Bill Reffalt

Wilderness Resource

Distinguished Lectureship

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A VISION FOR WILDERNESS IN THE NATIONAL WILDLIFE REFUGE SYSTEM

Bill Reffalt

UNIVERSITY OF IDAHO

WILDERNESS RESEARCH CENTER

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Illustrations by Lorraine Ashland.

Page V - Last Lake, Sheenick Valley, Arctic National Wildlife Refuge, Alaska

Page 5 - Caribou

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Foreward

Edwin E. Krumpe

It gives me great pleasure to welcome you to the thirteenth in the annual series of Wilderness Resource Distinguished Lectureships sponsored by the University of Idaho Wilderness Research Center. The center's mission is to promote research and educational activities to further our understanding of wilderness and natural ecosystems and humankind's relationships to them. Our goal is to gain knowledge that can be applied to better manage designated wilderness so that the public can enjoy sustained use and benefits from our wilderness resources. Since its inception in 1972, the center has supported and sponsored research projects in Idaho and the Pacific Northwest, with more than 30 studies completed in the last two decades.

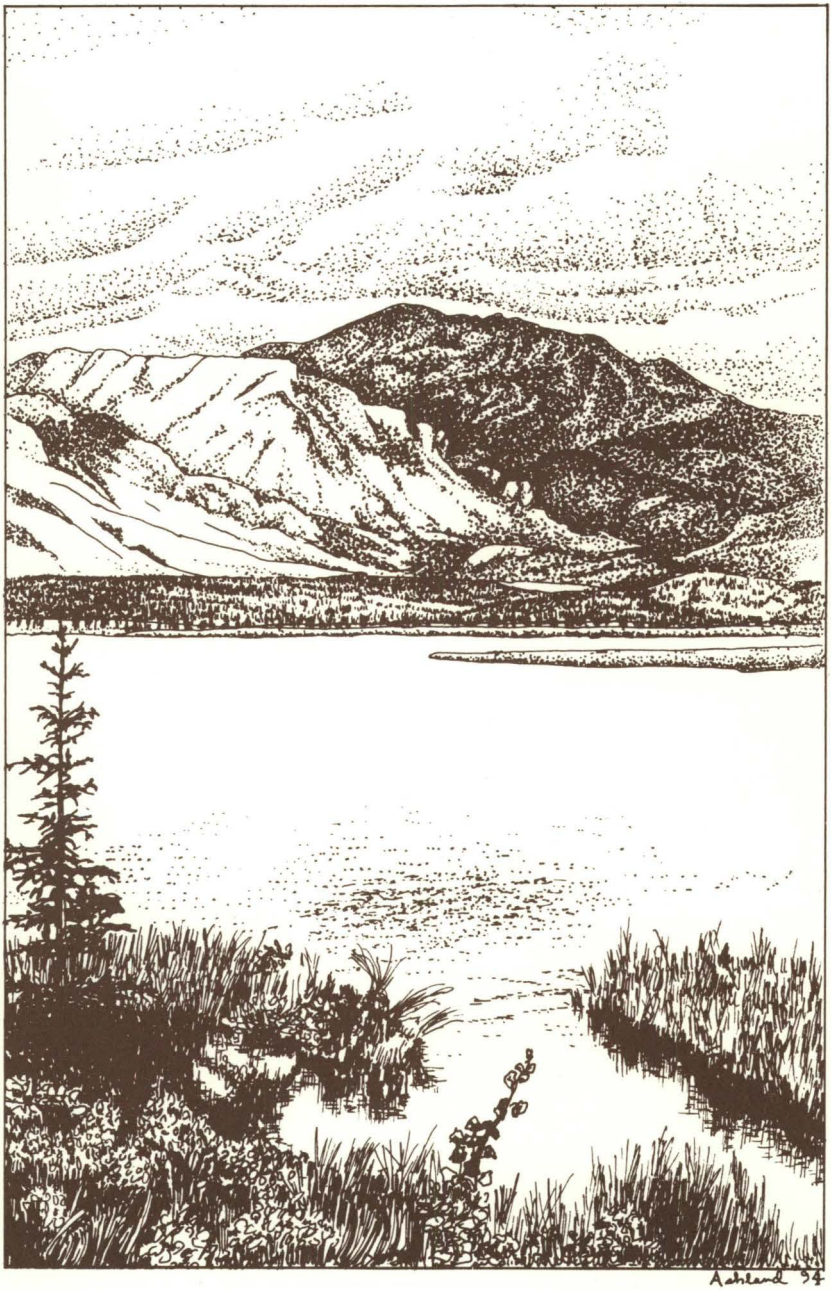
The center also co-sponsors four university courses, giving students the opportunity to study wilderness principles and practices, and provides regular internships for students to gain first-hand experience in wilderness management and research. At the national level, the center and its associated staff have sponsored a national conference on wilderness management, led two national wilderness task forces, and participated in many workshops, symposia, and national research conferences.

But of our long standing educational traditions, the one in which we take most pride is the annual Wilderness Resource Distinguished Lectureship. In what has become a fine academic tradition, the Wilderness Research Center has sponsored the lecture series to encourage constructive dialogue and to broaden our understanding of the management and meaning of wilderness resources.

Speakers of national prominence have been invited on the basis of their philosophical and scientific contributions to wilderness management.

Tonight we continue this tradition with the third in a mini-series of four lectures presenting visions for wilderness in the four federal agencies responsible for managing the National Wilderness Preservation System - the Forest Service, National Park Service, Fish and Wildlife Service, and the Bureau of Land Management. The National Wildlife Refuge System, managed by the Fish and Wildlife Service, contains 20,676,341 acres of designated-wilderness. To this end we are honored to present Bill Reffalt who has made substantial contributions to the wilderness movement in his 20-year career with the U.S. Fish and Wildlife Service and eight years with the Wilderness Society. He has dedicated his life to enhancing wilderness management, especially in the National Wildlife Refuge System.

Dr. Krumpe is principal scientist for the Wilderness Research Center and professor in the Department of Resource Recreation and Tourism.


Ashland '94

Introduction

John C. Hendee

I'm very pleased to introduce Mr. Bill Reffalt, the thirteenth speaker in the Distinguished Wilderness Resource Lectureship series. Throughout his career Bill Reffalt has been an effective leader advocating wilderness in our nation's Fish and Wildlife Refuge System. Now a freelance consultant on fish and wildlife policy working for the Wilderness Society, other environmental organizations, and federal agencies, Reffalt earned his credibility during a twenty-year career in the U.S. Fish and Wildlife Service and eight years with the Wilderness Society. A regular teacher at the National Wildlife Refuge System's management academy, he is presently writing a book on the history of the refuge system.

Bill earned a bachelor's degree in wildlife management, with honors, from Colorado State University in 1963. Following steady career progress from field positions to national leadership, Reffalt spent almost seven years as special assistant to the director and chief of the U.S. Fish and Wildlife Service's Office of Alaska Refuge Planning. At the Alaska office he led field efforts to develop new and expanded refuges, parks, and wild and scenic rivers in Alaska, and testified before Congressional committees. These efforts culminated in the 1980 legislation that added an unprecedented 54 million acres to the refuge system, plus almost 50 million acres to the National Park System, Wild and Scenic Rivers System, and to wilderness in the National Forests.

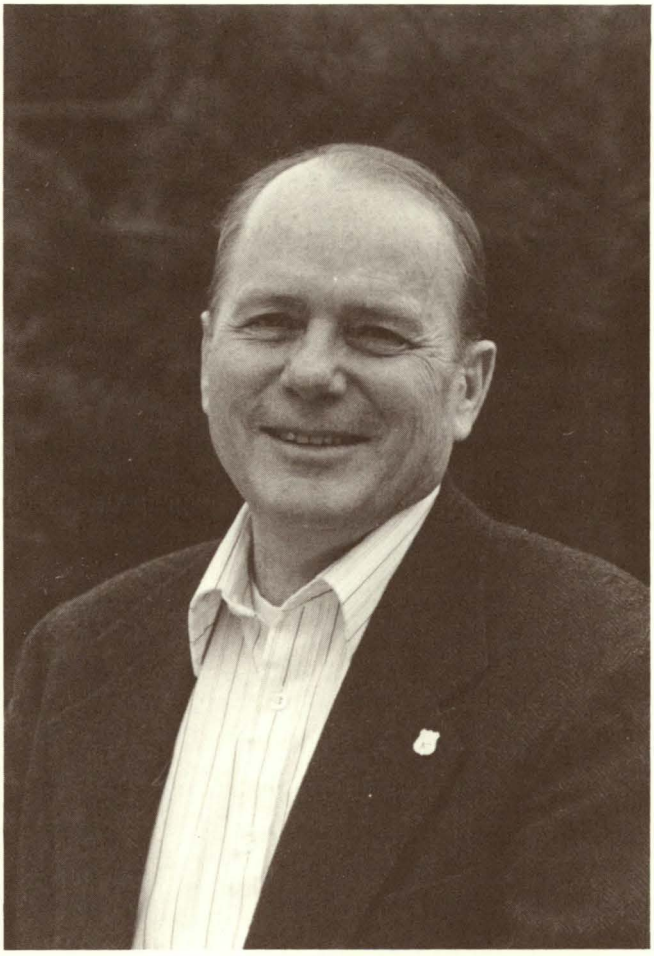
For the Wilderness Society in Washington, D.C. from 1984-1991 Reffalt led efforts to support Fish and Wildlife

Service refuge system programs and, with his help, Fish and Wildlife Service land acquisition funding increased from about $20 million in the early 1980s to around $97 million in the 1990s. He also spearheaded introduction of the Wildlife Refuge System Management and Policy Bill (not yet passed) that will further enhance refuge programs in the future. That enhancement includes a vision for wilderness in the Fish and Wildlife Service refuges throughout the United States.

Bill Reffalt knows resource management and environmentalism. He's contributed to both. Earlier today he shared his experiences with our students, and they deeply appreciated learning first-hand from someone who has spent so much time in successful efforts to advance conservation.

Ladies and gentlemen please welcome our 1994 Distinguished Wilderness Resource Lecturer, Mr. Bill Reffalt, who will present "A Vision for Wilderness in the National Wildlife Refuge System."

John C. Hendee is dean of the College of Forestry, Wildlife and Range Sciences, and director of the University of Idaho Wilderness Research Center.



A VISION FOR WILDERNESS IN THE NATIONAL WILDLIFE REFUGE SYSTEM

Bill Reffalt

Thank you Dean Hendee. I feel privileged to be here, humbled by the excellent reputations of previous lecturers in this series, and honored by your kind words. I am further motivated by the many students and friends here tonight representing today's and tomorrow's stewards of America's wilderness legacy.

"Wilderness is the province, the habitat of wild creatures just as civilization is man's habitat."[1] When Roderick Nash made that statement at the 1969 biennial wilderness conference, he spoke not merely his opinion, but was presenting the results of his research on the etymology of the word "wilderness." Nash found that "Wildēor," a term used in an 8th Century epic entitled *Beowulf*, had evolved from Teutonic, Norse and Old English terms that, put simply, meant uncontrolled or wild beasts found in forested swamps. Add "ness," meaning "the quality of" and the result is literally "the quality of being the place of wild beasts." Placing an official Wilderness designation on a National Wildlife Refuge then, pays it the double honor of recognizing it among the finest representatives of untrammeled ecosystems and wildlife habitats in our nation.

The National Wildlife Refuge System

Presently, our National Wildlife Refuge System (refuge system or NWRS) contains 20,676,341 acres of federally designated wilderness. Tonight I would like to introduce you to some of those places and the wildlife that rely upon this habitat for their existence. Ours, of necessity, will be a vicarious venture, but I both invite and urge you to seek out these refuge areas, and others in the refuge system, as places providing excellent opportunities to meet native wildlife in their islands of remaining habitat.

Before we begin that brief visual excursion, I would like to introduce the refuge system itself: nearly 500 named units cover 91.5 million acres, with one or more refuges located in each of our 50 states plus six U.S. territorial areas. The NWRS was begun 91 years ago with Pelican Island in Florida reserved for the protection of the then-threatened brown pelicans, herons and other native birds. The NWRS is hardly known by average Americans. However, this is not true if you are an average Alaskan because refuges comprise about 20 percent of that state's land area (over 76 million acres of refuges). Here Congress chose to debate, in a lengthy and unusually public manner, the size, nature, and location of those refuges, along with 44 million acres of new national parks and over 56 million acres of National Wilderness Preservation System lands.[2]

Permit me to leave the refuges of "the Great Land" for now, while we scan some of the other 476 refuges in the system. Some people have suggested that the refuge system is not a system in any cohesive sense, while others call it a "stealth wildlife conservation system." As we will soon see, the NWRS deserves more respect than that, but ultimately it is slightly less important what mankind thinks of it than how the system performs for the fish and wildlife that rely upon it for existence.

A Haven for Birds and Mammals

Of all America's wildlife species, the NWRS is associated most closely with migratory birds, both in its origins and subsequent evolution, and wetland-related species have been a particular focus. Nearly every migratory bird species in North America makes use of one or more units of the NWRS. Some species, subspecies, and populations rely exclusively on refuge habitats during critical parts of their annual cycle.

To phalanxes of migrating birds, the refuge system in the conterminous 48 states appears like chains of sparkling oases draped across the biological sahara of agricultural America. That pattern, made increasingly weblike from the sheer number of refuges, remains based on the needs to: a) provide bird nesting areas in the north, b) wintering areas in the south, and c) migration hostels and energy supply depots at strategic spots in between. **At least six international treaties commit our nation to a continuing priority effort on behalf of these feathered legions.**

Early in this century, after Americans had witnessed the spectacular 19th Century demise of such noteworthy creatures as the great auk, American bison, Carolina parakeet and passenger pigeon, concern for game animals resulted in refuges whose purpose was to provide for individual species and their associated ecological communities. There are refuges for bison in Montana, Nebraska, and Oklahoma; elk in Montana and Wyoming; antelope in Oregon and Nevada; Kodiak bears and moose in Alaska; and desert bighorn in Nevada, Arizona, and New Mexico. Most of these units exceed one-half million acres in size and contain most of the basic wildlife community associations of the animals' original ecosystems.

Refuges that harbor marine species, insular endemics, and maritime ecotypes have been part of the NWRS since its early years. The NWRS contains a large number of islands and islets, ranging from the backyard-sized 0.6-acre Mille Lacs National Wildlife Refuge (NWR) in Minnesota to

the mega-reserve-sized 1,815,000-acre Kodiak Island portion of the Kodiak NWR and the nearly 5,000,000-acre Alaska Maritime NWR with its 3,000-plus above-water projections which include many large islands. The northwest Hawaiian Archipelago, strewn over a thousand miles of the Pacific Ocean, was one of more than 53 refuges designated by Theodore Roosevelt during his two-term presidency. Natural rocks along all of America's coastlines combine to represent important portions of the nesting areas for North America's marine species, coastal colony nesting birds, shorebirds, and marine mammal haulout areas.

In recent decades, land acquisitions for refuges have once again shown an emphasis on endangered and threatened species. Many refuges provide the last remnants of habitats for creatures squeezed against the border of that ultimate abyss, extinction. Thus, the refuge system has come full circle in its original emphasis in less than one hundred years. We all know that the causes of the current ecological dilemma and loss of biodiversity are complex, frequently involving fragmentation, degradation, and sheer loss of habitats. This makes recovery a problematic and sometimes expensive venture.

Turning the tide of losses this time will take all of our federal and state conservation land systems and a concerted effort by all interested Americans. **Our politicians must be convinced to do what is right for the environment in the long-run as demonstrated in current efforts to pass organic legislation for the refuge system and to reauthorize the Endangered Species Act.**

*A Snapshot View of Wilderness in the Refuge System**

Have you gazed on naked grandeur where there's nothing else to gaze on...?
Have you swept the visioned valley with the green stream streaking through it,
Searched the Vastness for a something you have lost?
Have you strung your soul to silence? Then for God's sake go and do it;
Hear the challenge, learn the lesson, pay the cost.[3]

Alaska- The Brooks Range, where it arches against the Arctic Ocean in the northeast corner of Alaska, is a special place for several reasons. Here, for tens of millennia there has been an annual gathering of spectacular proportions and biological significance on what is known as the Arctic Coastal Plain. Caribou, travelling a thousand miles or more across snowbound tundra, and sometimes raging rivers,

*(*A full color slide show highlighted this portion of Bill Reffalt's presentation).*

make their way each April from wintering grounds north of the Yukon River in Canada crossing into the United States' northernmost designated wilderness, the treeless plain of the Arctic National Wildlife Refuge. But, the caribou soon pass beyond the wilderness into a portion of the refuge where that designation has been locked in legislative debate because of hydrocarbons that *may* exist beneath its surface. Here, in the remarkably brief span of about 10 days as many as 100,000 caribou congregate to refresh their population for another year before they are driven by the onslaught of colossal hordes of biting insects to seek the on-shore breezes and insect-free gravel bars along the coastline. Areas that may be unused by the herd in one year due to snow conditions, predation, insects, or other causes often become crucial in subsequent years to successful calving and survival, or for the essential insect relief sought during herd aggregation. Big as it is, the Arctic NWR is fully utilized by its "Wildēor" and its spaces are essential to their long term success.

Here, the United States has committed 19 million acres to refuge status with a boundary drawn to include as much of the ecosystem of the Porcupine caribou herd as the political compromises in that 1980 legislation permitted. Here, too, is the largest designated wilderness in the refuge system – eight million acres stretching from the Arctic Ocean across the glaciers and peaks of the Brooks Range and down the upper reaches of southward coursing rivers to the taiga. A full range of arctic ecological communities are found in this wilderness and some of the most spectacular scenery in the NWRS.

About 25 percent of the acreage in the 16 National Wildlife Refuges in Alaska is designated-wilderness. Only the briefest introduction to them is possible at this time so I have chosen to show the types of areas comprising this wilderness and some representative wildlife one might expect to find there. Solar basin refuges like Selawik, Koyukuk, and Innoko contain watery wildernesses where the rivers hold free rein and fresh water lakes teem in the summer and early fall with wetland dependent birds and mammals.

The Alaska Maritime NWR presents a vast assemblage of coastal islands, islets, rocks, reefs, spires, beaches, and headlands from near Point Barrow at the top of the state to Attu Island at the end of the Aleutian chain and then across the broad Pacific coast sweep of the state to the rain forests of southeast Alaska. Supplying a wide variety of diverse habitats, often shrouded in mists, this refuge shelters some of the most significant concentrations of seabirds in the world. Over 20,000,000 pairs of thirty bird species (80 percent of the marine birds nesting in Alaska) including kittiwakes, murres, murrelets, northern fulmars, puffins, storm petrels, and many others use the refuge for nesting and brooding while feeding in the adjacent waters. Units of the Alaska Maritime Refuge also provide haulouts for important portions of the states' marine mammals. About 2.7 million acres of the refuge have received wilderness designation.

The Pacific Northwest- Skipping southward along the coastline we find similar, but less extensive refuge rocks, islets, and islands along the coasts of Washington and Oregon and the famous Farallon Islands of California. Most of these were made refuges in the early 1900s; nearly all are designated-wildernesses.

The Southwest- Crossing eastward to the lower reaches of the Colorado River, we find one of the recently designated refuge wilderness areas, the Havasu NWR. Here the desert meets and gives way to a major water course creating a riparian habitat enormously important to a diversity of fish and wildlife species. Moving eastward again onto famously arid reaches of the northern Sonoran desert we encounter another 1990 addition to the National Wilderness Preservation System, and one of the most pristine examples of this desert biome left in America. Cabeza Prieta is home to a unique complex of wildlife and plants deserving of man's most thoughtful stewardship. In New Mexico, where the arid Pecos drainage is pinched between the Rockies and the Llano Estacado, the Salt Lake Wilderness located within the Bitter Lake NWR encompasses both the desert and unique wetland habitats. It plays host not only to geese and cranes, but also to relict and endangered fish fauna.

The Midwest and Lake States- In Oklahoma, rocky knobs rise out of restored native prairie, once again providing a home to bison, elk, bobcats, and the spirits of native Indians. On the Upper Peninsula of Michigan, the Seney Wilderness encompasses northern woods silently rising from soggy marshlands which often ring with spine tingling cries from the loons and the rattling purrs of sandhill cranes.

The Northeast- The Great Swamp NWR in New Jersey is actually a 3,000-acre forested swamp situated an hour from downtown New York City. The Congressional colloquies while deciding to designate this area, demonstrated a belief that upland reserve areas can become island-like in character when the surrounding landscape is developed beyond a critical point.

The Southeast- In Southern Georgia, the Okefenokee NWR is "knee-deep in alligators" and studded with great cypress trees. This rich watery world is enveloped in the Okefenokee Wilderness. Continuing south to the subtropical Florida mangrove islands we come to Pelican Island where the refuge system started, and move beyond to the lower Florida Keys. Here the challenge of protecting diversity and the entire Florida Bay are intertwined with the fight to save the Everglades and the battle to maintain the endangered Key Deer (the "toy deer"). These are beautiful, productive, and deserving refuge wilderness units, but they offer severe tests for no-impact concepts as their accessibility by motorized craft is practically unlimitable.

Applying the Wilderness Act on the Refuge System

As early as the 1920s, refuge system administrators participated peripherally with the Ecological Society of America and others in discussions and efforts to locate and describe the natural communities and protected areas in America.[4] The influences of these interactions on the selection of refuge areas seem confined to the western "game ranges" and some Alaska big game areas. **As late as 1963,**

leadership in the U.S. Fish and Wildlife Service (FWS), which administers the refuge system, believed that the then-common 100,000-acre qualifying yardstick would limit wilderness designation to only a handful of refuge areas. Only Okefenokee NWR, the large western refuge units, and the Alaska refuges were likely wilderness candidates in the view of the agency's director.[5] To FWS leaders, wilderness designation would mean little change in the management of those areas and would provide a layer of needed Congressional protection.

After passage of the Wilderness Act, FWS leaders acknowledged the 5,000-acre minimum and the special inclusion of refuge islands, but several uncertainties remained for them.[6] It is apparent they saw benefits in the statutory protection and the opportunity to withdraw some refuges from the mineral laws thereby benefitting sensitive refuge habitats. On the other hand, they thought some inconsistencies existed in the "Act" and found guidance on refuge wilderness management to be sparse at best. Nonetheless, **FWS selected 82 roadless areas in 67 refuges (including 48 islands or island groups) for initial study and proceeded to conduct the field studies and public hearings.** At that stage knowledge, experience, and expertise related to the wilderness concept became vested in a small cadre of refuge management personnel. Perennially short of staff, refuge offices in Washington and the regions found it convenient to have a single staff specialist coordinate the work effort, including the issuance of written guidelines, interpreting the law, and providing guidance about wilderness management. As the studies proceeded, this cadre of personnel increased only slightly. The more difficult and larger study areas were reviewed by wilderness study teams, while on the less controversial or smaller units, individual refuge managers, like myself, completed the field reviews, wrote the required reports, and arranged public meetings and hearings with support from the regional coordinator.

Given this approach, the Wilderness Act never became widely understood on refuges. It was a priority for most FWS leaders only because of the required deadlines. **When the**

studies were completed and resulting recommendations forwarded to Congress, the "wilderness" matter was considered ended. From that point forward the only FWS personnel involved in wilderness issues were the individual refuge managers and staff on refuges with subsequently designated wilderness areas and a single Washington staff person assigned the task of handling any wilderness questions and reports, among their other duties. **Thus, an agency with considerable and growing wilderness responsibilities had established almost no institutional knowledge and experience with the Wilderness Act or its required management concepts, and virtually no agency ethos for refuge managers to utilize in their wilderness interactions.**

The apparent weaknesses arising from these historical circumstances have been accentuated by lack of funding for refuge wilderness matters. **The FWS has never requested specific funds or manpower in the NWRS budget to accomplish work associated with wilderness designation** and has yet to receive an appropriation for wilderness boundary surveys, research, monitoring, management, or enforcement. This has resulted in an indelible message to managers throughout the refuge system: *wilderness gets no priority in refuges.*

Today, some regions of the FWS are filling these voids by developing constructive guidance manuals, wilderness planning concepts, basic wilderness indoctrination and training, and advanced training for new managers on refuges containing designated wilderness. These needs grow, as occurred in 1990, when Congress takes action on some of the long pending refuge proposals. Currently 22 areas, comprising over 2 million acres, spread throughout 15 states, remain pending in Congress. In addition nearly 50,000,000 acres of potential recommendations are still pending in Alaska.

The Maturing NWRS Wilderness Policy

Refuge wildernesses are a mecca for those seeking a special wild experience. Active management is required to ensure that people, in their enthusiasm, do not overuse and modify the wilderness features. **Because NWRS wilderness overlays areas focused on restoration or maintenance of superior wildlife conditions, public access may necessarily be denied visitors at certain times and places.** For example, visitation to crowded seabird nesting colonies may have to be accomplished from a distance to avoid nestling exposure to predation when the startled parents flee the nests in distress. In some particularly sensitive wildlife situations, only vicarious visitation through off-site educational programs may be appropriate. Some visitors may need to be provided special pre-visit educational materials to prepare for unpredictable reactions to humans from animals such as grizzly bears. Such challenges require creative solutions by refuge staff whose responsibilities include both safeguarding and sharing vital components of our nation's natural heritage. As a rule, these highly motivated professionals are doing a commendable job given the absence of agency support and minimum level of training available to them.

An excellent compendium of wilderness management challenges, values, perspectives, needs, and approaches resulted from a conference in Athens, Georgia with the papers published as a Forest Service General Technical Report.[7] Most refuge wilderness management challenges differ from those described in this report only by degree, physical site characteristics, and the primary purposes of the underlying reserve. I recommend the essays in that report to all wilderness managers and will not offer a redundant list of problems for refuge areas.

Unique NWR Wilderness Sites

The refuge system contains unique wilderness units that offer uncommon challenges and these, I feel, should be described to you.

Island Wilderness:

Forty-one units of NWRS wilderness are comprised entirely of islands. These may include chains of hundreds or even thousands of above-water natural features, some vast islands, or a single islet of a few acres. **The Wilderness Act directed "every roadless island" within the refuge system, regardless of size, be studied, and those qualifying be recommended for wilderness designation.** In addition, several underwater portions of refuge areas in Alaska were given wilderness designation and are currently America's only marine wildernesses.

These wilderness units offer a number of difficulties for managers attempting to maintain both the wilderness character and wildlife capabilities of the areas. **Islands present a special stewardship challenge to the poorly trained and under-equipped refuge staffs. Unit size, relative isolation, physical characteristics, and the wildlife species involved, each affect the nature and intensity of impacts from the several sources.**[8] Oil spills and cleanup operations off the Northwest coast and in Alaska had severe effects on the animal denizens and their habitats in the Washington Islands Wilderness and the Wilderness Study Areas of the Alaska Maritime NWR. In the Gulf of Mexico the press of recreational boaters, commercial fishing fleets, overflights, and adventure seekers threaten Breton Island Wilderness and the largest nesting tern colony in North America. In and adjacent to the Florida Keys Wilderness, where endangered butterflies, Key deer, a tree cactus, and other species precariously hang on in refuge habitats despite relentless community development and rapidly expanding water-oriented recreation, the presence of illegal activities, such as drug smuggling, sometimes involving refuge wilderness islands, offers unique and dangerous difficulties. Add to these issues the advancing demise of Florida Bay (located immediately adjacent to the wilderness islands) due to the complex problems of the Everglades ecosystem and one finds cause for a short-handed refuge staff to appear stretched beyond reasonable limits of tolerance.

In every island wilderness, difficulties arise from remoteness to the administering refuge staff and facilities, and need for special marine/aquatic (or aircraft) equipment to ensure minimum impacts from island access. The need to monitor a minimum set of wilderness and wildlife parameters on island chains strewn over thousands of square miles of ocean, in areas famous for world class severe weather systems, outstrip the capabilities, by distances best measured in light-years. Boundary and jurisdictional issues often require special arrangements with state agencies to resolve law enforcement issues and permit maintenance of vital protective buffers for islets hosting colony nesting birds or endangered species. There is an urgent need for specially developed public education materials and programs, but current resources seldom permit refuge staff to get beyond crisis management.

In addition to the list of human-induced challenges, island wilderness areas have also experienced phenomena arising from larger, often "natural" issues. The El Niño current has caused unusual movements in the fish used as food by island nesting marine birds. This has resulted in reproductive failures, abandoned colonies, and even adult mortality. Given the low breeding rates of marine birds and mammals, such disturbances may require decades for recovery, while spin-off effects in the ecosystem are difficult and expensive to monitor. Exotics, often introduced by man, but sometimes spreading far beyond the initial locations, have caused severe, long-lasting impacts on many fragile island ecosystems. Ocean-borne perturbations coming from fly-in or swim-in biological aliens, as well as introductions from various watercraft, are often beyond the manager's information until *in situ* problems begin.

Bombs and Booms:

A special category of wilderness intrusion can be assigned to U.S. military and reserve units in refuges. These areas have been favored targets for military activities because the generally low public use results in fewer complaints. **From low-level supersonic sorties emitting overpressures**

known to damage buildings and wreck hikers' peace of mind, to practice bombing with inert dummies and actual live-fire strafing, the use of refuge system areas within and adjacent to designated wilderness and wilderness study areas can threaten the integrity of the areas and the concepts embodied in the Wilderness Act. After years of requests to find or construct alternative targets, only the prospect of imminent lawsuit, and pressure from the new and more environmentally aware Clinton Administration, finally brought an end to practice bombing using inert devices on Copalis NWR (part of the Washington Islands Wilderness). Congress has yet to come to grips with the issues raised by such activities.

Future Agenda for NWRS Wilderness

Gazing at the stars comes naturally to humans. Many people believe the future of mankind is probably to be found in new worlds of the limitless ether. However, according to basic laws of physics looking at stars from earth is looking into the past – perhaps, ultimately, to the beginning of time. This juxtaposition of past and future is, I believe, germane to natural resource management. **For the answers to many of the basic questions faced in wilderness and other natural resource management, we must look outward from our localized position as well as inward, and we must know some history.** We should make it standard practice to learn enough of the past to ensure needed improvements are made for the future.

In the limitless ether seen by my star gazing, FWS administrators and managers will:

1. Develop an agency wilderness ethos that properly weds the mandates of its land system with appropriate special guidance provided for preserving the character of designated wilderness. That ethos will be comprised of the cumulative experiences, practices, and thinking of many minds. It will be based on a clear understanding and thorough knowledge of past and present interpretations of wilderness law, and it

should be advanced in the form of formal descriptive guidelines, values, goals, techniques, and restrictions.

This new beginning should then be cultivated and nurtured as part of an holistic wildlife conservation philosophy that nests harmoniously within the ecosystem management programs of the refuge system. Some of the basic tenets and other aspects for developing this ethos exist in the early documents done by that small cadre of NWRS personnel that I spoke of earlier. Those early policy documents and the refuge wilderness handbook should be removed from their dusty storage boxes or files, refurbished, and reissued.[9] Together, they provide essential historical groundings in Wilderness Act concepts, vital definitions and interpretations, and valuable potential as basic training materials for FWS and refuge personnel. They form a solid foundation from which that agency ethos can be developed to integrate wilderness preservation and refuge system management.

2. Develop the necessary budgetary documentation and urgently seek new appropriations for the enormous and growing requirements of refuge wilderness management. The needs range from boundary surveys and posting, to inventory, monitoring, research, education, interpretation, and law enforcement. In addition, it should include mending scars acquired in the past, recovering damaged elements, initiating necessary minimum tool management actions, and preserving wilderness character. The list is *as* full as the starry desert sky over Cabeza Prieta NWR each spring. The special needs of refuge wilderness cannot be met within the letter and spirit of the Wilderness Act *unless* the NWRS supplies adequately trained and equipped personnel in sufficient numbers to reasonably cover the almost 21 million acres for which it bears direct statutory responsibility.

3. Another part of what I see is the expansion that is likely to occur in the next few years. Only 22 areas and about 2 million acres of the NWRS outside Alaska remain to be considered for wilderness designation from the original recommendations forwarded to Congress before 1974.

However, the potential for wilderness designations in Alaska refuges could more than double the current acreage of refuge wilderness. After the Alaska Lands Act was passed, refuge staff and planning teams evaluated over 52 million acres of refuge lands that are *de facto* wilderness and fully qualified for designation under the Wilderness Act.

The FWS recommendations forwarded to the Secretary of the Interior amounted to only 3,447,000 acres – less than 7 percent of the lands found to qualify for designation. This in spite of the documented preference by the refuge managers that 31.9 million acres be recommended, and the preference by the regional planning teams that 26.9 million acres be recommended.[10] The obviously deficient recommended amount was based on restrictive criteria mandated by a politically appointed FWS director nearly three years after the studies had begun. However, no wilderness recommendations for Alaska refuges have yet been forwarded from the Secretary of the Interior to the President of the United States, or from the President to the Congress. Thus, an opportunity still exists to correct the deficiencies and to complete the administrative process by having the President forward recommendations that better recognize the preferences of the refuge managers, those on-the-ground people responsible for refuge stewardship.

Yet another major opportunity exists in the NWRS to evaluate its lands and make further recommendations for wilderness designation. Of the agencies subject to the Wilderness Act, only the FWS has never adopted a policy of evaluating lands added to the refuge system since 1964 that may qualify for wilderness, or to periodically review refuge areas adjacent to designated wilderness to determine if additions are desirable. Thus, large, unroaded refuges such as Sevilleta in New Mexico, Alligator River in North Carolina, and several others that might add important new ecotypes to the Wilderness Preservation System have not been evaluated by FWS. Between 1964 and 1994 the NWRS has been enlarged by over 7 million acres outside of Alaska. With the current emphasis toward "ecosystem management," and given the high priority being placed on the protection of

biodiversity by federal land agencies, it is wholly appropriate for the FWS to adopt new policies initiating reviews of those lands. Fresh reviews are warranted for areas such as Red Rock Lakes NWR in Montana, Bitter Lakes NWR in New Mexico, and numerous other refuges where refuge acquisitions, or changes in activities on refuge lands adjacent to designated wilderness, or other circumstances, offer opportunities for expanding and improving these wilderness areas.

A New Paradigm for Refuge Management

It is widely known that many state and federal wildlife managers exhibit discomfort with wilderness concepts even though Aldo Leopold, the "father of wildlife management," and a founding father of the wilderness movement, felt no such discomfort. The paradox arises, in my view, from the game management paradigm instilled in wildlife agencies and personnel with their educational groundings. That paradigm has managers artfully creating or enhancing early seral stages of forest succession, increasing "edge" effects, and taking actions that maximize localized habitat diversity to produce on-site diversity and high yield populations of desired game animals. Increasingly, this paradigm is in disharmony with a current emphasis on halting the extinction crisis and stemming the loss of biodiversity by giving emphasis to ecosystem management.

A new paradigm is needed for the refuge system. This new model should provide for the maintenance and proper management of those portions of refuge areas that, in the past, have been unmanaged, neglected, and used only as a buffer for the developed portions of the unit. Such areas can often be managed under minimum intervention principles or in conjunction with designated wilderness areas, research natural areas, and other special value areas of the refuge. This approach offers a spectrum of management intensities to improve conditions for a broad array of migrant, endemic, and other native species, thereby improving the long-term

contribution of the NWRS to the maintenance of natural diversity. **One could term this a "holistic" wildlife management program that makes full utilization of refuge system environments and management opportunities.**

The first mandate of refuge system units is achievement of the purposes for which they were established. In designated wilderness, the preservation of wilderness character (*i.e.* where the community of life is untrammeled, affected primarily by the forces of nature with the imprint of man's works substantially unnoticeable) is a prime directive. **Wilderness designation does not alter the underlying refuge mandate, but requires management restraints to maintain nature's primacy, to keep the imprint of works of man largely unnoticeable, and to preserve the full range of natural processes.** When wilderness stewardship is viewed as one component of a holistic wildlife management program to protect and maintain the panoply of America's fish and wildlife habitats,[11] it may be viewed as less exotic than when viewed in isolation.

Wilderness as a Management Tool

Every tool used in wildlife management comes with various constraints, and wilderness is no different in that regard. Just as deer prefer "edges" and ducks need wetlands, grizzlies, desert bighorns, wolverines, and other animals require wilderness habitat for survival in any semblance of their natural communities. Much of America has been altered and opportunities for managing lands to maintain early successional stages for game species abound. Reasonably large, unfragmented tracts of late seral stage and climax vegetation are scarce and declining and yet they are essential to many species. Wilderness is one tool we have to assure those species will have places to rest and reproduce. **Wildlife managers, particularly refuge managers, should embrace wilderness as a management tool if not as a research haven, as a unique baseline resource or as a source of valuable genetic material.**

My star gazing has sent me to libraries and archives in search of histories, definitions, principles, practices, and the views of others such as Leopold, Murie, Olsen, and Hochbaum. **The information from those sources demonstrates that along with its challenges, designated wilderness in the refuge system offers managers opportunities to:**

1. Step beyond traditional management to the more complex task of facilitating the process inherent in supporting all or parts of major natural ecosystems;

2. Introduce the public to an understanding and appreciation of the fascinating processes and ecological relationships making these special places teem with communities of life, as well as expose their unrivaled beauty to the people;

3. Develop and calibrate future management techniques to restore pieces of our environmental heritage found later to be essential;

4. Evaluate land and wildlife management and other influences by man on natural community processes;

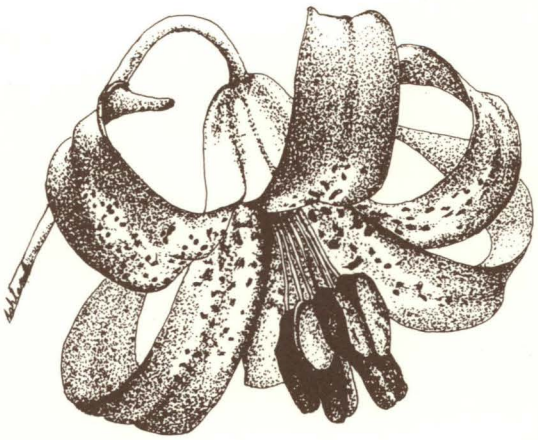
5. Gain public support and the resources to care for the NWRS and its wilderness components; and

6. Reflect on man's role in wilderness, wildlife, and ecosystem protection, and the meaning of stewardship.

Walt Whitman obviously had opportunities for that very kind of reflection before he penned the following in *Song of Myself* (sec. 31):[12]

I believe a leaf of grass is no less than the journey work of the stars,
And the pismire is equally perfect, and a grain of sand, and the egg of the wren,
And the tree-toad is a chef-d'ouvre for the highest,
And the running blackberry would adorn the parlors of heaven...
And a mouse is miracle enough to stagger sextillions of infidels....[!]

The National Wildlife Refuge System offers all of us insights and places where the seeds of inspiration can find light for germination, growth, and maturity. In my star gazing, my vision is one of opportunity for a vital segment of man's future here on planet earth.



ENDNOTES

1. Nash, Roderick. 1969. *"Wild-Deor-Ness," The Place of Wild Beasts.* pp. 34-37 in: McCloskey, Maxine E. (Ed) 1970. Wilderness: The Edge of Knowledge, Sierra Club Books, CA, NY, 303 pp.

2. Public Law 96-487, the 1980 Alaska National Interest Lands Conservation Act resulted from a decade of federal agencies' studies and planning efforts, hundreds of hearings and four years of protracted legislative debate.

3. Service, Robert W. "The Call of the Wild." In *The Spell of the Yukon* and Other Verses by Robert Service, 1907. Barse & Hopkins Publishers, NY, 126 pp.

4. See Shelford. V.E. (Ed). 1926. *Naturalist's Guide to the Americas.* Williams and Wilkins, MD; and Kendeigh, S.C. *et al.* 1950-51. *Nature Sanctuaries in the United States and Canada: A Preliminary Inventory. Living Wilderness* 15(35):1-45. Participants in designing the studies, proposing and selecting areas and assisting in writing the descriptions included personnel from the U.S. Biological Survey in the 1920s and the Fish and Wildlife Service in the later effort.

5. See Daniel H. Jantzen's portion of *A Symposium: Wilderness Plans of the Agencies,* In: Leydet, François (Ed). 1963. Tomorrow's Wilderness. Sierra Club Bks, CA, pp. 186-191. He felt that wilderness consideration in the NWRS would be limited to 13 refuge areas.

6. Buell, Noble E. 1967. The Wilderness Act and the National Wildlife Refuge System. In: McCloskey, Maxine E. and James P. Gilligan, (Eds). 1969. *Wilderness and the Quality of Life,* Sierra Club Bks, CA, pp. 25-30. Mr. Buell's report was preceded in Sept. 1966 with release of a 26-page pamphlet *The Wilderness Act and the National Wildlife Refuge System* describing each study refuge.

7. Reed, Patrick C. (Compiler). 1990. *Preparing to Manage Wilderness in the 21st Century: Proceedings of the Conference*. Southeastern Forest Experiment Station, General Technical Report SE-66, USDA, Forest Service, Dec. Papers by managers from all federal agencies that manage wilderness and many outside experts make this a valuable reference and training tool.

8. For a detailed discussion of the problems commonly encountered in managing island wilderness in the NWRS see Susan Saul's paper *No Island is an Island: Coastal Island Wilderness Management,* published in 1993.

9. *National Wildlife Refuge System Policy Update No. 12: Policy Concerning Management of Wilderness Areas.* March 11, 1977, FWS processed reproduction, 23 pp. with appendix and exhibit; and *Wilderness Handbook,* (WRH-2), BSFW processed reproduction, 783 pp. July 1970 - separate appendix volume contains legislative and administrative guidance and references, Feb., Jun., & Aug., 1970.

10. See General Accounting Office. 1989. *Alaska Wildlife Refuges: Restrictive Criteria Used to Recommend Additional Wilderness.* GAO/RCED-89-155, Sept. 29 pp. (Report to the Honorable George Miller, Chairman, Subcommittee on Water, Power and Offshore Energy Resources, Comm. on Interior and Insular Affairs, House of Representatives).

11. See the NWRS mission statement at 2 RM 1.3, U.S. Fish and Wildlife Service *Refuge Manual,* Release of March 12, 1982.

12. In Mcquade, Donald, *et al* . 1987. *The Harper American Literature, Volume 1.* Harper and Row, Publ., NY, p. 2354.

Wilderness Resource Distinguished Lectureships

1977	Senator Frank Church	Wilderness in a Balanced Land-Use Framework
1978	Roderick Nash	Wilderness Management: A Contradiction in Terms?
1979	Cecil D. Andrus	Reorganization and the Department of Natural Resources: Implications for Wilderness
1980	Patrick F. Noonan	Preserving America's Natural Heritage in the Decade of the Eighties
1981	Russell E. Dickenson	Wilderness Values in the National Parks
1982	Michael Frome	Battle for the Wilderness: Our Forever Conflict?
1983	Wilderness Conference	Issues on Wilderness Management (not a publication)
1984	Brock Evans	In Celebration of Wilderness: The Progress and the Promise
1987	Jay D. Hair	Wilderness: Promises, Poems, and Pragmatism
1988	Ian Player	Using Wilderness Experience to Enhance Human Potential
1989	(Chief) Oren Lyons	Wilderness in Native American Culture

1992	William A. Worf	A Vision for Wildernesses in the National Forests
1992	Roger Contor	A Vision for Wilderness in the National Parks
1994	Bill Reffalt	A Vision for Wilderness in the National Wildlife Refuge System

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