

For the birds: challenging wilderness in the Everglades

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Abstract This paper examines the wilderness of the Everglades National Park (ENP). This wilderness challenges both the concept and history of wilderness in the United States. While the modern concept of wilderness formed in the 1920s revolved around wilderness as a recreational, aesthetic, and spiritual resource, the Everglades was protected for biocentric reasons, a rationale for preservation typically thought of as a product of modern environmentalism. This new ecological rationale for wilderness was necessary largely due to the nature of the Everglades itself. Conservationists traditionally saw little anthropocentric value in wetlands; therefore, activists seeking to protect the Everglades had to utilize new biocentric rationales to argue for its preservation. Because this wilderness is composed of wetlands and aquatic areas, traditional definitions of wilderness have little application in the Everglades. Modern definitions of wilderness revolve around roadlessness and the absence of human-built constructs, but these definitions, particularly roadlessness, have little application in the Everglades. This wilderness yet also illustrates the flexibility of wilderness and shows that ecological values, rather than just romantic notions of unspoiled nature, need to be considered when defining and delineating wilderness. Finally, this paper examines how the human/nature dichotomy that lies at the foundation of wilderness is an obvious fiction in the Everglades.

Keywords Environmental history · Wilderness · Wetlands · Ecological preservation

Throughout American history, the concept of wilderness has exerted a powerful influence over American relationships with the environment. The idea of wilderness has often been a lens through which Americans have perceived the natural world. The Puritans in colonial New England, Transcendentalists like

Henry David Thoreau, Western frontiersmen and women, Progressive Era conservationists, and modern environmentalists had different ideas about wilderness. These ideas, in turn, affected how these individuals manipulated nature. Some Americans, motivated by a belief that wilderness must be tamed and transformed into civilization, sought to conquer and commodify nature, while others saw wilderness in more positive terms and actively sought out wilderness for its spiritual, recreational, or aesthetic benefits. In the twentieth century, wilderness advocates constructed legal definitions of wilderness in an attempt to save these natural places from encroaching civilization. These legal definitions of wilderness reflect American ideas and today play an important role in the protection of many endangered and threatened species of flora and fauna. American cultural and social ideas about wilderness, thus, affect attempts to understand and protect nature.

The wilderness of Everglades National Park (ENP) challenges these legal definitions of wilderness and the historiography of wilderness preservation. Since the twentieth century, wilderness has meant roadlessness, and justifications for wilderness have largely revolved around romantic notions of unspoiled nature and a desire to escape civilization. These ideas were formed in the context of temperate mountain and forests. The Everglades, however, is a subtropical wetland, and as a consequence these ideas about wilderness are less relevant to the definition and management of this wilderness. Quite simply, the concept of wilderness was born in terrestrial systems; the aquatic nature of the Everglades renders this concept extremely problematic.

The Everglades' wilderness was also the first wilderness area protected for biocentric reasons. Until the 1970s, protecting wilderness was an anthropocentric imperative; wilderness was protected for people. Since then, wilderness preservation has been seen as a first step toward the protection of ecosystems. In the case of the Everglades, however, wilderness was seen as a way to protect flora and fauna from human activity as early as the 1930s. Wilderness in the Everglades was a reaction against commercial activities like hunting, timbering, and plant collecting. It was not, as it was in wilderness areas before the 1970s, a reaction against tourism or part of an attempt to protect the scenic, spiritual, and recreational values of a landscape. This

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biocentric wilderness was seen as useless to humans and was protected for the birds and for all the other flora and fauna in the Everglades. The biocentric purpose of this wilderness, like its aquatic nature, also complicates the way this wilderness is defined and managed.

Port-a-potties, chickees, and other structures in this wilderness, many of which exist in campsites in the Ten Thousand Islands, are an example of the contested nature of this wilderness. They violate the legal definitions and aesthetic qualities of this wilderness, yet because of the aquatic nature of the Everglades and the biocentric purposes of this wilderness, they are a necessary for the ecologically responsible accommodation of recreation in the ENP.

Wilderness's Definitions and purposes

The concept of wilderness has had a dynamic history. Definitions and ideas about wilderness have been frequently subjected to debate and revision throughout American history. By the 1920s and 1930s, however, a modern definition of wilderness emerged in the thinking and writings of members of the Wilderness Society. Individuals like Aldo Leopold, Bob Marshall, and Robert Sterling Yard defined wilderness as roadlessness. Wilderness was the antithesis of civilization; roads brought civilization into the wilderness. Roads brought tourists, amenities, gas stations, and trash into the wilderness, thus destroying it. Roads, as historian William Cronon noted, “literally paved the way for all other threats to wilderness”¹ (Dawson and Hendee 2009; McCloskey 1995; Harvey 2005; Sutter 2002; Nash 2001; Frome 1997; Callicot and Nelson 1998; Louter 2006).

This definition received legal recognition in the 1964 Wilderness Act and remains the prevailing way environmentalists, intellectuals, and legal authorities define wilderness. Modern definitions have, thus, remained static; however, modern justifications for wilderness protection and preservation have undergone tremendous debate and revision. One academic, writing in 1998, cataloged as many as 31 different justifications for wilderness in the United States (Nelson 1998).

The individuals who formed the Wilderness Society in 1934 all saw wilderness as a recreational resource that had spiritual, aesthetic, physical, and psychological value to humans. To these activists, and to later members of the Wilderness Society like Howard Zahniser, “wilderness was valued and preserved for *people*.”² Although Aldo Leopold later embraced biocentric ethics and ecological management

strategies, his thinking about wilderness was decidedly anthropocentric. As Paul Sutter noted, “ecological concerns were not a central causative agent or a major component in the founders' definition of modern wilderness (Glover 1990; Harvey 2005; Sutter 2002; Nash 2001; Frome 1997).”³

Beginning in the 1970s, a second “great new wilderness debate” criticized this “received wilderness idea” that had emerged in the first great wilderness debate of the 1920s and 1930s.⁴ A new generation of scholars and activists, inspired by civil rights movements, the environmental movement, biocentric ethics, and the science of ecology, argued that these older ideas about wilderness idea were anthropocentric and too beholden to romantic notions of “unspoiled” land. They also argued that this “received wilderness idea” was unscientific, not ecologically sensitive, and not focused enough on the preservation of flora and fauna (Callicot and Nelson 1998; Forman 1998).

Conservation biologists and other intellectuals and activists have argued that wilderness should primarily be a tool to preserve ecosystems, biodiversity, and habitats for vulnerable species of flora and fauna. Some have even argued that the protection of wilderness should only be seen as the first step in the creation of larger legal structures to protect ecosystems. While older justifications for wilderness revolved around anthropocentric ideas, these newer justifications focused on biocentric concerns. If wilderness before the 1970s preserved wilderness for people, these new ideas entailed the protection of wilderness for plants and animals. Today, wilderness in America is still primarily protected for anthropocentric reasons; however, due to these debates, biocentric rationales for wilderness preservation have become increasingly important since the 1970s. Subsequent environmental legislation, like the Endangered Species Act, has addressed the protection of biota, yet many of the habitats these species live in are regulated by the 1964 Wilderness Act (Cole 2000; Hedee and Stankey 1973; Noss 1994; Forman 1998, 2004; Callicot 1998).

Activists and intellectuals have challenged the purposes of wilderness, yet they have accepted the received definitions of wilderness. Wilderness is still defined by roadlessness. Activists and academics across the sciences and humanities have debated the purpose of wilderness, yet the participants of these debates have accepted the definition of wilderness found in Howard Zahniser's text of the 1964 Wilderness Act. Activists and government agencies have likewise accepted this legal definition of wilderness. Here, wilderness is defined as an “area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not

¹ William Cronon, “Foreword,” in Paul Sutter, *Driven Wild: how the fight against automobiles launched the modern wilderness movement*, University of Washington Press, Seattle 2002, xii.

² Roderick Frazier Nash, *Wilderness and the American mind*, New Haven: Yale University Press, 4th edition, viii, italics in the original.

³ Sutter, 14. For a more in-depth analysis of Leopold's ecological thinking and his thinking about wilderness, see Sutter (2002), 54–99, especially 96–98.

⁴ J. Baird Callicott and Micheal P. Nelson, “Introduction” in *The great new wilderness debate: an expansive collection of writings defining wilderness from John Muir to Gary Snyder*, University of Georgia Press, Athens 1998, 2.

remain.” Wilderness is also a place “without permanent improvements or human habitation,” and a place that does not bear “the imprint of man's work.” Wilderness is also typically defined by size. The Wilderness Act states that wilderness must be composed of “at least five thousand acres of land, or is of sufficient size as to make practicable its preservation and use in an unimpaired condition” (McCloskey 1966).⁵

Advocates for biocentric wilderness areas have accepted these anthropocentric definitions of wilderness somewhat uncritically and perhaps for good reason. These definitions do indeed facilitate the goals of ecological preservation, particularly in temperate mountains and forests. The requirements for wilderness areas that offer humans recreational opportunities, spiritual and physical benefits, and an escape from civilization are largely the same requirements needed for the protection of habitats, flora, and fauna. Reed Noss, a conservation biologist, argues that the two primary definitions of wilderness, roadlessness and size, are both essential components for the protection of ecosystems and habitats. Noss notes that “roadlessness defines wilderness and is the key to its ecological health.” He shows that the negative ecological effects of roads include the “fragmentation and isolation of populations, roadkill, pollution and sedimentation of streams and wetlands, and exotic species invasion.” Noss also notes the roads bring people into these areas and that these humans typically have very negative impacts on wildlife populations. Size is also a factor. According to Noss “large animals require enormous amounts of habitat to maintain viable populations,” and wilderness areas need to be accordingly large to meet these needs (Noss 1998).

When examined in the context of nontraditional landscapes like the Everglades, these anthropocentric definitions of wilderness have less relevance and do not fully guarantee the protection of ecosystems. Defining wilderness as roadless facilitates ecological preservation in traditional terrestrial wildernesses, like temperate mountains and forests, but roadlessness has less meaning in hostile wetland environments and almost no relevancy in aquatic ecosystems. Additionally, although roadlessness certainly can facilitate ecological preservation, wilderness as roadlessness is still indebted to the aesthetic values of wilderness. Wilderness management regulations may subtly privilege romantic human perceptions of the environment over ecological understandings of the natural world.

Biocentric wilderness in Everglades National Park

Although wilderness preservation before the 1970s was primarily focused on anthropocentric concerns, the fight for ENP in the 1930s was marked by biocentric justifications for

preserving wilderness. While wilderness advocates in the 1930s were primarily concerned with the recreational, scenic, and spiritual values of roadless wilderness areas in temperate mountains and forests, Everglades advocates were pushing for a wilderness park that would protect these wetlands' flora and fauna. The ENP was classified as a wilderness by the US Congress in 1934 and was managed as a wilderness by the NPS after 1947 for a variety of reasons; however, the most important was that wilderness would protect the Everglades' biota.

Wilderness in the Everglades was part of a larger trend in the National Park Service during the 1930s. Throughout the 1920s and 1930s, a barrage of criticism regarding the overuse and overdevelopment of parks rained down on the NPS. In response to these criticisms as well as to criticisms from wilderness advocates, the NPS scaled back planned developments in existing parks and moved to create new wilderness parks. These wilderness parks included Isle Royale, Kings Canyon, Grand Teton, and ENP. John C. Miles' book *Wilderness in national parks* examines the creation of Isle Royale, Kings Canyon, and Grand Teton National Park in the context of wilderness in the NPS but does not examine the history of the ENP in any detail (Frome 1997; Miles 2009).

Wilderness in these parks also partly existed due to the fiscal desires of the US Congress in the 1930s. Conservative members of Congress, in particular, wanted to cut federal spending during the Great Depression. In order to push forward with the creation of parks during the period, roads, highways, lodges, park centers, and other amenities in parks were sacrificed to appease budget-conscious politicians. The ENP was also a part of this trend. Conservative anti-New Deal Republicans delayed the park's authorization partly because they were opposed to any federal spending during the Depression. Pro-park Democrats defended the park by arguing that because it would be preserved as a wilderness, the park would not require federal spending⁶ (Miles 2009).

Wilderness was also the latest front in a long-standing and sometimes bitter rivalry between the National Park Service and the United States Forest Service (USFS). Many wilderness advocates believed that the USFS had done a better job of protecting wilderness than the NPS, which throughout its history had been focused on catering to tourism. Wilderness advocates like Aldo Leopold and Bob Marshall formed their ideas about wilderness in the context of their own employment in the Forest Service. Leopold was instrumental in the USFS's creation of the Gila Wilderness, the first wilderness area in the United States, and contributed to the USFS's L-20 regulations that governed “primitive areas” in national forests. These regulations and designations, however, lacked real regulatory teeth and were administered at the discretion of district supervising foresters.

⁵ Wilderness Act of 1964, Congressional Record, House, 73rd Congress, 9504.

⁶ Congressional Record—House, 73rd Congress, 9494–9516.

This disappointment with the UFSF is partly what led Leopold and Marshall to help create the Wilderness Society (Sutter 2002; Flader 1974).

The creation of these wilderness parks was an attempt to convince conservationists and wilderness advocates that the NPS could protect wilderness just as well, or perhaps better than, the USFS. While Leopold and Marshall were pushing the Forest Service to embrace wilderness recreation in the forests, George Wright, a wildlife biologist, was pushing the Park Service to embrace wildlife preservation and biocentric wilderness in the parks during the 1930s. Wright was the touchstone figure in what Richard Sellars called a “minority ‘opposition party’” composed of wildlife biologists within the NPS (Sellars 1997; Miles 2009).⁷

Wright, along with other wildlife biologists such as Ben Thompson and Joseph Dixon, conducted the first wildlife survey of the national parks and published their findings as *Fauna of the national parks*. Wright also funded this survey and publication and, along with his fellow wildlife biologists, challenged the NPS to pursue ecological park management strategies that focused on the health of wildlife and flora, rather than the development-minded and tourist-friendly strategies that were the norm throughout the NPS's history. Wright and his allies also pushed the NPS to embrace wilderness; they criticized roads and development as harmful to the ecology of national parks. This ecological or biocentric wilderness as well as Wright's emphasis on biota and his ideas about park boundaries and park management had an enormous impact on the creation of ENP (Sellars 1997; Miles 2009).

In *Fauna*, Wright argued that the purpose of national parks was “the maintenance of all the animal and plant life in an unmodified wilderness state.” Wright thought that “wilderness preserves such as national parks” could be harnesses for a “new purpose, which is to utilize the fauna in certain localities by saving it in its natural state.”⁸ While researching *Fauna*, Wright traveled to the Everglades, where he was bitten by a mosquito and was forced to spend his wedding day in a hospital “ill with what was diagnosed as a mosquito-carried disease of the malaria group.”⁹ Despite this negative experience, Wright saw the ENP as a potential model park that would protect biocentric wilderness areas and serve as an example for other parks to follow. In *Fauna*, he wrote that in the Everglades, “the wild life [sic] is the park” and discussed how “the native wilderness values” in the Everglades could be preserved by the NPS¹⁰ (Wright 1933).

⁷ Sellars, 93.

⁸ George Wright, Thomas Dixon and Ben Thompson *Fauna of the national parks*, US Government Printing Office, Washington, 1933, 53, 67.

⁹ George Wright to Ernest Coe (EC), 27 January 1934, Record Group (RG) 79, National Archives (NA), College Park.

¹⁰ Wright, 135–136.

Activists and scientists concerned about the fate of the Everglades' biota had, by the late 1920s, and early 1930s, coalesced around the idea that a national park in the Everglades would be the simplest way to protect the area's flora and fauna. At the earliest stages in the fight for the park, the protection of biota, and not wilderness, was their primary concern. They had assumed the ENP would be protected as a wilderness but did not usually talk or write about the topic nor did they yet explicitly connect wilderness to the protection of the Everglades' plants and animals. Park advocates like Ernest Coe primarily focused on protecting the area's biota but casually discussed wilderness and argued that the Everglades had been untouched by human civilization and remained in a primitive or primeval state.

The central figure in the fight for ENP was Ernest Coe, a New England landscape architect who had moved to Miami in 1925. Through his involvement in the Florida Society of Natural History, Coe was educated about the destruction of the Everglades' biota and met scientists who studied the Everglades such as David Fairchild, John Kunkell Small, Harold H. Bailey, and Charles Torrey Simpson. Coe began studying the prospects of preserving the Everglades in the late 1920s as a member of this society, but in 1928 Coe, with the aid of David Fairchild, started his own organization to create a national park in the Everglades (Davis 2009; Grunwald 2006; Wilhelm 2010).

Coe wrote in 1929 that in the Everglades, “wild jungle life, both plant and animal, still abounds undisturbed by the inroads of developments. If not saved now it may be lost forever.”¹¹ In a substantial report written by Coe in 1930 for the NPS, Coe argued that the Everglades was “very generally in its primitive state, unintruded upon,” except for two roads. The Tamiami Trail and a road to Cape Sable both existed in the park, and Coe argued that these two roads would adequately serve the demands of tourists, “leaving the rest of the great area practically in its primitive wilderness.” The potential park area was in “the same primeval physical conditions which prevailed there before the advent of white men.” The park could be created without intruding upon “the otherwise almost uninterrupted nature sanctity of this great area primeval. It could remain through time largely within the province of nature's ruling. Here wild life could continue on in normal balance, reproducing itself though the years.”¹²

As the fight for the ENP emerged from its embryonic stage in the early 1930s, wilderness became a more important part of the justifications and rationales for the creation of the park. George Wright's ideas about wildlife preservation and

¹¹ EC, “The proposed tropic Everglades National Park: a Florida perpetual asset,” 10 April 1929, David Carlton Papers, Florida State Archives (FSA), Tallahassee.

¹² EC to the National Park Service, “Submitted suggestions,” 1 March 1930, RG 79, NA, College Park.

biocentric wilderness meshed perfectly within the biocentric preservation ENP advocates were pursuing in the Everglades. NPS officials and ENP advocates now explicitly argued that the Everglades would remain almost entirely roadless. These activists saw wilderness as a park management strategy that would offer a more complete measure of protection to the area's flora and fauna. The protection of wilderness in the Everglades was neither a reaction against tourism and road building nor was it a way to preserve the aesthetic, recreational, and spiritual benefits of roadless areas.

Wilderness in the Everglades was a reaction to the commercial commodification of the Everglades' biota. Keeping the Everglades roadless and in a primitive state would make it much easier to end the destructive hunting, trapping, fishing, timbering, farming, and collecting practices that had inspired Everglades activists to originally fight for the park. Wilderness would also keep tourists and their destructive habits as well as all humans for that matter out of the vast majority of the park. Wilderness was seen by Ernest Coe, George Wright, and other NPS officials and ENP advocates as a way to preserve the biota of the Everglades in an ecologically sensitive way.

Arguments for biocentric wilderness were also utilized because traditional rationales for preservation were irrelevant and unsuitable in the Everglades. Conservationists had found little aesthetic beauty in swamps, and recreational opportunities in the Everglades were largely limited to boating in the park's estuaries and aquatic areas. National parks, as Alfred Runte has shown, had traditionally protected scenically and culturally significant geological monuments. Most national parks and national forests protected temperate mountains and forests. These scenic and cultural values were absent in the subtropical wetland ecosystems of the Everglades, according to most conservationists at the time. In fact, many rejected the idea that the Everglades had any worth. Conservationists throughout the US Progressive Era had enthusiastically cheered the drainage and destruction of the Everglades, and many conservationists actively opposed the creation of the ENP in the early 1930s. Because so many doubted that scenic, cultural, and recreational values could be found in the Everglades, park advocates were forced to find other arguments for the preservation of the Everglades' wilderness.

NPS wildlife biologist Daniel Beard, a central figure in the creation of ENP and the park's first superintendent, eloquently discussed the lack of scenic and inspirational value in the Everglades while defending the park's biocentric worth as a wilderness. In 1938, Beard surveyed flora and fauna populations in the proposed park boundaries, focusing extensively on the health of animal populations and documenting the harm that collecting, hunting, timbering and other commercial activities had inflicted on the Everglades' biota. In his resulting report, *Wildlife reconnaissance*, Beard wrote that:

The southern Florida wilderness scenery is a study in halftones, not bright, bold strokes of a full brush as in the case of most of our other national parks. There are no knife-edged mountains protruding up into the sky. There are no valleys of any kind. No glaciers exist, no gaudy canyons, no geysers, no mighty trees unless we except the few royal palms, not even a rockbound coast with the spray of ocean waves—none of the things we are used to seeing in our parks. Instead, there are lonely distances, intricate and monotonous waterways, birds, sky, and water. To put it crudely, there is nothing (and we include the bird rookeries) in the Everglades that will make Mr. Jonnie Q. Public suck in his breath. This is not an indictment against the Everglades as a national park, because 'breath sucking' is still not the thing we are striving for in preserving wilderness areas.¹³

This wilderness was not to be a wilderness for people; this wilderness was for the birds. It would be useless to humans but would protect all the Everglades' flora and fauna, including the wading birds of the Everglades that had already been the focus of so many conservationist campaigns and also plants but heretofore undesirable species of fauna like reptiles and predators. Beard wrote that "recreation is strictly limited," in the Everglades. The justifications for this park were, in the words of Beard, "90 percent biological ones." In a memo to the NPS written in 1942, Beard argued that "the biota is the park. If plants and animal are irreparably destroyed we can have no park"¹⁴ (Wright et al. 1933).

The vast majority of this biological park was to remain a roadless wilderness to protect the biota of the park. However, all national parks are also tourist attractions. This contradiction between preservation and use lies at the heart of the national parks (Runte 1979). The 1916 Organic Act that created the National Park Service embodied this contradiction. The act directed the park service "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Ernest Coe, Daniel Beard, George Wright, and other NPS officials were all aware of this contradiction and sought to resolve these conflicting impulses in ENP.

Ernest Coe, in particular, discussed this contradiction repeatedly and at length. Coe himself was riddled with contradiction. Recent historical works have seen the 1930s as a transitional decade where the ecological concerns of modern environmentalism were slowly emerging from the utilitarian conservation and aesthetic preservationist movements of the

¹³ Beard, *Wildlife reconnaissance*, US Government Printing Office, Washington, 1938, 100.

¹⁴ Beard, *Wildlife reconnaissance*, 101, 1; Beard memo to the NPS, 12 May 1942, RG79, NA, College Park, Emphasis in the original.

Progressive Era. The 1930s, and likewise Ernest Coe, were marked by the concerns of both of these movements. Coe was concerned with protecting the flora and fauna of the Everglades and the Everglades' wilderness, and his concerns reflected the current state of ecological sciences in the 1930s. However, in the Stephan Mather tradition of park boosterism, Coe also promoted tourism and road-building in the park. Although he always vehemently defended his promotion of roads and tourism as “only a means for an end,” Coe did believe that small portions of the park should be opened up to tourists. However, he thought this tourist activity, because of the nature of the Everglades, would not have destructive effects on the vast wilderness areas of the park (Sutter 2002; Sellars 1997; Maher 2008).¹⁵

Coe argued that the ENP would be “distinctively different from any of the parks included in the present system. Not only as a great wilderness, sanctuary and field for research but also as an opportunity for the citizen to individually experience the wonders of the tropics.” Coe argued that this park could “preserve its integrity as a wilderness area, nature reservation, bird sanctuary and at the same time have a portion of it open to the touring public.”¹⁶ George Wright had agreed with this opinion in principle, although he likely would not have gone as far as Coe had in promoting it. In 1931, Wright wrote to Coe, explaining to him that in the Everglades, “the usually opposing functions of pleasure ground and game sanctuary could both be developed without prejudice of one cause or the other.” This was due “to the terrain of the Everglades themselves. The visitor cannot wander at will over the landscape. He will be absolutely confined to the roads and development areas.” Wright thought that small areas in the Everglades “could be opened up” to tourists while the vast majority of the park would remain roadless and undeveloped for the “conservation of the unique flora and fauna” of the area.¹⁷

Daniel Beard would touch on this same issue in a speech given in November 1947, just 1 month before the park was formally established. Referencing the Organic Act, Beard rhetorically asked his audience, “How can you conserve a wilderness with all its features intact and still make it available for use? The two charges are diametrically opposed.”¹⁸ Beard attempted to answer this question by discussing park planning, which he emphasized would be primarily undertaken by experts in the natural sciences. Beard discussed the fire ecology of the pine rocklands and succession and climax in that ecosystem. He explained to his audience how the white ibis population of the Everglades fed on fresh water crayfish and how this population was dependent on

water levels that could be affected by canal and road building in other parts of the park. Beard tried to make the point that these ecological issues were the primary factors in determining wilderness preservation and road building in this new park.

Park advocates, NPS officials, and NPS wildlife biologists were enthusiastic about this new biological and wilderness park. However, other conservationists and even wilderness advocates were skeptical that the Everglades had any worth as either a park or a wilderness. A number of activists, led by Robert Sterling Yard, were outraged by the impolitic promotional activities of Ernest Coe, activities that included loose talk about road-building in the park. Yard thought that Coe's promotional methods were evidence that this park was just a local boondoggle and feared that road building in this park would set a bad precedent for other parks. Yard also believed that the Everglades had no scenic value, and hence had no value as a park or as a wilderness area. Yard, who had worked in the NPS and was a founder of both the Wilderness Society and the National Parks Association, a private organization that operated as a watchdog for the NPS, actively opposed the park's creation between 1929 and 1931 (Sutter 2002; Davis 2009).

Yard thought that the Everglades was “an exceptionally good museum piece of primitive conditions.” The area was “not scenically valuable,” but only “marvelous in its botanic detail and variety.” Because it had no scenic value, Yard thought that instead of a national park, the area should be protected as a “botanic reservation,” or as a national monument.¹⁹ To Yard, and many other conservationists in the 1930s, swamps had no scenic, inspirational, or recreational value, and hence were not valuable either as wilderness or as national parks. Yard had talked to colleagues who had visited the Everglades and found that many of them had very negative opinions about the area's nature. According to Yard, these unnamed individuals thought the Everglades was composed of “flat uninteresting swamps,” which were “melancholy and depressing” and “disconsolate.”²⁰

Yard also opposed including the Tamiami Trail in the park. This highway, which was completed in 1928, connects Miami to Tampa and runs directly through the Everglades. Yard argued that including this “over-burdened State highway” in the park was “a new, undesirable, and dangerous precedent” that would damage national park standards and cause a “loss of prestige to the park system.”²¹ Yard

¹⁵ EC to Miss Harlean James, March 18, 1931, Shotlz Papers, FSA.

¹⁶ EC to Duncan Fletcher, 2 April 1929, RG79, NA, College Park.

¹⁷ George Wright to EC, 9 October 1931, RG79, NA, College Park.

¹⁸ Beard speech 12 November, 1947, RG79, NA, College Park.

¹⁹ Robert Sterling Yard, Statement at the Hearing on the Everglades National Park Bill, 15 December 1930, B230, RG79, National Archives, College Park.

²⁰ Robert Sterling Yard to Henry Isaac Ward, 4 February 1929, RG79, NA, College Park.

²¹ Robert Sterling Yard to Ray Lyman Wilbur, 7 January 1931, RG79, NA, College Park.

believed that wilderness was roadlessness and that this road would degrade the already limited scenic values of this wilderness.

Park service officials wanted this road included in the park because the lands north of the road contained important habitats that needed to be protected. Yard's ideas about wilderness sacrificed the protection of Everglades' biota to the altar of roadlessness, while NPS officials, who saw wilderness as a means to reach the ends of biocentric preservation, insisted on the inclusion of these areas. NPS wildlife biologist Harold Bryant, who studied the area in 1934–1935 as part of a committee that included George Wright, argued that this area was “extensively utilized as winter feeding grounds by birds” and that it was the “nesting grounds of at least two rare species—the swallowtailed kite and the limpkin.” They argued since the purpose of the park was to preserve sensitive biota, “this area should be included within the boundaries” of the park. Excluding this area from the park “would destroy its efficiency as a wildlife refuge and prevent [the] proper protection and administration of the park.”²² In the late 1930s, Daniel Beard sought the area's inclusion in the park, in this instance because controlling that area would help the NPS secure the flow of water into the southern Glades. Beard wrote that “any deflection of flow north of the Trail would cause profound ecological changes throughout much of the park area.”²³

This controversy over wilderness, roads, and scenery in the Everglades pushed ENP advocates to refine their ideas about wilderness and to loudly defend them. Before 1931, ENP advocates assumed the ENP was a wilderness, but they had not thought critically about what this meant nor had they vocally expressed their beliefs that wilderness as a management strategy would better protect the biota of the Everglades. As a result of this controversy, park advocates made their strongest and most unequivocal statements about protecting wilderness in the Everglades.

Horace Albright, the Superintendent of the NPS, had a well-deserved reputation as a “Mather man” who sought to develop parks for tourism; however, he sung a different tune about the Everglades. Albright wrote to Yard defending the park, claiming that “we have never had any intention, if the Everglades comes to us, of opening up its wilderness areas.”²⁴ In the course of Albright's long string of correspondence with Yard about this issue, he directly connected wilderness to the preservation of the Everglades biota. Albright wrote that “there has almost never been a park set aside that is more of a true wilderness area than the

Everglades. The major portion, because so impossible of access, will have to remain in its primitive condition. This is addition to the fact that its best use is that of a wild-life refuge.”²⁵ In other letters, Albright defended the NPS, claiming that “we have stated all along that the Everglades should be kept as nearly as possible in its present condition and that practically all of the area recommended for a park can be kept in its present condition.”²⁶

Ray Lyman Wilbur, President Hoover's Secretary of the Interior who had followed the status of the ENP closely, chimed in on the issue as well. He wrote to Albright that if the park were created, “we must reserve large wilderness areas and maintain certain portions of the park in isolation, so that the birds, etc., will not be disturbed.”²⁷ Coe likewise made these connections explicit after this fight with Yard. In an exchange with Harold Bryant concerning NPS regulations about wilderness Coe wrote, in his typically overly verbose style that the park “contains an opportunity for the setting aside of an area of considerable more than 500,000 acres, within which it would be possible to not only keep it roadless but practically pathless as far as man is involved. This area contains vast virgin forests, vast open areas and vast areas intricately combining both, within which not only has there been virtually no disturbance of an ecologic balance but can be assured of remaining so.”²⁸ Coe wrote to Arno Cammerer, who had replaced Albright in 1933 as the NPS's superintendent, explaining that this park would be “essentially largely primeval and of a character that affords [an] opportunity for its native biologic conditions to perpetuate themselves.”²⁹

This controversy also resulted in the 1934 wilderness amendment to the park's authorization. This amendment governed park management for 30 years before the ENP was classified as wilderness in accordance with the 1964 Wilderness Act in 1978. In 1931, Robert Sterling Yard agreed to give up his opposition to the park's creation in exchange for a variety of concessions. The NPS agreed to curtail the park's boundaries to exclude the Tamiami Trail and the lands north of the trail, a provision that incidentally was also popular with south Florida sportsmen. The NPS also agreed to insert an amendment into the park's authorization that would prevent any of the road building and facility construction that Yard feared. This so-called wilderness amendment read: “said area or areas shall be

²² Bryant report, 14 January 1935, SH Papers, PK Younge Library, University of Florida.

²³ Daniel Beard, “Diversity in the Everglades,” in *Regional Review*, August 1938, Vol 1, No2, 23–25, 25.

²⁴ Horace Albright to Robert Sterling Yard, 30 January 1931, RG79, NA, College Park.

²⁵ Horace Albright to Robert Sterling Yard, 24 January 1931, RG79, NA, College Park.

²⁶ Horace Albright to Robert Sterling Yard, 5 January 1931, RG79, NA, College Park.

²⁷ Ray Lyman Wilbur to Horace Albright, 20 December 1930, RG79, NA, College Park.

²⁸ EC to Harold Bryant, 16 April 1936, EC Papers, South Florida Collections Management Center (SFCMC), ENP.

²⁹ EC to Arno Cammerer, 20 November, 1934, RG79, NA, College Park.

permanently preserved as a wilderness and no development of the project or plan for the entertainment of visitors shall be undertaken which will interfere with the preservation intact of the unique flora and fauna and the essential primitive natural conditions now prevailing in this area.”³⁰ This amendment not only represents the first time the US Congress endorsed the protection of wilderness through federal law but also with its emphasis on “flora and fauna,” marks an important moment in the history of biological justifications for wilderness preservation.³¹

Wilderness in the Everglades

The Everglades' wilderness also challenges prevailing definitions of wilderness. Definitions of wilderness have revolved around roadlessness and were formed in the context of temperate mountains and forests. Roadlessness, however, has little meaning in the subtropical wetland and aquatic ecosystems of the Everglades. Because of this, legal definitions of wilderness have been broadly interpreted by the NPS. The management of the park's wilderness areas has sought to protect the biological and ecological values of the Everglades while still accommodating recreation and human activities, and at times, the NPS has sacrificed the anthropocentric values of this wilderness to protect the Everglades' biota. Although traditional definitions of wilderness were dictated by roadless and anthropocentric concerns, the NPS has flexibly interpreted the 1964 Wilderness to make it apply to these nontraditional landscapes and has made biocentric preservation their top priority.

Two different areas of the Everglades, the freshwater marshes that compose the “river of grass,” and the marine estuaries, mangrove islands, and aquatic areas at the southern tip of the Glades, challenge the concept of wilderness in different ways. The Everglades' freshwater marshes are almost completely devoid of any human presence and offer almost no recreational opportunities, making them more of a wilderness than other wilderness areas. In the Everglades, roads do not open nature in the same ways that roads open up terrestrial landscapes for humans. Subsequently, roads have little effect on the recreational and scenic values of these larger wilderness areas. These roads, however, have disastrous impacts on the health of these ecosystems. The Everglades' aquatic areas and

marine estuaries also challenge definitions of wilderness. The concept of roadlessness has no meaning in these aquatic areas as there are obviously no roads. Rather, the NPS has sought to protect the biota of these areas while still accommodating humans and recreational activities. Some areas in this wilderness are extensively used by boaters and fishers, other areas are marked by human structures other than roads, and other sections that encompass bird rookeries and crocodile nesting areas are entirely closed off to all humans. However, in all these areas, the NPS has flexibly applied wilderness legislation to protect the Everglades biota, even while sacrificing some of the anthropocentric values of this wilderness (good overviews of the Everglades' ecosystems include Lodge 1998; Davis and Ogden 1994; Myers and Ewel 1990; McCally 1999).

Wilderness in the river of grass

The Everglades' freshwater marshes are the largest and most iconic landscape in the Everglades. Immortalized by Marjory Stoneman Douglas as the river of grass, these marshes are only feet above sea level and flooded for most of the year. Sawgrass is the dominant life form in these marshes, but over 100 other plant species are present as well, along with numerous species of fauna, making these marshes quite diverse. The river of grass is composed of sawgrass prairies, marl or mixed prairies, and peat soil prairies as well as sloughs, ponds, and creeks. Many of these marshes, especially the Glades' sloughs are dotted with hardwood hammocks and cypress domes (Lodge 1998; McCally 1999; Myers and Ewel 1990).

Although they have tremendous ecological value, these marshes have almost no anthropocentric value as wilderness. Recreational activities like hiking, camping, and even canoeing are almost impossible here, and few humans, other than the occasional park ranger or researcher, ever venture into these ecosystems. Humans can only physically enter these areas where specific provisions for entry are made. As a consequence, these areas are almost entirely devoid of any human presence. If wilderness is the absence of humans, these areas are more of a wilderness than most wilderness areas in the United States.

This wilderness is extremely hostile to humans, primarily due to an obvious fact: wetlands are wet. As a terrestrial species, humans have trouble easily adapting to aquatic environments. Most of the flora and fauna in the area are hostile to humans as well. Mosquitoes are a constant threat in many parts of the Everglades. The alligator, perhaps the animal most closely associated with the Everglades, makes its home in the sawgrass prairies, and although these animals are usually quite docile, intruding into their habitats requires a measure of caution. The flora also poses risks. Marjory Stoneman Douglas called sawgrass a “fierce,

³⁰ Congressional Record, House, 73rd Congress, 9504.

³¹ This is a contentious claim, as the US Forest Service had been administering lands as wilderness since 1924. Regulation L-20 mandated that these areas be kept primitive and were functionally wilderness. According to Susan Flader in *Thinking like a mountain* (16, ft 13), when the USFS designated an area in Gila National Forest a wilderness in 1974, they declared that the area had been the first designated wilderness in the US. However, this was an administrative designation, not part of any of the laws of the United States, as in the case of Everglades National Park.

ancient, cutting sedge,” and the plant's blades will cut unprotected flesh (Douglas 1947).

Almost no recreational opportunities exist in these freshwater prairies. Hiking is almost impossible in these marshes. Although rangers do lead aptly named “slough slogs,” short 2-hour hikes in the marshes, most tourists and wilderness enthusiasts rarely venture into the marshes to hike. Daniel Beard recognized the hostile quality of this wilderness in 1938. He noted that “hiking is practically out of the question” in this park and that “camping will be more restricted than in most park areas.”³² Camping is almost impossible in this section of the Everglades, and only two campgrounds exist in these marshes. Boating is difficult in this area and requires specialized gear. Canoeists almost never visit the sawgrass prairies, and most prefer to paddle in the much more hospitable Ten Thousand Islands and Florida Bay. Motorcraft are totally unsuitable, and although specialized craft, like airboats and dunebuggies, have been developed for travel in the river of grass, they are banned in the park and are only used by park rangers. Trails are impossible to mark in the marsh, and the only way that most humans enter and experience the sawgrass prairies and hardwood hammocks is via the raised wooden platforms and walkways that exist in just a few places off the main park road on the edge of this wilderness.

The park service has developed a few areas for recreation on the very edges of the river of the grass, but these areas have been excluded from the defined wilderness area in the park and offer very limited recreational opportunities. These areas include: the Pay-hay-okee Overlook, the Mahogany Hammock Trail, and the Shark Valley Trails. The Pay-hay-okee Overlook is just off the main park road and consists of a very short (.16 mi) raised boardwalk and a raised wooden overlook that afford visitors a vista of the river of grass. The Mahogany Hammock Trail is also just off the park road and is a half-mile circular raised boardwalk through a hardwood hammock. Visitors cannot leave the trail and recreation is limited to this small walk. Shark Valley affords tourists a few more opportunities to see different parts of the Everglades, but even these are limited. The Shark Valley trail can be found along the Tamiami Trail on the site of an old oil well. The Humble Oil Company constructed the 7-mi road now known as Tram Road that connects the Tamiami Trail to the Shark Valley Observation Tower, which rests on top of the old well. The NPS has built two additional short trails here also: Otter Cave Hammock Trail, a quarter-mile trail through a hardwood hammock, and the Bobcat Boardwalk Trail, a half-mile raised boardwalk trail that meanders through both the sawgrass prairies and a hardwood hammock. Because of the nature of the Everglades, tourists are confined to these trails and cannot wander. There are also a number of old fire roads through the pine forests

of the ENP that tourists can use, but these trails are more akin to traditional wilderness recreation in a conventional forested ecosystem. The Everglades also includes the old Royal Palm State Park, which along with Flamingo, an old fishing village near Cape Sable, and Shark Valley, are the three main centers of tourist activity in a park that spans more than 1.5 million acres.

Aside from these minor exceptions, there is almost no human presence in the ENP's freshwater prairies. If wilderness is the absence of humans, then these areas are more of a wilderness than other wilderness areas. There are places in the Everglades where no one, other than a few park rangers, researchers, and pre-Columbian Native Americans have ever been. People do not use or visit this area. Marjory Stoneman Douglas, who is closely associated with this specific area in the Everglades, almost never visited this part of the Everglades. According to Douglas, these marshes were “too buggy, too wet, [and] too generally inhospitable for camping or hiking or other outdoor activities which naturalists in other places routinely enjoy” (Douglas and Rothchild 1987).

While roads are often conduits for tourists in temperate mountains and forests, roads in the Everglades do not facilitate further recreational activities. Park advocates in the 1930s discussed roads' effects on the Everglades' wilderness. Daniel Beard acknowledged that future road building in the park would have a destructive impact on the goals of wildlife protection but also believed that roads would not facilitate tourism. He explained that “five miles from a highway in this country is real wilderness and there is not one person in a hundred who will go even a hundred feet from the beaten path.” Beard thought “the so-many-acres-makes-a-wilderness angle means little in southern Florida,” and he did not worry about “dudes trampling it [this wilderness] out of existence.”³³ George Wright also discussed this issue, both in *Fauna of the national parks* and in private correspondence with Ernest Coe. He argued that the “terrain of the Everglades themselves” would confine tourists “to the roads and development areas,” thus preserving the Everglades' wilderness and furthering the “conservation of the unique flora and fauna.”³⁴

Roads also have negative effects on the ecologies of wilderness areas. However, the ecological effects of roads in the Everglades are very different than the ecological effects of roads on temperate mountains and forests. Contemporary environmental criticisms of roads largely revolve around two issues: roads dissect habitats and animal populations, and roads cause enormous amounts of roadkill, not just for larger mammalian carnivores and ungulates but also for smaller animals like frogs, armadillos, and turtles. Attempts to mitigate these effects, by either elevating sections of roads or by creating vegetated overpasses have had mixed results.

³² Beard, *Wildlife reconnaissance*, 101.

³³ Beard, *Wildlife reconnaissance*, 101.

³⁴ George Wright to EC, 9 October 1931, RG79, NA, College Park.

In the Everglades, roads act as dams to the flow of water south through the Everglades. The Everglades is essentially a huge, shallow, slowly flowing sheet of water. The Tamiami Trail acts a dam stopping this flow and causing immense damage to the southern sections of the Everglades. Actions are being taken, however, to mitigate these affects. As part of the American Recovery and Reinvestment Act of 2009, key sections of the Tamiami Trail have been elevated to allow water to flow underneath the Trail. Due to the success of this project, further sections of this road are being considered for elevation as well. Here, human technology is being utilized to minimize the ecological impacts of roads and to restore the flow of water in the Everglades.

Roads are not even the most destructive piece of human engineering in the Everglades. Although roads define and delineate wilderness in the United States, in the Everglades canals are the primary human-built constructs that have disrupted and destroyed the Everglades. Canals disrupt the waterflow of the Everglades and have dramatic and destructive effects on the Everglades' ecosystems. Canals were the primary agent of Everglades drainage, a destructive venture that lasted from 1881 to 1928 and severely altered the nature of the Everglades. Canals continued to define human relationships with the Everglades after 1928, when the Army Corp of Engineers permanently entered the Everglades in order to control flooding in South Florida. Old canals built in the early 1900s, like the Homestead Canal, and a variety of canals at Cape Sable still exist in this wilderness. In fact, Snake Bight Trail, one of the most popular birding sights in the United States, exists along one of these old canals (McCally 1999).

Roads have an impact on the aesthetic and biological values of this wilderness, but merely defining wilderness as the absence of roads or other human-made structures is inadequate in these areas of the Everglades. Defining wilderness in the Everglades is made difficult because of its nontraditional ecology. New standards and definitions of wilderness are needed to apply to nontraditional and aquatic areas like the Everglades. Just as wilderness has been redefined in Alaska to include the presence of Native Americans, wilderness needs to be reconsidered within the context of different ecological systems and landscapes (Catton 1997; Spence 1999). Although the environmental community, academics, and the broader populace have embraced ecological concepts, romantic notions of unspoiled and roadless areas continue to exert a powerful influence on the concept of wilderness and on wilderness management.

Estuarine and aquatic wilderness

Wilderness as roadless is further challenged when considered in the context of the aquatic wilderness areas in ENP, specifically, the Ten Thousand Islands, the areas around

Cape Sable, and the Florida Bay. These ecosystems are unlike other wilderness areas in the United States. The Ten Thousand Islands is a series of mangrove islands stretching from Marco Island, a resort town on the West Coast of Florida, to Cape Sable, a large cape mostly dominated by mangroves and coastal prairies. The Florida Bay is essentially a huge estuary, where most of the Everglades' freshwater meets saltwater. Most of the bay is extremely shallow and dotted with mangroves and small limestone islands. These aquatic and estuarine areas are the final receptors of the Everglades' water and are also some of the most biologically productive waters in the world (Lodge 1998; Myers and Ewel 1990).

Wilderness typically only applies to land. The ocean and other aquatic areas are not thought of as wilderness, although they certainly are roadless. When aquatic areas have been considered wilderness in the United States, it is because they are elements of larger terrestrial wilderness areas. For example, the Boundary Waters Canoe Area Wilderness (BWCAW) in northern Minnesota contains about 1,175 bodies of water. However, these aquatic areas only account for about 20 % of the entire wilderness of the area. The BWCAW is a terrestrial environment dotted by lakes and streams, while the ENP's estuarine areas are aquatic ecosystems dotted with islands.³⁵

The ENP's aquatic areas are enormous. The Florida Bay alone is over 800 mi² large and is obviously roadless. These places meet the definitions of wilderness laid out in Wilderness Act of 1964, but they do so in a way that is mostly meaningless. Because wilderness was only thought of in terms of terrestrial temperate mountains and forests, wilderness management in aquatic areas has not been seriously discussed or debated. The 1964 Wilderness Act only briefly and vaguely discusses aquatic wilderness aquatic areas. Section 4c of the 1964 Wilderness Act outlaws the use of motorboats in wilderness areas; however, section 4d states that "the use of aircraft or motorboats where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable."³⁶

The insertion of this purposefully vague language was largely due to the objections of boaters in Minnesota who did not want their activities curtailed by the creation of the Boundary Canoe Waters Area Wilderness. The authors and

³⁵ BWACW page at Wilderness.net: <http://www.wilderness.net/index.cfm?fuse=NWPS&sec=wildView&WID=70>; this website, maintained by the Arthur Carhart National Wilderness Training Center, the Aldo Leopold Wilderness Research Institute, and the University of Montana's College of Forestry and Conservation's Wilderness Institute, is an excellent repository of information about wilderness areas in the United States.

³⁶ Wilderness Act of 1964, Congressional Record, House, 73rd Congress, 9504.

supporters of the 1964 Wilderness Act avoided the issue of whether motorboats should be allowed in wilderness areas out of a pragmatic desire to avoid offending important political interest groups who might have impeded the cause of wilderness preservation. This avoidance was facilitated by wilderness activists who were primarily concerned with protecting wilderness in terrestrial, temperate mountains and forests and who were unconcerned with wilderness in non-traditional landscapes (Harvey 2002, 2005).

The Florida Bay and the Ten Thousand Islands are roadless wilderness areas and are officially part of the Everglades' federally-defined wilderness, yet these areas challenge prevailing definitions of wilderness and illustrate the flexibility of these definitions. This wilderness has been managed in two ways: some areas are used by birds and crocodiles as nesting areas and are entirely closed to humans, while other areas are extensively used by boaters and fishers, although these activities are regulated. Other recreational activities, like canoeing and camping, are also possible, although because the environment of the Everglades, these activities are very different than canoeing and camping in traditional wilderness areas.

Large sections of this wilderness are entirely closed off to humans and are exclusively managed for the benefit of wildlife. Little Madiera Bay, Joe Bay, the smaller bays to the east of Joe Bay, all of the islands in the Florida Bay, and bird rookeries such as the Cuthbert Bay and Rodger Bay rookeries are entirely closed to the public. These restrictions exist to protect the habitats and nesting sites of a number of bird species and the American crocodile. These wilderness areas are exclusively biocentric. They are also entirely devoid of humans and hence are more of a wilderness than most traditional wilderness areas.

The rest of the Florida Bay, Cape Sable, and the Ten Thousands Islands are extensively used by boaters and fishers, although these uses are heavily regulated and restricted. Management of this wilderness has sought to accommodate recreation without harming the protection of these ecosystems. However, some of these areas contain a large human presence. Motor vehicles, large numbers of fishers, and even human structures like port-a-potties exist alongside habitats that are entirely devoid of humans, yet both these areas are classified as the same wilderness. Wilderness has proven to be a flexible concept and the NPS has interpreted wilderness legislation in the Everglades broadly. They have allowed large numbers of humans into these estuarine areas, harming some of the anthropocentric qualities of the Everglades, yet they have stringently protected the biocentric qualities of this wilderness.

Motorboats are permitted in almost all of the saltwater areas of the ENP's wilderness, although they are heavily regulated and restricted. They are allowed in the saltwater lakes along the coastal marshes and mangrove forests, and

all the freshwater lakes in the park, but only if their motors are removed from the water. Motorcraft may enter, but may not exceed 5 mph in other areas, including the waters around Key Largo, Everglades City, and in the Florida Bay and Whitewater Bay basins. Personal watercraft, jet skis, and water skis are entirely prohibited in the park. All of these regulations are constantly being reevaluated by the NPS to ensure the protection of the Everglades' biota.³⁷

The nature of the Everglades itself, just as in the case of the sawgrass prairies, also limits human activity in this wilderness. The Florida Bay is difficult to navigate and treacherous for inexperienced and careless boaters. The bay is mostly composed of large basins that are between 3 and 6 ft deep, which are themselves surrounded by shoals and shallower areas. Navigating from basin to basin along channels is the only way to travel through the bay in a motorboat, and determining depth is a major challenge for even experienced boaters. Most of the bay is too shallow for larger boats to enter, and smaller boats need to pay constant attention to not just speed but also to how much of the propeller is in the water and at what angle. Improper technique will result in damage to the protected bay bottom, hefty fines, a brown, muddy wake, and a damaged or stuck boat.

In the 1930s, amidst debates over tourism and wilderness in the Everglades, park advocates argued that boating would be the primary form of transportation and recreation in the park. They also argued that the Everglades itself would limit the activities of boaters. Activists like Ernest Coe had repeatedly argued that the ENP would be "truly a waterway Park, with many hundreds of miles of waterways penetrating its tropical fastnesses." Rather than cars and roads shuttling tourists to areas of the Everglades, "transportation by boat" would be one of the park's "distinctive features."³⁸ Coe also argued that carefully guided boat tours would be the primary form of tourism in the park. Today, guided boat tours leaving from both Everglades City and Flamingo are, in fact, one of the most popular tourist activities in the park.

Boats have a very different impact on the anthropocentric and biocentric values of wilderness than do automobiles. Although boats constitute a human presence akin to automobiles, boat use does not necessitate the construction of large-scale permanent infrastructure. Boats leave only a wake that soon subsides and some noise pollution, and other than the occasional channel and channel marker, they leave no lasting aesthetic impact on this wilderness. Additionally, most of these boats do not wander far from the boat ramps and other facilities at Everglades City and Flamingo.

³⁷ Current regulations are available at: Everglades National Park Boating Regulations Brochure, accessible on the ENP website at: <http://www.nps.gov/ever/planyourvisit/safetyregs.htm>.

³⁸ EC to Jacques, 14 February 1938, RG79, NA, College Park.

Canoeists seeking a true wilderness experience will certainly hear the whir of motorboats and have to paddle through the occasional boat wake on their first day or two, but as they travel further away from these two boat ramps, motorboats become much less common. Boating in these areas does, however, negatively affect the ecology of these aquatic areas. Recent studies have found that boat propellers cause extensive damage to sea beds and sea grass in the Florida Bay. This calls into question the extent to which the NPS has adequately protected the Everglades biota from humans and the extent to which these areas are managed as a wilderness (South Florida Natural Resources Center 2008).

Fishing and boating may be the most popular activities in these aquatic wildernesses, but more traditional wilderness activities, like canoeing and camping, are also possible here. The ENP maintains campsites throughout the Ten Thousands Islands, Cape Sable, and the Florida Bay and canoeists can actually start at one end of this wilderness and canoe and camp all the way to the other, a trip that takes from 7 to 10 days. However, the quality of these wilderness experiences is very different from camping, canoeing, and hiking in temperate forests and mountains and requires different infrastructure, equipment, and preparation.

Canoeing these estuaries is very different than canoeing through lakes and rivers in terrestrial wilderness areas like the BWCAW. Instead of paddling through lakes and rivers and portaging canoes over hiking trails, this is pure paddling. Roads destroy wilderness, but we generally accept the existence of hiking trails in wilderness areas. Even when hikers “leave nothing but footprints,” the cumulative effect of thousands of footprints, not to mention the effect of portaging canoes, will stamp a visible trail into the wilderness. Canoes, however, literally “leave no trace” in this watery wilderness.

Canoeing in these estuaries offers wilderness enthusiasts unique challenges. If, as Micheal P. Nelson argues, some justifications for wilderness revolve around the need to escape civilization and reconnect with nature through physical exertion and human bonding experiences, then these areas provide more of those experiences and are more of a wilderness (Nelson 1998). There is no available freshwater anywhere in the Everglades' aquatic wilderness areas, meaning that canoeists need to pack about 1 gallon of water per person per day. Navigating through mangrove islands, even with a GPS and accurate nautical maps is very challenging, especially for slow-moving canoes that cannot quickly backtrack. Dealing with the tides also presents a challenge in these estuarine and bay areas. Because most of the bay is only a few feet above sea level, low tide is very hazardous. Oyster beds and shoals hide just under the waterline, posing a hazard to vulnerable canoes. At low tide, tidal flats can extend hundreds of feet out from the shore and canoeists can

easily be stranded for hours waiting for the tide to come in so they can leave or enter a campsite.

Specialized infrastructure is also required for camping in these aquatic locations. “Permanent improvements,” in the words in the Wilderness Act, are needed in these estuarine areas to enable recreation while limiting the damages that humans may cause to the ecological values of this wilderness. Campsites in these areas fall into three categories: beach sites, chickee sites, and ground sites, although beach and chickee sites are the most common. Chickees are traditional Seminole shelters with raised floors, no walls, and posts that support roofs traditionally made of thatched palmetto branches. Because dry land in the ENP is very scarce, adapted chickees have been constructed in some areas to facilitate campers, who otherwise would be forced to hack their way through mangrove islands, or trample over other sensitive fauna in an attempt to clear space for tents and campfires. These chickees, as well as many of the beach sites in the Ten Thousand Islands, are also equipped with portable toilets. In fact, when approaching these campsites, these port-a-potties, some of which are bright blue, are the first thing that canoeists see and are helpful navigational tools when trying to find a specific campsite.

These port-a-potties are an obvious human presence in this wilderness, but are also necessary to avoid biological harm to the islands. Proper techniques for disposing of human waste in the wilderness entail digging a hole that is between 6 and 8 in deep, 150 ft away from water, and away or up slope from anywhere waste could run off into water. Proper disposal of human waste in the ocean requires the disposal of waste at least three miles offshore. Additionally, human waste should never be dumped in bays or estuarine areas. In the Everglades, it is impossible to follow these instructions. Nowhere in this wilderness is 150 ft from water and digging a 6 to 8-in hole for disposal is impossible in most of these ecosystems. The preferred method of waste removal for ocean canoeists is to pack waste out, but this is not an appealing or often-followed option. The NPS has deemed that port-a-potties are the best way to protect this wilderness from both the biological and aesthetic damage that concentrated amounts of human waste on small mangrove islands would cause (Meyer 1994).

These faded brown or bright blue toilet units are an obvious “permanent improvement” in this wilderness. These structures violate the aesthetic values of this wilderness; they are a symbol of civilization in a wilderness that is otherwise absent of any human presence. Wilderness adventurers seeking an escape from civilization or a trip where they become “one with nature,” may be disappointed by this obvious modern convenience, at least until they need to use it. These toilets are an example of how the recreational and aesthetic concerns of wilderness advocates have been sacrificed to facilitate the protection of ecosystems and habitats.

Concentrated amounts of human waste could have a very negative effect on these estuarine and bay areas, and some curtailment of the aesthetic values of wilderness are necessary in this instance to protect the biological values of wilderness while facilitating wilderness recreation. The existence of these port-a-potties reflects a broad interpretation of wilderness regulations. The flexibility of these regulations has enabled the NPS to pursue ecologically sensitive wilderness management strategies.

Conclusion

The modern American concept of wilderness was initially formed within the context of anthropocentric concerns and temperate mountains and forests. Since the 1970s, however, intellectuals and activists have argued that wilderness should instead, or should also, protect ecosystems, habitats, and biodiversity. In the case of the Everglades, however, biocentric justifications for wilderness were present as early as the 1930s. Everglades activists saw wilderness as a park management strategy that would more effectively protect the biota of the Everglades from commercial commodification. Ideas about biocentric ethics and ecology were certainly present in conservationist and scientific communities in the 1930s; however, they had not yet been used as rationales for the preservation of wilderness.

Because traditional ideas about wilderness were formed in the context of temperate mountains and forests, these ideas have less meaning in subtropical wetlands like the Everglades. Defining wilderness as roadless is less meaningful and relevant in these aquatic and wetland ecosystems. In response, the NPS has broadly interpreted wilderness legislation to protect the ecology of the Everglades. Wilderness has proven to be a flexible concept that can be contorted and bent to apply to ecosystems like the Everglades. While the ambiguity of the Wilderness Act of 1964 poses potential problems, this flexibility also contributes to the strength of wilderness. Environmental activists have been able to use wilderness as a tool to protect and restore damaged ecosystems. Designating an area as a wilderness can be the first step in the restoration of a damaged ecosystem full of roads and human-built structures. Ecosystems like the Everglades, which has been intensely damaged by human attempts at drainage, would never qualify as wilderness if these definitions were rigidly defined and applied.

If viewed in ecological terms, every wilderness in the United States, including the Everglades, has been radically altered by human activity and bears the imprint of human actions. The Everglades illustrates the fiction of pristine wilderness and shows the extent to which humans have altered ecosystems throughout the world. Between the 1880s and 1920s, various attempts to drain the Everglades

and convert these wetlands into farmland were undertaken. Drainage was abandoned in the 1920s but was replaced by attempts to control the Everglades' water to prevent flooding, to facilitate agriculture, and to provide urban areas in South Florida with water. All of these attempts to drain and control the Everglades' water severely altered the ecology and hydrology of the Everglades. More recently attempts to increase the flow of water to the Everglades and to restore some semblance of the area's historic flow of water have been undertaken. Yet even if these attempts succeed, dams, dikes, canals, levees, spillways, and pumps will remain in control of the Everglades' water.

Yet, even if these restoration attempts are successful, the Everglades as they once existed are no more. They can never be truly restored, and any Everglades will not only bear the scars of past human activity but will also be wholly dependent on human actions and engineering for its health. A restored Everglades will be another "organic machine," a human-nature hybrid landscape. Attempts to use technology to restore and preserve the Everglades are ongoing and will continue to alter the Everglades as dramatically as the drainage attempts in the early twentieth century. The Everglades today is better understood as the "Semiglades," a novel ecosystem that bears the marks of both natural and social processes. (White 1995; Zwieg and Kitchens 2010).

The Everglades will continue to bear the marks of an immense and ongoing human presence, even if this human presence is invisible in the southern sections of the Everglades that constitute these official wilderness areas. The dams, pumps, and levees that control the Everglades' water are invisible to tourists in the park, yet their existence and use have an enormous effect on the ecological health of the Everglades. Believing that humans are absent from any area of the Everglades is an obvious fiction when considered in the context of the Everglades' water. This fiction is actually present in every wilderness area in the United States. The presence of humans throughout the globe may be as invisible as increased levels of CO₂, yet these impacts are enormous.

American ideas about wilderness have always existed in the context of a human/nature dichotomy. Much of Western thought perpetuates the notion that humans are not a part of nature. Humans create civilization, while our absence defines wilderness. The wilderness of the Everglades, however, illustrates the extent to which humans are an integral part of this wilderness. Because of the historical destruction of the Everglades, current human actions are necessary to maintain the health of these ecosystems. Wilderness here is not defined by mere roadlessness, primarily due to the nature of the Everglades, but neither can it be defined by the absence of humans or romantic notions of unspoiled land. The NPS has flexibly interpreted wilderness legislation in this nontraditional landscape to protect the biota of the

Everglades. This park was the first biocentric wilderness area in the United States and illustrates how wilderness can both accommodate limited forms of recreation and act a biodiversity preserve (Callicot 1998; Forman 1998).

References

- Callicot JB, Nelson M (1998) The great new wilderness debate: an expansive collection of writings defining wilderness from John Muir to Gary Snyder. University of Georgia Press, Athens
- Callicot JB (1998) Should wilderness areas become biodiversity preserves. In: Callicot JB, Nelson M (eds) The great new wilderness debate. University of Georgia Press, Athens
- Catton T (1997) Inhabited wilderness: Indian Eskimos and national parks in Alaska. University of New Mexico Press, Albuquerque
- Cole D (2000) "Paradox of the primeval: ecological restoration in wilderness" *Ecological Restoration* 18(2)
- Davis J (2009) An everglades providence: Marjory Stoneman Douglas and the American environmental century. The University of Georgia Press, Athens
- Davis S, Ogden J (1994) Everglades: the ecosystem and its restoration. St. Lucie Press, Boca Raton
- Dawson C, Hendee J (2009) Wilderness management, 4th edn. Fulcrum, Golden
- Douglas MS (1947) The Everglades: river of grass. Pineapple, Sarasota
- Douglas MS, Rothchild J (1987) Marjory Stoneman Douglas: voice of the river. Pineapple, Sarasota
- Flader S (1974) Thinking like a mountain. University of Wisconsin Press, Madison
- Forman D (1998) Wilderness: from scenery to nature. In: Callicot JB, Nelson M (eds) The great new wilderness debate. University of Georgia Press, Athens
- Forman D (2004) Rewilding North America. Island, Washington
- Frome M (1997, Revised edition.) Battle for the wilderness, University of Utah Press, Salt Lake City
- Glover J (1990) Romance, recreation, and wilderness: influences on the life and work of Bob Marshall. *Environ Hist Rev* 14(4)
- Grunwald M (2006) The swamp: the Everglades, Florida, and the politics of paradise. Simon & Schuster, New York
- Harvey M (2005) Wilderness forever: Howard Zahniser and the path to the Wilderness Act. University of Washington Press, Seattle
- Harvey M (2002) Sound politics: wilderness, recreation, and motors in the Boundary Waters, 1945–1964. *Minn Hist* 58(3)
- Hendee J, Stankey G (1973) Biocentricity in wilderness management. *BioScience* 23(9)
- Lodge TE (1998) The Everglades handbook: understanding the ecosystem. St. Lucie Press, Boca Raton
- Louter D (2006) Windshield wilderness: cars, roads, and nature in Washington's national parks. University of Washington Press, Seattle
- Miles JC (2009) Wilderness in the national parks: playground or preserve. University of Washington Press, Seattle
- Nash R (2001) Wilderness and the American mind, 4th edn. Yale University Press, New Haven
- Nelson MP (1998) An amalgamation of wilderness preservation arguments. In: Callicot JB, Nelson MP (eds) The great new wilderness debate. University of Georgia Press, Athens
- Noss RF (1998) Wilderness recovery: thinking big in restoration biology. In: Callicot JB, Nelson MP (eds) The great new wilderness debate. University of Georgia Press, Athens
- Noss RF (1994) "Building a wilderness recovery network" *The George Wright Forum* 11(4)
- Maher N (2008) Nature's new deal: the civilian conservation corps and the roots of the American environmental movement. Oxford University Press, Oxford
- McCally D (1999) The Everglades: an environmental history. University Press of Florida, Gainesville
- McCloskey M (1966) The Wilderness Act of 1964: its background and meaning. *Oregon Law Review*, 45 (June 1966)
- McCloskey M (1995) What the Wilderness Act accomplished in protection of roadless areas within the national park system. *J Environ Law Litig* 10(455–471)
- Meyer K (1994) How to shit in the woods: an environmentally sound approach to a lost art, 2nd edn. Ten Speed Press, Berkeley
- Myers RL, Ewel JJ (1990) Ecosystems of Florida. University Press of Florida, Gainesville
- Runte A (1979) National parks: the American experience. University of Nebraska Press, Lincoln
- Sellars RW (1997) Preserving nature in national parks: a history. Yale University Press, New Haven
- Spence MD (1999) Dispossessing the wilderness: Indian removal and the making of the national parks. Oxford University Press, Oxford
- South Florida Natural Resources Center (2008) Patterns of propeller scarring of seagrass in Florida Bay: associations with visitor use factors and implications for natural resource management. SFNRC Technical Series 2008:1
- Sutter P (2002) Driven wild: how the fight against automobiles launched the modern wilderness movement. University of Washington Press, Seattle
- Wilhelm C (2010) Prophet of the glades: Ernest Coe and the fight for Everglades National Park. Dissertation Florida State University
- White R (1995) The organic machine: the remaking of the Columbia River. Hill and Wang, New York
- Wright G, Dixon T, Thompson B (1933) Fauna of the national parks of the United States. US Government Printing Office, Washington
- Zwieg C, Kitchens W (2010) The semiglades: the collision of restoration, social values, and the ecosystem concept. *Restor Ecol* 18(2)