* 75, no. 2 (1994): 478–488; Rolf O. Peterson, “Wolf-Moose Interaction on Isle Royale: The End of Natural Regulation?”, *Ecological Applications* 9, no. 1 (1999): 10–16; Peterson, *The Wolves of Isle Royale*.



Murie concluded that the moose had exceeded the carrying capacity of their range and that their numbers diminished the pleasure people derived from seeing them in the wild. “For the greatest enjoyment of the moose,” Murie wrote, “it is not particularly desirable to have them so plentiful that we involuntarily compare the gatherings of them to a prosperous barnyard.” Murie offered a strongly worded conclusion: “Over browsing on the island is general. In order to preserve the landscape it is recommended that a drastic reduction of the moose population be made.” Along with various forms of hunting, Murie suggested introducing large predators such as bears, mountain lions, or timber wolves. His explanation reveals insight into the multiple roles that wolves would eventually play on Isle Royale:

Since one of these predators might possibly do good work in keeping the moose herd in check, and since there are few places where large carnivores are tolerated, it would seem desirable to introduce one or more of these predators on the island. Aside from the possible utility of the predator as a check on the moose population, such an introduction of a native species would add materially to the animal interests of the island.²⁹

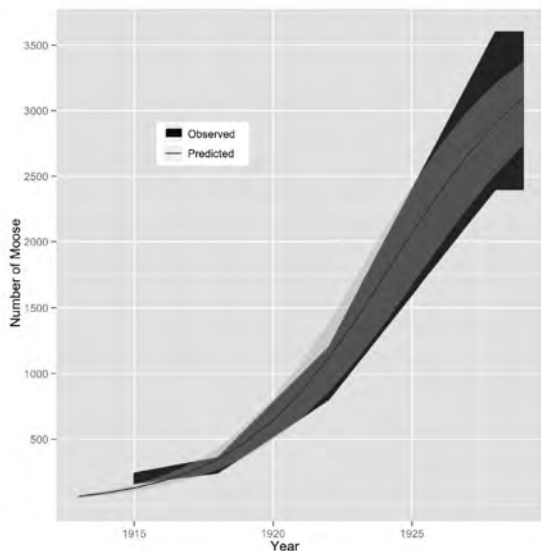
Rolf Peterson observed in 1999 that “following initial colonization early in the 1900s moose increased rapidly. The moose population grew to 3000 or more (5.5 moose/km²) by the early 1930s, then starvation caused a sudden crash in 1934.”³⁰

The moose population continued to plummet. Another survey in the winter of 1931 estimated a population of 500, with evidence of heavy and destructive grazing by hungry moose. By 1934, “all the ground hemlock had been browsed to the roots” mountain ash trees were destroyed, the balsam “had been browsed beyond reach.” Shiras wrote that “information received by the author from the Michigan Department of Conservation has disclosed that the unusually severe winter of 1933–34 and a heavy snowfall destroyed all the younger moose and that only about 75 adult animals survived.”³¹

Until quite recently, the long-held and often-repeated assertion that moose reached Isle Royale in about 1912 either by crossing on the ice or swimming from Minnesota or Ontario received little scrutiny or critical analysis.³² Journalists, historians, scientists, naturalists, and other writers accepted and repeated the moose “genesis story,” apparently without asking: Does it make sense? Or, how many moose would have had to swim or cross the ice in 1912 to produce the population of thousands that crashed in the early 1930s?³³ Figure 3 offers preliminary population figures, which suggest that it would have taken between 25 and 60 moose arriving in 1912 to produce the estimated 3,000 moose that crowded the Island before the crash in the early 1930s. While the numbers reported in Figure 3 are not definitive, they do highlight a need for careful historic and scientific investigation.

The possibility that moose, like white-tailed deer, were deliberately introduced to Isle Royale deserves serious investigation, and at least impressionistically makes more sense than the assertion that a viable breeding population either made the long swim or crossed miles of ice in the dead of winter. It also seems likely that the caribou that predated moose on Isle Royale and the white-tailed deer transplanted in 1912 lost out to the moose in competition for food and disappeared from the island’s environment.

Figure 3. Moose population, Isle Royale, 1912–1930. Figure prepared by Samuel V. Scarpino, using the sources cited in Figure 2. Observed population (black) vs. predicted population (thin line) based upon best-fit growth model. Gray band represents 95% credible interval. Best-fit model suggests between 25 and 60 moose arrived in ca. 1912 and grew at an annual rate of 35% until ca. 1930, when the population overshot carrying capacity and crashed. For a detailed description of the methodology or to have technical questions answered, please contact Samuel V. Scarpino at scarpino@utexas.edu.



The issue of when and how the moose arrived on Isle Royale is much more than an abstract academic conundrum; it gets at the heart of the historical and scientific meaning of Isle Royale. If moose were deliberately introduced, their presence and their travails reinforce the importance of human agency in making and remaking that place over time. How the moose arrived on Isle Royale also intersects with scientific and historical resource management questions: What is “natural” on Isle Royale? Historically, what has constituted ecological integrity? Where are the lines between wild and not wild; between natural and not natural? How do the answers to these questions relate to defining, restoring, protecting, and preserving ecological integrity on the island? How can the answers to those questions enhance understanding of the interplay between natural and human history on Isle Royale?

Moose have become such an important part of Isle Royale’s environment and so highly associated with the meaning of the island that the question of how and why the moose arrived on Isle Royale deserves the same level of scholarly skepticism, careful research, and critical examination as any other significant historical and scientific issue. The results of that research should play a role in information provided to the public and in management of the intertwined and interconnected natural and cultural resources on the island. If people introduced moose to Isle Royale, should that have an impact on resource management? If, historically, caribou were the significant ungulates on Isle Royale, what does that mean for the policy of restoring wildness and wilderness to the island? There are a whole range of reasons why it might not be desirable or practical to restore the island’s wilderness qualities by replacing moose with caribou, but that decision should rest on a foundation of accurate information. (By the standards employed today, the moose “invasion” of Isle Royale in the early 20th century—no matter if they walked or swam or got a ride—would earn them the labels “exotic” and “invasive” based upon the amount of environmental damage they inflict-

ed. The fact that people like moose and want to see them has played a role in their fate and their management on the island.)

The crash of the moose population and the heavy damage the desperately hungry moose inflicted on the vegetation argues that pristine wilderness on Isle Royale was more in the eyes of the beholders than a reflection of reality on the ground. Even accepting in the absence of proof that the moose swam or crossed the frozen Lake Superior, the boom and bust in the moose population and the associated environmental damage was as much a result of human management practices as it was a natural process. In their darkest hour, peering into the abyss of extinction on Isle Royale, the moose were almost literally resurrected from the cooling embers of the great Greenstone forest fire of 1936, which itself was the result of a combination of natural and human causes.³⁴

The Greenstone forest fire of 1936 offers a useful illustration of the interconnected roles of human and natural history in shaping the landscape of Isle Royale. Wildfire is a relatively rare occurrence on Isle Royale, but three years of drought contributed to conditions that made 1936 the worst fire season of the past century or more on Isle Royale. The ignition, acceleration, spread, size, and destructiveness of the Greenstone fire resulted from an almost “perfect” combination of natural phenomena and human activities. On July 25, a human-caused fire began near Siskiwit Bay in the same area where the Meade Lumber Company was harvesting a large volume of pulp wood. Low fuel moisture caused by prolonged drought helped the fire establish itself and spread from its point of origin. Piles of slash and other logging debris, combined with standing, dead trees killed by an infestation of spruce bud worms, fed the flames and created a massive conflagration. Abundant, dry fuel produced a hot ground fire, which baked the soil and consumed the forest on a large portion of the island.³⁵

The Greenstone fire produced a range of impacts, some of which persist to the present. An article in *National Geographic News* in May 2000, analyzing federal fire policy, noted: “One study found that the moose population on Lake Superior’s Isle Royale more than quadrupled in the decade following a 1936 fire that burned 26,000 acres. The University of Minnesota’s Laurits W. Krefting concluded that fire is the primary agent for maintaining the secondary successional vegetation that moose prefer.” The moose population literally rose from the ashes of that fire after a catastrophic population crash caused by a shortage of food. Research summarized by the US Geological Survey on the Greenstone fire and another 1936 fire on Kabetogema Peninsula in Voyageurs National Park concluded that “In many places, the fires burned so hot that entire stands of trees were killed and bare rock exposed,” and “the very severe fires of 1936 had a profound impact on the geochemistry of soils that is still apparent today.” Rolf Peterson reports in *The Wolves of Isle Royale* on studies of moose teeth collected over a multi-decade period: “Moose, unknowingly acting as biological time capsules, had stored in their teeth a record of large-scale ecological change.” Evidence from that research indicates that “the wild fire of 1936 had a major influence on nutrient cycles on the island.”³⁶ At first glance, modern hikers and canoeists might view the former Greenstone burn as a pristine environment. In fact, the forest in a large section of the center of Isle Royale was heavily modified by the Greenstone fire, which itself was a product of natural and human actions.

Eastern timber wolves walked to Isle Royale on the ice in the winter of 1948–1949, but human land managers made the choice to allow them to remain. There is no archaeological evidence of wolves on the island during the long period of occupation by Native Americans, and no scientific evidence of multiple crossings to Isle Royale in the modern period. The wolves that trekked to Isle Royale in the late 1940s could not have picked a location in the United States where they would have been more welcome. Wolves had acquired a bad reputation as ruthless predators and had suffered decades of federal and state government policies that encouraged their extermination. In most other places in the 1940s, wolves colonizing a new location would have been shot on sight. Instead, the timber wolves that wandered over the ice bridge to Isle Royale reached a new national park where hunting was illegal. Park managers thought of the island in wilderness terms and found themselves faced with a rebounding moose population and the memory of the severe crash of the early 1930s. Park officials and their superiors were open to the spontaneous self-introduction of these predators to occupy the heights at the top of the trophic ladder.³⁷ The combination of wolves and moose arriving on Isle Royale within 50 years of each other and taking up residence on a physically isolated, ecologically simplified island called out for careful scientific study of their evolving interaction.³⁸

Wolves on Isle Royale have persisted despite significant problems related to inbreeding and a nearly catastrophic introduction of parvovirus, a disease that affects domestic dogs on the mainland. Parvovirus arrived on Isle Royale either on the boots of hikers or “aboard” a pet dog someone brought to the island, as another biological and human-facilitated connection between the outside and the island. Wolf populations plummeted from a high of around 50 in 1980 to about 14 two years later. The wolves have recovered from the crisis caused by parvovirus, and, so far as public perceptions go, the wolf–moose project has contributed to a sea change in attitudes towards wolves and other predator species. Nonetheless, due to inbreeding the wolves of Isle Royale walk a genetic tightrope suspended above extinction at the same time that the image of the wolf has become an icon of Isle Royale National Park. Rolf Peterson summed up the inbreeding among wolves on Isle Royale in 1999: “Genetic studies revealed that Isle Royale wolves are highly in-bred, all descendants of a single maternal ancestor. Compared to wolves on the adjacent mainland, they have lost genetic variability.”³⁹

In many ways, managing land to return it to wilderness and preserving cultural resources in a way that respects and protects their significance and integrity are flip sides of the same coin. Preserving wilderness and preserving cultural resources begins with the same questions: What is it that we wish to preserve? Why preserve? What gives remnants of the past value in the present? What constitutes integrity? Preservation of wilderness and of cultural resources both result from present-day people making choices about value and significance. We preserve things not because they are intrinsically important, but because we assign value and meaning to surviving fragments of our natural and cultural heritage. After all, our ancestors struggled mightily to conquer and tame and eliminate wilderness in the belief that productive nature best served human society and that agriculture was the highest use of land. In some cases, careful assessment would lead to the conclusion that wilderness values trump cultural resources. When the federal government established the Bob Marshall Wilderness

in 1964, the US Forest Service became custodian and manager of more than 1,000,000 acres of roadless land in northwestern Montana with very little direct evidence of human impact. Such was not the case on Isle Royale.

Natural and cultural resources are equally important to understanding and interpreting the meaning of Isle Royale. William Cronon poses a central question about the Apostle Islands that also applies to Isle Royale. “In a much altered but rewilding landscape, where natural and cultural resources are equally important to any full understanding of place, how should we manage and interpret these islands so that visitors will appreciate the stories and lessons they hold?”⁴⁰

The fact that moose and especially wolves are relative newcomers to Isle Royale poses some challenging biological problems; that fact also raises policy issues related to the interpretive and management balance between human and natural history—between natural and cultural resources. In *The Wolves of Isle Royale*, Rolf Peterson points out a fundamental management issue: “Thus the NPS policy of maintaining ‘native’ species cannot clearly guide us in our quandary. In an ironic blend of tradition and history, one might argue that neither the wolf nor the moose are purely ‘native’ species at Isle Royale.” Peterson chides the park’s management for its non-interventionist policy in managing an inbred wolf population figuratively walking a tight rope suspended above extinction. “Passive observation,” he argues, “can be an easy policy that doesn’t require much expense or ecological understanding; perhaps that explains some of its appeal. But our national parks deserve better than rote adherence to tradition.”⁴¹ The same sentiment applies with equal force to management policies that threaten either to diminish or to strip away human history and human material culture in an attempt to create a state of “actual” wilderness that the island has not experienced for a very long time.

Isle Royale is a wilderness in progress, a historical wilderness, a “rewilding landscape,” shaped by the intertwined forces of human and natural history. Managing Isle Royale National Park as an “actual wilderness” artificially separates the human and natural histories of the Island. It privileges natural history over human history, it elevates the cultural myth of actual wilderness over reality on the ground, and it separates the terrestrial from the aquatic. In so doing, it diminishes the essence of the island. Isle Royale is a maritime park—a place where a “speck” of land surrounded by a sea of fresh water has shaped human and natural history. Thinking about the island as a historical wilderness, instead of wilderness as defined by the Wilderness Act of 1964, can place cultural and natural resources in historic context, highlight their significance and interconnections on Isle Royale, and suggest resource preservation and management strategies that respects the contributions of both to defining the meaning of Isle Royale National Park.

Endnotes

1. This article draws directly on the content and language of the author’s historic context, especially portions of pp. 6–33, which offer an introduction and an examination of wilderness and wilderness: Philip V. Scarpino, “Cultural Resources on Isle Royale National Park: An Historic Context,” unpublished report (Indianapolis: Indiana University–Purdue University Indianapolis, September 2010), online at <http://iupui.academia.edu/>

- Philip Scarpino via the link “Cultural Resources on Isle Royale National Park.”
2. Patricia Zacharias, “The Campaign to Preserve Isle Royale,” *The Detroit News*, August 11, 1998; online at <http://apps.detnews.com/apps/history/index.php?id=191>.
 3. John J. Little, “Island Wilderness: A History of Isle Royale National Park” (PhD dissertation, University of Toledo, August 1978). Isle Royale National Park archives, Houghton, Michigan (hereafter “NPS Archives, Houghton”). Chapter II, “The National Park Impulse,” Chapter III, “New Deal to the Rescue,” and Chapter VI, “From Private to Federal Hands, 1935–1940,” offer a good overview of the formation of Isle Royale National Park and the role of Albert Stoll and the *Detroit News*. Very useful in understanding the formation of Isle Royale National Park are two photocopied packets of documents titled “Chronological History of the Isle Royale National Park Project.” Both are labeled “File Box 2,” and both carry the notation: “Return to Albert Stoll, Jr. *The Detroit News*.” These packets cover September 1921 to August 6, 1946; NPS Archives, Houghton. A good summary history of Isle Royale may be found in Tim Cochrane, “Isle Royale, ‘A Good Place to Live,’” *Michigan History* (May/June 1990).
 4. Zacharias, “The Campaign to Preserve Isle Royale.”
 5. Theodore J. Karamanski and Richard Zeitlin, in their *Narrative History of Isle Royale National Park* (Chicago: Mid-American Research Center, Loyola University of Chicago, February 1988), discuss the connections between the Citizens’ Committee of Isle Royale and Albert Stoll (313–316). They also provide an overview of the property ownership situation and the threats posed by lumbering and pulp harvesting, stating on p. 314 that the “Copper Company planned to sell 65,000 acres of island property to the Minnesota Forest Products Company in early 1922.” A resolution passed by the Citizens’ Committee of Isle Royale in August 1923 identifies the buyer as an Indiana company. A ledger-type book, “Isle Royale Protective Association (Defunct)” (NPS Archives, Houghton, Cabinet 1, Drawer A), contains a membership list of the Citizens’ Committee of Isle Royale, undated but annotated, and membership lists and dues payments for the Isle Royale Protective Association, 1930–1937. Additional material on the role of summer residents, including their motivation and goals, exists in Cabinet 1, Drawer A, NPS Archives, Houghton; see, for example, a letter dated July 3, 1941, with significant marginal notations demonstrating activity up to 1955 (such as the observation that 36 attended a picnic July 23, 1949).
 6. Resolution, Cabinet 1, Drawer A, NPS Archives, Houghton.
 7. Karamanski and Zeitlin, *Narrative History of Isle Royale National Park*, 314–318.
 8. The location of Daisy Farm campground, the Washington Harbor–Washington Island–Windigo area, and McCargoe Cove had discontinuous human occupation for thousands of years. All were sites of prehistoric copper mining, fishing, hunting, and gathering, and all remain in use in the present. On the issue of long-term occupation and use, see Caven P. Clark, *Archaeological Survey and Testing at Isle Royale National Park, 1987–1990 Seasons* (Lincoln, NE: Midwest Archaeological Center, National Park Service, 1995); pp. 37–159 address “Archaeological Sites on Isle Royale,” with pp. 73–80, 86–98, and 131–137 providing information on the locations named above.
 9. Timothy Cochrane, *Minong: The Good Place—Ojibwe and Isle Royale* (East Lansing:

- Michigan State University Press, 2009), 2, 71–72. Clark, *Archaeological Survey*, offers a helpful contextual examination of prehistoric Native American copper mining, working, and trading on pp. 173–179.
10. Clark, *Archaeological Survey*, 173–175.
 11. In *Minong: The Good Place*, Cochrane gives 1850 as the high point of Ojibwe presence (105); he also addresses Ojibwe participation in commercial activities related to mining and fishing (96–106).
 12. Scarpino, “Cultural Resources on Isle Royale,” addresses the American Period of copper mining on Isle Royale (51–68).
 13. Scarpino, “Cultural Resources on Isle Royale,” examines the commercial fishery on Isle Royale and the Western end of Lake Superior (68–95). Also see Philip V. Scarpino, “Great Lakes Fisheries: International Response to the Decline of the Fisheries and the Lamprey/Alewife Invasion,” in *A History of Water, Volume II: The Political Economy of Water*, Terje Tvedt and Richard Coopey, eds. (London and New York: I.B. Tauris, 2006).
 14. Thomas P. Gale and Kendra L. Gale, *Isle Royale: A Photographic History* (Houghton, MI: Isle Royale Natural History Association, 1995), 62–63.
 15. “Pulp Wood Meade Lumber Company” and “18,000 Cords Pulp Wood 1 Mile Long,” Green Album, unfiled, Lawrence Fitzsimmons, NPS Archives, Houghton. Both photos are labeled 1936. Fitzsimmons was a mate on the *USS Beaver*; Gale and Gale, *Isle Royale*, 143.
 16. Scarpino, “Cultural Resources on Isle Royale,” covers resorts and summer residents (101–127).
 17. Rolf O. Peterson, *The Wolves of Isle Royale: A Broken Balance*, 2nd ed. (Ann Arbor: University of Michigan Press, 2007), 57.
 18. Alfred Runte, *National Parks: The American Experience*, 3rd ed. (Lincoln: University of Nebraska Press, 1997), discusses the signing of wilderness legislation by President Ford (241–242). Karamanski and Zeitlin, *Narrative History of Isle Royale National Park*, Chapter 8, “Lake Superior’s Wilderness Park,” 312–348 (figures for acres of wilderness on pp. 340–342).
 19. Doug Scott, quoted in *Campaign for America’s Wilderness*, reproducing an article by Doug Scott in *The Mining Journal* [Marquette, MI] (March 15, 2007); online at <http://www.leaveitwild.org/news/commentary/341>. An excellent summary of the decade-long struggle between wilderness advocates and the Park Service may be found in Michigan Environmental Council, “Isle Royale Wilderness: A Silver Anniversary,” part of the Council’s Michigan Environmental History Project. While sympathetic to the outcome and lacking citations, it offers insight into the role of the wilderness advocates, including Doug Scott.
 20. Public Law 94-567, online at <http://www.wilderness.net/NWPS/documents/publiclaws/PDF/94-567.pdf>; Public Law 88-577 (the Wilderness Act of 1964), online at <http://wilderness.nps.gov/document/wildernessAct.pdf>.
 21. Scarpino, “Cultural Resources on Isle Royale,” considers erasure and moldering ruins (141–143). The pattern of creating wilderness and then backing away from policies and

practices of erasure and moldering ruins also took place in other NPS units in the Great Lakes Basin.

22. William Cronon, "The Riddle of the Apostle Islands: How Do You Manage a Wilderness Full of Human Stories?" in *The Wilderness Debate Rages On: Continuing the Great New Wilderness Debate*, Michael P. Nelson and J. Baird Callicott, eds. (Athens: University of Georgia Press, 2008), 634–635.
23. Cochrane, *Minong: The Good Place*, 160, 169–170.
24. George Shiras 3rd, *Hunting Wild Life with Camera and Flashlight: A Record of Sixty-five Years' Visits to the Woods and Waters of North America, Volume 1, Lake Superior Region* (Washington, DC: National Geographic Society, 1935), 189. Since 2009, the explanation of moose colonization of Isle Royale on Isle Royale National Park's official website has changed from "Sometime early in this century, moose immigrated to the island, probably swimming from Canada's mainland," to "Genetic information also suggests that the island's moose population is most closely related to moose in northwestern Minnesota, perhaps challenging the long-held idea that moose swam across the lake to reach Isle Royale. Did humans bring them here?" See <http://www.nps.gov/isro/naturescience/index.htm>.
25. Clark, *Archaeological Survey*, 213. Rolf O. Peterson, "Letting Nature Run Wild in the National Parks," in Nelson and Callicott, *The Wilderness Debate Rages On*, 652; also, Peterson, *The Wolves of Isle Royale*, 174–175.
26. Shiras, *Hunting Wild Life with Camera and Flashlight*, 187–190, quote on p. 190.
27. Adolph Murie, *The Moose of Isle Royale*, University of Michigan, Museum of Zoology, Miscellaneous Publications no. 25 (Ann Arbor: University of Michigan Press, July 7, 1934), 10.
28. *Ibid.*, 39.
29. *Ibid.*, 41–44, quotes on pp. 42 and 43.
30. Rolf O. Peterson, "Wolf–Moose Interaction on Isle Royale: The End of Natural Regulation?," *Ecological Applications* 9, no. 1 (1999): 10. Peterson cites Murie (1934) and himself (1995), but does not explain how he arrived at the population estimate of 3,000 moose on Isle Royale by the early 1930s.
31. Shiras, *Hunting Wild Life with Camera and Flashlight*, 191, 195.
32. See note 24. Any one who works on the history of Isle Royale will run into anecdotal information that someone who knows someone saw a moose swimming to Isle Royale or heard or read about moose shipped to the Island. This subsurface anecdotal tradition reinforces the need for careful, critical study of how and when moose arrived on Isle Royale.
33. The author asked Samuel V. Scarpino, PhD candidate in biology, University of Texas, Austin, to run some preliminary statistics to determine the probable starting size of the moose population in about 1912 in order to produce populations of several thousand by about 1930. See Figures 2 and Figure 3 and accompanying notes in captions.
34. Peterson mentions the important role of the 1936 fire in bringing back the moose population in "Wolf–Moose Interaction on Isle Royale" (10). Scarpino, "Isle Royale Context," examines the Greenstone fire (28–30).

35. "Fire Management Plan 2004 for Isle Royale National Park," National Park Service, NPS Archives Houghton, Map of burn (17), description (18). This plan uses the name "Greenstone Fire."
36. Donald Smith, in "Los Alamos Sparks Debate on Burn Policy," *National Geographic News* (May 17, 2000), online at http://news.nationalgeographic.com/news/2000/05/0517_alamos.html, discusses the rebounding of the moose population following the fire. See also Laurel G. Woodruff, et al., "Landscape Geochemistry and Forest Fire," in *Impact of Fire on the Geochemistry of the Forest Floor and Mineral Soils, North-Central US*, US Geological Survey, online at http://firescience.cr.usgs.gov/slides/woodruff_geochemsoils2.pdf; and Peterson, *The Wolves of Isle Royale* (56). Peterson mentions the connection between the fire of 1936 and recovery of the moose population in "Wolf-Moose Interaction on Isle Royale" (10).
37. John A. Vucetich and Rolf O. Peterson, "Wolf and Moose Dynamics on Isle Royale," in *Recovery of Gray Wolves in the Great Lakes Region of the United States: An Endangered Species Success Story*, A.P. Wydeven, et al., eds. (New York: Springer, 2009). Their chapter offers insightful background, including a summary of the boom and bust of the moose population between the early 20th century and the 1930s and citations to key scientific studies that address that time period. Vucetich and Peterson also mention a failed attempt to introduce zoo-raised wolves to Isle Royale.
38. In 1958, Durward Allen, Purdue University, and his graduate assistant, Dave Mech, began what would become a continuous wolf-moose study that celebrated its 50th anniversary in August 2008. In 1975, when Allen retired, he turned the project over to Rolf Peterson. Michael P. Nelson, Rolf O. Peterson, and John A. Vucetich, "The Isle Royale Wolf-Moose Project: Fifty Years of Challenge and Insight," *The George Wright Forum* 25, no. 2 (2008): 98–113, offers an overview of the history of the wolf-moose project and an excellent bibliography.
39. Les Line, "In Long-Running Wolf-Moose Drama, Wolves Recover from Disaster," *The New York Times* (March 19, 1996), addresses the issue of parvovirus. Line was an extraordinarily prolific nature writer, especially for the National Audubon Society. See a list of his Audubon Society publications at <http://www.bookfinder.com/author/les-line/>. Peterson, "Wolf-Moose Interaction on Isle Royale" (12), discusses parvovirus as well.
40. Cronon, "The Riddle of the Apostle Islands" (635).
41. Peterson, *The Wolves of Isle Royale* (170, 175).

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