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International Journal of Wilderness

The *International Journal of Wilderness* links wilderness professionals, scientists, educators, environmentalists, and interested citizens worldwide with a forum for reporting and discussing wilderness ideas and events; inspirational ideas; planning, management, and allocation strategies; education; and research and policy aspects of wilderness stewardship.

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Wilderness Passion Abounds Here

By Michelle S. Mazzola, Managing Editor

LIKE MOST PEOPLE employed in the natural resource field, the *IJW* staff does not serve for the money. We do it because we have a "passion for wilderness." In 1994 a core group of wilderness professionals got together and said, "Wouldn't it be great if we could start a professional journal focused just on wilderness?" Not one of us had an inkling what a financial challenge and significant time commitment it would require ... but it wouldn't have mattered because we were passionate about the cause.

Our team of executive editors is made up of volunteers who each make a substantial time commitment in seeking, securing, and reviewing manuscripts. We are all practicing wilderness professionals who "walk the talk." No ivory towers here; we each get our feet muddy and our faces sunburned exploring the wilderness every year.

"Last year I spent 40 days in wilderness. This began on New Year's eve in the Kingston Peak Wilderness of California helping my wilderness guide friend, Marilyn Riley run a vision quest. (She subsequently canceled her April trip so we could get married.) Spending more time in wilderness helping Marilyn is now a bonus to two weeks or more of wilderness each year on my own working with at-risk youth. I enjoy helping youth and others from urban backgrounds to appreciate and trust in nature."

—John C. Hendee, Editor-in-Chief

"My backyard playground is the Scapegoat Wilderness in Montana, whose majestic, snow-covered peaks I see each day as I drive to my office in Missoula. I also enjoy BLM proposed wilderness in the Garnet Range of Montana and the Frank Church-River of No Return Wilderness in Idaho. During the summer before last I hiked 80 miles through the Frank with a scientist from Taiwan and our two 13-year-old sons. I also floated the full 180 miles along the Middle and Main Forks of the Salmon River. This past December I undertook an international wilderness visit, north of the Arctic Circle in Finland, learning the traditional Finnish ways to camp and travel in the Arctic climate."

—Alan E. Watson, Executive Editor (Science and Research)

"Last year I flew in excess of 100,000 miles advocating wilderness and wildland area designation in the Western Ghats in southern India, Baviaanskloof Wilderness Area in Eastern Cape (South Africa), Umfolosi Wilderness Area (South Africa), Kaokoveld on the Namibian-Angolan border, plus my backyard ... the Sespe Wilderness in the Los Padres National Forest. My recent endeavors have included wilderness treks and camping with aboriginal people throughout the world."

—Vance G. Martin Executive Editor (International)

"My summer weekends are spent hiking and birdwatching in wilderness areas throughout the Pacific Northwest. Preferring solitude, I shy away from the popular sites in the Alpine Lakes wilderness that require a permit acquired months in advance. During the summer before last I averaged 10 to 20 miles per weekend exploring the wilderness and wildland areas in Washington State. I place tremendous value on living two miles from a wilderness trailhead. I grew up hiking in the Breadloaf Wilderness in Vermont, before it was officially designated. My daily commute to work provides breathtaking views into the high peaks of the Stuart Range and Glacier Peaks Wildernesses."

—Michelle S. Mazzola
Managing and Production Editor

Article author and *IJW* managing editor Michelle S. Mazzola.

"I've visited the Kakwa Recreation/Wilderness Area in British Columbia, Canada, and put up a new climbing route on Mt. Ida. I have also been hiking on the Alexander MacKenzie Trail, climbed in the Canadian Rockies, and in the Mt. Robson area of British Columbia. In addition, I participated in a Fulbright Senior Scholar study in Finland last summer initiating a wilderness-based research effort."

—Alan W. Ewert
Executive Editor (Education and Communication)

"I spend time hiking with my young family in the Salmon Huckleberry Wilderness area and Mount St. Helens Volcanic National Monument outside of Portland, Oregon. On days when there is no time for a wildland hike, I look out my window at Mt. Hood—the sentinel of the wild places I love. My heart beats slower as my daydream turns to running water. Cold, clean water. Rain dripping from the trees and plants. Water forming into rivulets into streams, into waterfalls, nourishing everyone and everything with its life."

—Margaret Petersen, Executive Editor (Stewardship)

In mid-1995 we put forth the inaugural issue of *IJW* Three years later we have fine-tuned the product based on what you've told us you wanted. Our target audience has remained the same—an international voice integrating wilderness and wildland concerns of scientists, planners, managers, educators, and citizen environmentalists, worldwide. We invite you to join the wilderness dialogue with us, expand your networks, and send us your feedback, ideas, and materials. **IJW**

Soul of the Wilderness Consumption Gone Wild

By Rick Clugston

E.F. SCHUMACHER, is his book *Small Is Beautiful*, once observed that the destruction of the wilderness, and environmental deterioration generally, arises not from a lack of information, money, or scientific certainty, but "stems from the lifestyle of the modern world, which in turn arises from its basic beliefs." The belief that wilderness has value only when transformed into useful, marketable products is deep within the American psyche.

When the pilgrims arrived in Massachusetts, they saw the surrounding wilderness as the abode of Satan. Such wild and evil nature would only be pleasing to God if it was conquered, tamed, and put to good use. While we no longer view the world strictly through such eyes, wild nature still has little standing, and it is being conquered and consumed to produce useful goods at an ever-increasing rate. Max Weber, the father of sociology, observed that the Protestant ethic and the spirit of capitalism were inextricably intertwined: neither had much use for unexploited nature nor any respect for the integrity of ecosystems and the intrinsic worth of other creatures. This ethos is embedded fully in our economic order and must be dramatically shifted to a greater ecospiritual sensibility if we are to appreciate and protect the wild, as well as preserve our souls.

Consumerism Is Destroying the Wilderness and Us!

Our American culture is dominated by an incessant stream of messages (particularly in advertising) telling us that the good life can only be achieved by owning and consuming more. To be normal and acceptable in our culture is to seek status and material acquisitions. As Robert Bellah observed in *Habits of the Heart*, "That happiness is to be attained through limitless material acquisition is denied by every religion and philosophy known to man, but is preached incessantly by every American television set." Wild nature is viewed as a commodity—a reservoir of natural resources to be exploited for human profit and pleasure—not as a community to which we belong and have moral obligations.

We have been reduced to such a view of nature because our sciences and economics represent reality as insensible, lifeless matter, congealed through chance combinations that confer adaptive advantage. From such senseless matter, we arise—atomistic egos focused on gratifying a range of physiological needs (mostly oral and genital, according to Freud). Modern consumer society is structured to refine the array of gratifications available to us, and to increase wealth so all can partake of the great feast available at the biggest shopping mall and entertainment center.

Article author Rick Clugston.

This obsession with owning and consuming more is driving whole worlds of life, consciousness, and experience into extinction. Animal and plant species, indigenous cultures, languages, local life ways, and ecosystems are being destroyed to fill our shopping malls (and television commercials), mostly with stuff that does not really satisfy our souls.

We Need a Transformation to Spiritual Ecology

The human soul is a wild species connected genetically, and through an often hidden sympathy, with the animals, flowers, rivers, and stones. From an ecospiritual perspective, the good life lies in waking up to our deep interconnections with all that is, and in living a lifestyle that is sufficient materially, but that focuses on nurturing and enhancing the life possibilities for the entire Earth community.

From this perspective the universe, including all natural phenomena and all living beings, is a psychic-spiritual as well as a material-physical reality. Within the dynamic activity of natural processes—the whirling of subatomic mass/energy the metabolism of cells, individual development, and the course of evolution—there is a deep flow of life and feeling, a mysterious presence that breathes and pulses within the energies and forms of the universe, creating and sustaining them and giving them the impetus to develop. Mystics, philosophers, prophets, and poets have called this ground of being by many names—the living God, Christ, Allah, Brahman, the Tao, the Fertile Void—and they have described their revelatory experiences with

this great radiant presence and creative impulse animating all things. Wild nature and our innermost human nature also reveal this presence.

Ecospiritual sensibilities resonate to the life and feeling that exists in nature. Albert Schweitzer termed such sensibilities "reverence for life." What Schweitzer experienced as he passed through the herd of hippos on the Ogowe River was the crystallization of such a relationship to the life around him. The German word for reverence, *Erfurcht*, carries the connotation of awed humility in the face of a vast and mysterious power. Schweitzer experienced the universe as alive with the divine: Each individual creature became "sacred," possessed of a "will to live," and deserving of deep moral consideration.

Sensing this "will to live" means awakening to the "thou" in everything. There are no longer any "things," no brute, senseless objects, no world of it, in Martin Buber's terms. Existence becomes, as Thomas Berry describes in the book *The Dream of the Earth*, "a communion of subjects, not a collection of objects." Everything is living, unfolding, with presence, destiny, and integrity. The wilderness is a sacred community, home to our imaginations. To violate the integrity of individuals or natural communities by exploiting them or even failing to recognize their sacred quality is "to disrupt the total order of the universe, for reverence will be total or it will not be at all," according to Berry

The Process of Waking Up to New Reality

Our major task in life is to awaken to this ecospiritual reality and to live in accordance with its principles or laws. Most generally this means sensing, directly and immediately, the flow of life and feeling in all of nature, and living in a way that is optimally life enhancing for all members of the Earth community. Preserving wilderness is a demonstration and ideal model to guide this awakening—and extension of ecospirituality in our daily life and culture.

How can we accomplish such a transformation? We awaken through embracing and consciously refining the natural process of transformation. This process operates in human beings, pushing the maturing individual toward a more encompassing identity Successful passage through the stages of human development requires the continual "transcendence" of more limited forms of being to higher levels of reasoning and relatedness to others. This movement is prompted by a natural process of crisis and transformation in which each individual dies to an old, no longer viable identity and is reborn into a new, broader, and deeper perspective.

Most cultures contain rituals designed to mediate the transition to different life stages, such as adolescence to adulthood, and through the mid-life crisis. These rituals provide support and guidance for persons undergoing such transitions, and interpret their necessity and meaning. Some of these rituals, rather than just responding to naturally occurring crises of change, induce such crises in order to bring about desired changes in persons. These rituals of transformation follow an essential process: The individual, after careful preparation, journeys to a place where the old self is let go and a new can enter. From this encounter, the individual returns to the community, where this experience is interpreted and a new identity is granted. Thus, the person sets out to die and be reborn into a wiser and more compassionate identity

A Hero/Heroine's Journey to Ecospirituality

As a person comes to understand and embrace the natural transformative process, he or she may awaken to the ecospiritual reality. Each person has a destiny or vocation within this ecological context—a configuration of tasks, roles, and relationships that awaken her or him to a deep sense of meaning and vitality. The purpose of life is to realize this destiny Following this call draws the individual (as described by Joseph Campbell) into the trials and ordeals of a heroic journey—ultimately to a confrontation with death. But by following it a person trades in "neurotic" suffering—the suffering that comes from living within a false sense of self and reality (e.g., consumerism)—for the legitimate, productive suffering and the authentic joy of following the voice of conscience—or in ecopsychologist Ted Roszak's terms, the voice of the Earth.

The tests and trials of the journey are both universal and distinctly personal. One must travel into the wilderness, both within and without. One is required to endure temptation without succumbing, to persist in the face of great fear and doubt, and to master, then break free from, convention and follow one's heart. One is also called to make sacrifices and care for others.

Whether a person moves toward this sense of deep interconnection with the natural (including human) community or away from it into a more bitter, alienated, and dead existence depends significantly on how that person exercises his or her will. The desires one encourages and indulges, what one believes and attends to, and ones courage in acting morally and compassionately—all are consequential in bringing one closer (or pushing one farther) from this sense of radiant presence and vital connection to all that is. Yet it depends on much outside the individuals control (e.g., on grace or fate).

This obsession with owning and consuming more is driving whole worlds of life, consciousness, and experience into extinction.

Sustainability and Individual and Societal Transformation

We are losing both wild nature and our souls as cities sprawl, population surges, and the artificial and virtual reality of

expanding consumerism penetrates every global market. A preoccupation with economic growth and consumption is fundamentally contrary to awakening the ecological sensibility that we are striving to cultivate. A person—or a society—possessed by the craving to have more money and more things, to get ahead and be important, can no more appreciate the "oneness" of being than a clump of cancerous tissue can participate in the rhythms of a healthy body. Both have grown out of accord with the needs of the whole, seeking their own advancement without regard for others. Nor should we expect that we could sense the deeper sentience of the natural world, when in our everyday life we are cut off from this world, living in artificial surroundings, constantly manipulating nature for our advantage. To approach the world as a thing to be exploited—to be bought, manipulated, and sold for profit—is to close the channels of experience to the sacred.

In his *Encyclical on Social Concern*, Pope John Paul II observes, "There are some people—the few who possess much—who do not really succeed in 'being' because they have ... no other horizon than the multiplication or continual replacement of the things already owned with others still better .... They are hindered by the cult of 'having.' And there are others—the many who have little or nothing—who do not succeed in realizing their basic human vocation because they are deprived of essential goods."

In ecopsychology, healthy human development emerges from appreciating nature on its own terms and living harmoniously in place, that is, by creating modes of human sustenance, shelter, transportation, and entertainment that do not overly exploit, pollute, or deplete ecosystems but enhance the natural unfolding of the life community

Psychological health requires that we—in our personal lifestyle choices, political advocacy, and neighborly behavior—reduce our dependence on capital and energy-intensive (high input) consumption and refuse to use products and services that cause harm to others. Without embodying this sustainable way of living, we cannot escape deep complicity in an exploitative system. Even if we profit materially from this system, we will suffer psychologically from its evils. Making a difference for life is primarily a matter of seeing the beauty and wisdom in wild places, and of producing and consuming in ways that revitalize the soil, preserve biodiversity, treat animals well, enhance local self-reliance, and create genuine options for the poor. Such actions nourish the human spirit and sustain the life community.

Wilderness in the Balance

Thomas Berry sums it up well in a speech on spirituality and sustainability.

> *In every phase of our imaginative, aesthetic, and emotional lives we are profoundly dependent on the larger context of the surrounding world. There is no inner life without outer experience. The tragedy in the elimination of the primordial forests is not the economic but the soul-loss that is involved. For we are depriving our imagination, our emotions, and even our intellect of that overwhelming experience communicated by the wilderness. For children to live simply in contact with concrete and steel and wires and wheels and machines, for them to never experience any primordial reality or even to see the stars at night—this is a soul deprivation that diminishes the deepest of our human experiences.*

Our psychological well-being (the good life) cannot be gained at the expense of others: That which we do to others—people, animals, the Earth—we do to ourselves. Our flourishing depends on the flourishing of all, for we are, in fact, all interconnected. Beyond obtaining a certain minimum of material necessities common to us all, and those particular things necessary for the development and expression of our talents, life is impoverished by acquiring more things. If this is not clear at the individual level, it is certainly clear at the societal level where feeding consumerism will itself consume or engulf all that is natural. While this would at first seem to make wilderness more valuable as a function of its scarcity, it too will be consumed by the insatiable appetite of people and societies whose transformation, ironically, might be facilitated by the experience of it. There is an ecology of the human psyche very much in tune with the ecology of our biosphere in which awed humility and compassionate sacrifice are essential to happiness. **IJW**

Rick Clugston is executive director of the Center for Respect of Life and Environment (CRLE—an affiliate of The Humane Society of the United States.) He is also publisher and editor of Earth Ethics and directs the Secretariat of University Leaders for a Sustainable Future. Previously he was on the Human Ecology faculty at the University of Minnesota. He received his doctorate in higher education from the University of Minnesota, his master's degree in human development from the University of Chicago, and has authored many articles and book chapters on respect for life and the environment. He can be reached at CRLE, 2100 L Street NW, Washington, DC 20037, USA. E-mail: CRLE@aol.com.

Highlights from the First Latin American Congress on National Parks and Other Protected Areas

"Primer Congreso Latinoamericano de Parques Nacionales y Otras Areas Protegidas"

By Kristi de Groot

Abstract: On the northern coast of Colombia, South America, more than 650 people from all fields of natural resource conservation gathered for the First Latin American Congress on National Parks and Other Protected Areas, May 21–28, 1997. The International Union for the Conservation of Nature (IUCN), the Food and Agriculture Organization of the United Nations, and the Colombian Ministry of the Environment were the primary sponsors of the event. The official language of the congress was Spanish, which enabled a greater cross section of representatives from indigenous groups, governmental agencies, and nongovernmental organizations (NGOs) to participate. Although each Latin American country faces a diversity of protected area challenges, most are confronted by some of the following issues: communication between resident indigenous groups and the national parks and other protected areas; the need for community-based conservation and environmental education; protected area designation and management; conservation of biodiversity; and threats from deforestation, land degradation, and tourism. Situations may differ from region to region, however, and this congress offered all participating countries the opportunity to share the successes and failures of their projects. This exchange of ideas should lead to new and better practices, in turn diverging from the path of project duplication. This article will discuss a series of topics that were emphasized during the congress, and resolutions that were made by the participants that later were compiled by the staff of the Colombian National Park System.

International Guidelines for Land Designation and Management

There was substantial discussion at the First Latin American Congress on National Parks and Other Protected Areas regarding the importance of establishing protection for threatened environments of Latin America. Tropical forests, such as those that exist throughout Latin America, cover less than 10% of the Earth's surface, yet hold more than half the Earth's species of plants and animals (Wilson 1992). More than 780 areas, rich in biodiversity, have been declared protected areas throughout Latin America within the past 10 years, totaling more than 60 million hectares (150 million acres) (Castano 1997). In some cases, protected areas are clearly delineated, have management direction, and have managers with the authority to protect them. However, other areas are only protected on paper and have no marked boundaries, authority, or management direction (Borrini-Feyerabend 1997). As a result, overseer responsibilities are often falling into the hands of local groups or NGOs.

During the Congress in Santa Marta, participants were given the opportunity to visit Tayrona National Park within the Sierra Nevada de Santa Marta Mountains. *Photo by Kristi de Groot.*

Participants in the First Latin American Congress on National Parks and Other Protected Areas met on the northern coast of Colombia in Tayrona National Park, Colombia. *Photo by Kristi de Groot.*

The IUCN and Biosphere Reserves have played an integral role in Latin American countries struggling to develop and implement systems of protected areas. The IUCN definition of a protected area: "An area of land and/or sea especially dedicated to protection and maintenance of the biological diversity, as well as of the associated natural and cultural resources and handled through legal means or other effective means" (Borrini-Feyerabend 1997). An lUCN-recommended land classification system prescribes categories to describe units within a protected areas system. The six categories have sometimes been adopted without modification, and sometimes they have been adapted to fit the needs of a particular country The IUCN categories are as follows: (1) strictly protected natural reserve or wilderness area; (2) national park; (3) natural monument; (4) an area of conservation dedicated to a specific habitat or species; (5) terrestrial or aquatic landscape; and (6) protected area with managed resources (Borrini-Feyerabend 1997).

Biosphere reserves have rapidly become another important route for conservation in Latin America. Again, the exact blueprint of a biosphere reserve can be applied to an area or used as a guide. A biosphere reserve consists of a core that is strictly protected from any human manipulation. In order to protect the core area, a buffer zone exists where some manipulation, such as research, is allowed. However, no activity harmful to the core is permitted. Finally a transitional area is prescribed that can be used by local communities for extractive resources and some selective timber harvest by logging companies, but it must be maintained on a sustainable level. Conservationists throughout Latin America are increasingly turning to this model of resource protection.

Both of these systems, applied correctly, may allow for human presence, a critical consideration in the many areas inhabited by indigenous and local communities. A declaration resulting from congress discussions in Santa Marta recommends that countries employ or modify their current system to approximate such internationally accepted management systems as the IUCN categories or biosphere reserves to unify conservation efforts in Latin America (Castano 1997).

Biological Diversity

The importance of protecting biodiversity was the key to a series of presentations and discussions at the congress. Biodiversity in the tropics greatly exceeds that of temperate zones. In fact, there can be as many as 300 species of trees within one hectare (2.5 acres) of forest as there are in the vicinity of Iquitos, Peru. This same area is estimated to provide habitat to 41,000 species of insects (Terborgh 1992). In the Choco region of Colombia, there are 3,500 known plant species, but as many as 10,000 may grow there. One-fourth of these species are estimated to be endemic. Timber cultivation, by logging corporations and some locals, has depleted about three quarters (and counting) of the original richness. The wet forests of the lowlands and foothills of western Ecuador are now considered an important biodiversity source because one-fourth of approximately 10,000 species are endemic. Throughout the western reaches of the Amazon Basin, from Colombia south to Bolivia, exists what some biologists believe to be some of the most extensive flora and fauna populations of any place on Earth. The uplands along the Andean slope house the highest densities of endemic species (Wilson 1992). Latin America is literally a hotbed of biodiversity.

Goals set forth at the congress consist of a series of mechanisms for the preservation of biodiversity Beginning with the biosphere reserve concept and the designation of nucleus zones (cores), bioregions (buffer zones) may be established and interconnected by corridors to protect migration routes. Increasingly, allocated lands are of small surface areas, and corridors help to augment the overall surface area to optimize their worth. Ideally when the benefits of this type of model are witnessed, the concept will gain acceptance at the local level and spread throughout Latin America (Castano 1997).

Indigenous Groups within National Parks and Protected Areas

Approximately half of the worlds existing protected areas, and close to 80% of those found in Latin America, are inhabited by humans (Amend and Amend 1995). Until recently no consistent policies had been developed to guide authoritative actions toward resident peoples and indigenous groups living within the boundaries of national parks and protected areas.

Consequently, many of these groups have been relocated outside of park boundaries. In many cases, indigenous groups depend on forest resources for survival. The forests provide them with necessities: food, wood for shelter, tools, fuel, and wildlife and plant materials for both clothing and medicine (Sharma 1992).

Joel Jauanchi, an aspiring shaman of the Wachipaeri, an indigenous group living in the Manu Biosphere Reserve in southeastern Peru, expressed the need for people to see the forest not only as a scientific laboratory, but as a world with a spirit that people should learn to respect, because the balance of nature is dependent on it (Daily Bulletin, Primer Congreso Latinoamericano de Parques Nacionales y Otras Areas Protegidas 1997). Several other representatives of indigenous groups in Latin America spoke out at the congress on the importance of the forest to their people and their inherent rights to the land. When authorities step in and threaten these rights, tension builds over what are acceptable and unacceptable uses of the land. One method of rectifying the tension is to increase local participation in park planning and management decisions.

Several congress presentations emphasized the importance of having each country acknowledge the integral role that indigenous groups play in the preservation of the cultural and biological heritage of Latin America. Communication between indigenous people and governments is necessary for a mutual understanding of goals. Protected areas superimposed on indigenous lands or territories must allow for the continuation of the indigenous peoples fundamental right to the land, including the ability to use and manage the resources (Castano 1997).

Community-Based Conservation

Protected areas can be perceived by local groups as a form of restriction on their ability to earn a living. By including the local people in the planning process, not only will they have a potential source of income outside of extractive resources, but they will have a vested interest in conserving the area. Increased participation leads to higher levels of preservation and protection. This cooperation offers a stark contrast to the previous practice of punishment by authorities for exploitative use by locals in many areas. Increased involvement of residents in the planning and management of protected areas was discussed at the 1982 World Congress on National Parks in Bali. Acceptance of this concept by the participating conservationists and protected area managers was enthusiastic. A plea for increased consideration of the needs of the communities living next to parks has resulted in better education efforts, increased revenue sharing, and greater participation in decisions (Wells and Brandon 1993).

During the congress in Santa Marta participants were given the opportunity to visit Tayrona National Park within the Sierra Nevada de Santa Marta Mountains. They witnessed a community-oriented project, initiated near the end of 1996, centered around environmental education and training for people of the local community. Some of those local people who once exploited forest resources were trained by the National Park Service and then earned jobs as park rangers or in other positions related to the conservation of the park. Such individuals serve as models for others in the community, exemplifying the potential to make a living without depleting the rich resources of the forest.

An environmental education program for children at Tayrona National Park involves teaching methods of organic agriculture, recycling, and natural history, including the importance of the multitude of flora and fauna species. The goal of project organizers is for the children to take home their newfound knowledge and enthusiasm and relay it to their families. The programs long-term viability is still in question, however, having only been in existence for about a year. This program does link conservation with local communities and will ideally boost social and economic conditions as well as protect valuable ecosystems. Tayrona National Park is not the first example. Costa Rica, Mexico, Peru, Ecuador, and others are all working to implement projects in community-based conservation.

Poverty is a prime source of conflict in both protected areas and their areas of influence. Essential to the future of conservation is promotion of solutions to poverty-related problems. More specifically, programs to create employment opportunities in the field of conservation, such as the ones previously mentioned, would, it is hoped, lead to an overall labor conversion (Castano 1997).

Several congress presentations emphasized the importance of having each country acknowledge the integral role that indigenous groups play in the preservation of the cultural and biological heritage of Latin America.

Deforestation and Land Degradation

Deforestation of tropical forests is not just about a loss of timber, it also amounts to a loss of biodiversity, changes in climate, threats to the survival of indigenous populations, and degradation of watersheds (Sharma 1992). The issues driving this form of destruction are predominately social. Rural poverty, population growth, deficiencies of food and energy, territorial sovereignty, foreign debt, and development all lead to exploitation and degradation (Sepulveda and Edwards 1997). Agricultural expansion alone accounts for as much as 35% of deforestation in Latin America and a majority of the remaining 65% is a result of cattle ranching (Sharma 1992). Currently, about 65% of Ecuador's upland forests

The environmental education program for children at Tayrona National Park teaches methods of organic agriculture, recycling, and natural history. *Photo by Kristi de Groot.*

have been cleared or converted into plantations (Wilson 1992).

Dispersing populations over the worlds surface is an "easy" solution to overpopulated cities. However, when human populations spread into forested areas the result is devastating. In Brazil, huge numbers of people were intentionally relocated from Sao Paolo into remote forested areas. The outcome was mass burning. In fact it was so dramatic that "the people recognized three seasons, the dry, the wet, and the quemadas, or burnings" (Wilson 1992).

Land degradation affects migrating birds all along their flight ways. Migrating birds fall victim not only to environmental problems in the United States but also to those in Latin America. Most birds will fly some distance, stop to rest and eat, and then continue on to wintering or nesting and breeding grounds. To some extent, degradation of "refueling" zones also adds to their vulnerability. These birds can play an important role in pollination and seed dispersal in both nesting and wintering habitats (Sharma 1992). From the 1940s to the 1980s, population densities of migratory songbirds in the mid-Atlantic United States dropped 50%, and many species became locally extinct. One cause appears to be the accelerating destruction of the forests of the West Indies, Mexico, and Central and South America, the principal wintering grounds of many of the migrants (Wilson 1992). Protecting more lands to decrease the vulnerability of migrating birds is an important future issue of international interest and cooperation, with North American organizations becoming increasingly involved.

Protected areas can be perceived by local groups as a form of restriction on their ability to earn a living.

Tourism and Ecotourism

A key source of income for many Latin American countries is tourism. Increasingly the trend is from exploitative tourism to the currently more popular ecotourism. Advantages to this form of tourism, when applied properly, are the necessity to keep ecosystems at least somewhat intact and to protect the resources people are paying money to see. Also, a variety of job opportunities become available to local people.

Ecotourism can have both positive and negative implications for protected areas. Laguna Castillos is a protected area in Uruguay that is only accessible by boat. In 1991 tourist use erupted, and as the need for transportation into the reserve grew, local people who previously subsisted from hunting found employment in giving boat tours. From intensive entrance and exit traffic related to reserve visitation, however, the riverbanks have become highly impacted. Efforts are now underway to combat this new erosion problem with specific attention to how it affects aesthetics of the area, as well as its water quality, fish populations, and wildlife.

The goal for the future of ecotourism is to promote the flow of tourist dollars, but in a manner that is compatible with preservation objectives. Management criteria should be prescribed for the specific categories of the protected area systems and should be carefully considered in tourism planning (Castano 1997).

Recommendations and Conclusions

The First Latin American Congress on National Parks and Other Protected Areas was a successful event in a variety of ways. Groups that had never before been given the opportunity to meet with organizations from other countries were able to do so, in part because the official language was Spanish. Indigenous groups were given a voice to express a side that too often is ignored. The trials and tribulations experienced by all involved in the field of conservation were discussed, and alliances were formed for the continuation of communication. The Santa Marta *Declaration and Guide to Action*, produced by the National Park System of Colombia, was a result of this massive collaboration. A summary of needed action follows.

1.) Formulate an alliance and stimulate dialogue between governmental and nongovernmental organizations, the private sector, indigenous peoples, and local communities in and out of protected areas (interested and affected parties), in which each party will take on an appropriate role under clearly defined and approved government policies and regulations.

2.) Develop cooperation with national and international organizations that support different training programs, such as Central American Institute for Research and Training in Tropical Agriculture (CATIE) of Costa Rica, that through support from the United Nations Educational, Scientific, and Cultural Organization (UNESCO) offer training to all types of field managers.

3.) Develop management and financial plans that are not overly complex but involve cooperation between all interested parties.

4.) Designate specific indicators and criteria to monitor and determine the status and trends of protected areas.

5.) Compile collectively, publish, and make accessible information on studies of specific species, biodiversity conservation efforts, management and training techniques, etc., in order to limit negative impacts on specific species, populations, or ecosystems, and to reduce the potential for unnecessary project duplication across Latin American countries.

6.) Develop economic incentives to (a) prevent sustainable development from being sacrificed to short-term economic gains and (b) increase local values of protected areas.

Congresses, such as the one in Santa Marta, are important for many reasons, the most important of which may be communication. Exchange of information and development of a protected areas system agenda provided the chance for all parties to come together in the roles of both student and teacher. **IJW**

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FRANK CHURCH-RIVER OF NO RETURN WILDERNESS DRAFT ENVIRONMENTAL IMPACT STATEMENT COMMENT PERIOD EXTENDED

The U.S.D.A. Forest Service has extended the comment period for the Draft Environmental Impact Statement (DEIS) for the Frank Church-River of No Return Wilderness until December 1, 1998. The DEIS evaluates the effects of implementing five different alternatives and the draft plans display how the preferred alternative would be implemented. The "Frank" as most people call the area, contains over 2.3 million acres. It is the largest contiguous wilderness in the National Forest system and in the conterminous states. The area contains the entire Middle Fork Salmon River and the "Wild" segment of the Salmon River. The wilderness is also well known for its unique pre-established motorized uses including jetboats on the Salmon River and the landing of aircraft on the federal landing strips within its boundaries. Both nonconforming uses were grand-fathered by the Central Idaho Wilderness Act in 1980.

The Executive Summary of the DEIS is available in a special edition of "Frankly Speaking" the Wilderness's biannual publication on the Internet (http:www.mccall.net/pnf/fcronrwpp.html). The entire DEIS is available in CD-ROM or in paper hardcopy. To obtain copies of the documents, write to the Wilderness Coordinator, Salmon and Challis National Forests, RR 2, Box 600, Salmon, Idaho 83467, USA.

NEWS FROM THE ALDO LEOPOLD WILDERNESS RESEARCH INSTITUTE, MISSOULA, MONTANA, USA

By Vita Wright

"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

—Aldo Leopold

With the increasing demand of people recreating in protected areas, managers around the world are asking questions about how to manage recreation use, whether to limit use, and if so, when to limit use. How do managers decide when recreation use is causing unacceptable resource damage and how to restrict use to limit damage? And how do they know whether restrictions that have been implemented are effective at meeting management goals? In the mid-1980s the Limits of Acceptable Change (LAC) process was formally defined to address these types of questions. Since then, wilderness managers in the United States have implemented this process in a variety of situations.

After a decade of LAC process implementation, the Aldo Leopold Wilderness Research Institute and the University of Montana School of Forestry jointly organized a symposium to clarify LAC concepts and terminology and to discuss when the process is and is not useful. In May 1997, 12 researchers and managers with substantial LAC process experience met in Montana. The Rocky Mountain Research Station of the USDA Forest Service published a proceedings of this symposium in December 1 997 to present results of the workshop and increase utility of the LAC process.

What Is LAC and When Is It Useful?

LAC is a process that was initially developed to resolve the issue of recreational carrying capacity. Specifically, it was an attempt to address the conflict between recreation use and the resultant degradation of natural resource conditions and visitor experiences. However, it can be usefully applied to the resolution of a wide range of issues. In its most general application, the process consists of six steps: (1) agree that two or more goals are in conflict; (2) agree that all conflicting goals must be compromised; (3) establish a hierarchy of goals and identify the constraining goal; (4) write minimally acceptable standards for the constraining goal that are measurable and attainable, and monitor these standards; (5) allow the constraining goal to be compromised initially, until standards are reached; and (6) compromise the other goal(s) so that standards are never violated.

The LAC process is only applicable when conflicting goals can be compromised, and managers are willing to decide which goal will constrain the others. Users of the process must be able to establish a hierarchy among goals and set minimally acceptable conditions for the constraining issue. If these conditions are met, the LAC process can be applied to many issues other than recreation. Examples of other conflicts where this process would be potentially useful include livestock grazing versus protecting natural conditions, allowing fire to play a natural role versus losing property due to fire, and air quality versus industrial development. However, because not all recreation issues involve conflict, LAC cannot always be applied. The LAC process is one of many tools that can contribute to more enlightened planning for natural resources management.

How to Get More Information about LAC

For an in-depth discussion of the LAC process, its limitations, and when it is most useful, see S. F. McCool, and D. M. Cole, comps. 1997. Proceedings—Limits of acceptable change and related planning processes: progress and future directions. *USDA For. Serv. Gen Tech. Rep. lNT-GTR-371.*

This proceedings is organized in three parts: (1) invited papers that discuss the original intent behind LAC, evaluate experiences with LAC applications, compare LAC with similar processes, and extend the usefulness of LAC to issues beyond recreation in protected areas; (2) postsymposium synthesis papers that summarize the results of participant discussion; and (3) an annotated bibliography of references related to using the LAC process. Specific titles of manuscripts included in the proceedings were listed in the April 1997 issue of the *IJW.*

This publication and Stankey, et al. (1985, listed below) may be obtained by contacting the Aldo Leopold Wilderness Research Institute, P.O. Box 8089, Missoula, MT 59807, USA. Telephone: (406) 542-4190; fax: (406) 542-4196. E-mail: leopold_institute/rmrs_missoula@fs.fed.us.

Other publications on LAC and related planning frameworks include:

Graefe, A. R., F. R. Kuss, and J. J. Vaske. 1990. Visitor impact management: The planning framework. National Parks and Conservation Association, Washington, D.C.

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Determining Significance of Protected Areas in Cuba

Sistema Nacional De Areas Protegidas

By Reinaldo Estrada Estrada and Antonio Perera Puga

Abstract: It is estimated that 14% of Cuba remains relatively undeveloped by humans. More than 85% of these terrestrial and marine systems are now included in a national system of protected areas. A new national land classification system was adopted in 1994 to direct management of sensitive places. Currently the Cuban National Center for Protected Areas is further classifying these lands to assure appropriate protection based upon significance of the areas to Cuban ecosystems and social systems. Emphasis on protection, within the national system, is mostly on maintaining diversity and endemism.

A MANAGEMENT PRESCRIPTION for protected areas was a recent major development in the conservation history of Cuba. The classification system developed by the International Union for the Conservation of Nature (IUCN 1994) was adapted to lands in Cuba, which had had some form of protection since 1966. The purpose in doing so was to identify threatened places and more formally establish protection for areas with high biological value attached to maintenance of natural conditions. This classification established strict protection for Natural Reserves, National Parks, Ecological Reserves, Areas Containing Significant Natural Features, Managed Floral Reserves, and Faunal Reserves. Less strict protection was prescribed for Protected Natural Landscapes and Protected Areas with Managed Resources. With some modifications to IUCN categories, an explanation of this classification system follows:

1.) Natural Reserve (IUCN Category I): A terrestrial, marine, or terrestrial-marine area in its natural state and without any human population that has regional, national, or international importance; is intended mainly for protection, scientific research, and environmental monitoring activities; and has physical-geographic elements, species, communities of fauna and flora, or ecosystems of unique value or in danger of extinction that need strict protection due to their value for genetic resource conservation or their vulnerability. These are usually small areas where all human activity is prohibited except that required for administration and management.

2.) National Park (IUCN Category II): A terrestrial, marine, or terrestrial-marine area in a natural or seminatural state with little or no human population that is intended for ecological protection of one or more ecosystems of international, national, or regional importance and is managed mainly for ecosystem conservation purposes. Recreation and tourism activities may be carried out in these areas as long as they are compatible with the area objectives from an ecological and cultural viewpoint.

3.) Ecological Reserve (IUCN Category II): A terrestrial, marine, or terrestrial-marine area in its natural or seminatural state that is intended to protect the ecological integrity of ecosystems or parts of them; has international, national, or regional importance; and is managed mainly for ecosystem conservation purposes. Unlike national parks, ecological reserves do not house complete ecosystems; they are less natural and are relatively smaller. Recreation and tourism activities may be carried out in these areas as long as they are compatible with the area objectives from an ecological and cultural viewpoint.

Unlike National Parks, Ecological Reserves may be less natural and are relatively smaller. Natural regeneration in the "Los Indios" Ecological Reserve, Isla de la Juventud, Cuba. *Photo by Rosendo Martinez.*

4.) Area Containing Significant Natural Features (IUCN Category III): An area that must have one or more natural features of significant value; these features represent rare and aesthetic qualities of the landscape. The area may possess significant historical or cultural values.

The 14 National Parks contain the most important, and sometimes most extensive, preserved remnants of nature in Cuba. Alejandro de Humboldt National Park, located in northern Cuba, is the largest National Park, covering approximately 25,000 hectares (61,750 acres), with a proposal to extend to 50,000 hectares. *Photo by Lázaro Echenique.*

5.) Managed Floral Reserve (IUCN Category IV): A natural or seminatural area in need of active management interventions to achieve protection of natural elements or ecosystems to guarantee the existence and continuation of certain plant communities or floristic species. Unlike the previously mentioned categories, the managed floral reserve may exhibit ecological imbalances that require habitat or species manipulation in order to maintain optimal conditions for their recovery or adequate protection.

6.) Faunal Refuge (IUCN Category IV): A terrestrial, marine, or terrestrial-marine area where protection and management of habitats or species is essential to the subsistence of significant migrant or resident wild faunal populations. Faunal refuges need not necessarily be completely natural territories. There may be human activity linked to resource management, provided that it does not violate established regulations and it complies with the specific area objectives.

7.) Protected Natural Landscape (IUCN Category V): A terrestrial, marine, or terrestrial-marine area managed mainly for the purpose of protecting and maintaining natural conditions and environmental services. Protected natural landscapes are generally located in territories of ecological, environmental, and touristic values such as in coastal, marine, mountainous, river basin, and urban periphery areas. The value of resources may not be as critical, but they facilitate the flow of services and vital ecological processes, including acting as biological pathways, maintaining air and water purity protecting against erosion, protecting natural aesthetic values, or other functions of a similar kind.

8.) Protected Area with Managed Resources (PAMR) (IUCN Category VI): A terrestrial, marine, or terrestrial-marine area containing natural or seminatural systems with management presence to guarantee protection and maintenance of biological diversity, while providing a sustainable flow of natural products and services to satisfy local or national needs. These areas may encompass other protected areas with more strict protection.

Classifying Protected Areas by Level of Significance

Individual protected area units in Cuba have been further classified to form the basis for protection within the Cuban National System of Protected Areas (CNAP 1997; SNAP: Sistema Nacional de Areas Protegidas). Within SNAP, each unit is placed into one of three hierarchically arranged groups, based on significance. One group is the Protected Areas of National Significance (PANS), those areas that offer important international, regional, or national level values; represent important systems; are intact; are unique; are large; or are extremely complex. This designation forms the main core of SNAP. The second group includes the Protected Areas of Local Significance (PALS), areas that should be protected due to their significance but are not classified as protected areas of national significance because of their size, condition, or lack of uniqueness. The third group includes the Special Regions of Sustainable Development (SRSD), regions that, due to ecosystem fragility and economic or social importance, deserve protection through such methods as creation of interministerial coordination boards at a local level with steering responsibility, and that are managed to achieve conservation and sustainable development objectives. PANS and PALS may be included in Special Regions of Sustainable Development.

This overlay results in 80 protected land units classified as having national significance (PANS), 195 considered to have local significance (PALS), and 7 regarded as Special Regions of Sustainable Development (SRSD) with economic or social significance. The SRSD group largely includes the mountain ranges of the country (Guaniguanico, Guamuhaya, Sierra Maestra, and Nipe-Sagua-Moa-Baracoa), Zapata Swamp (the largest wetland in the Caribbean islands), and the two most extensive cay (a small, low islet formed chiefly of coral or sand) systems in the country (Los Canarreos and Sabana-Camaguey). Among the protected areas of national significance are the 14 national parks that contain the most important, and sometimes most extensive, preserved remnants of nature in Cuba.

The Goals of SNAP

The SNAP units have been classified in order to further guide stewardship efforts. The following list of SNAP goals represents firm commitments to protect the unique values of these places:

1.) Assure that these representative samples of the most important biogeographical regions and natural scenic beauty in the country are able to continue to support a natural evolutionary process, protecting in these areas the important sites for species migration.

2.) Preserve biodiversity in situ as well as its surrounding influences by protecting them from all dangerous effects derived from human actions that could damage them.

3.) Protect and preserve biotic and abiotic resources, both terrestrial and aquatic, in a way that provides a variety of long-term goods and services for the

population, always considering the vital function these resources play in regulating the environment and taking into account national and international provisions concerning the use of these resources.

4.) Stimulate and support rational and dynamic ways of sustaining human incomes in a way that improves the socioeconomic level of local populations by enforcing actions in favor of integral rural development, paying particular attention to conservation and rational use of fragile ecosystems such as mountains, wetlands, arid and semiarid zones, and island groups.

5.) Protect, rehabilitate, and manage coastal and marine environments and resources for their conservation and sustainable use.

6.) Protect and restore soils through controlled erosion, sedimentation, salinity, acidification, and other methods of impact.

7.) Preserve hydric resources through integral and rational management of hydrographic basins at or near the surface and underground.

8.) Improve forest resources so that areas fulfill their role of regulating the environment and provide stable production and reproduction of forest-cultural products.

9.) Preserve historical-cultural areas and sites that are linked to a natural environment.

10.) Preserve and rehabilitate both natural and cultural landscapes.

11.) Develop environmental education programs and disseminate information to local populations, promoting active ways for people to participate.

12.) Promote variety in recreation and tourism development, striving for compatibility between these activities and the preservation of natural values.

13.) Serve as a natural laboratory and stimulant for the accomplishment of research.

Table 1: SNAP Summary

SNAP Classifications	% of National Land Base
PANS (strict protection)	4.9
PALS (strict protection)	1.7
SNAP (strict protection total)	6.6
PANS (including PAMR)	8.6
PALS (including PAMR)	2.2
SNAP (including PAMR total)	10.8
SNAP (including SRSD)	>25.0

The Characteristics of SNAP

Cuba has 110,992 square kilometers (43,287 square miles) of land area. An estimated 14% of this territory is relatively unaltered by human actions (*sensu lato*). Strict protected areas (Natural Reserves, National Parks, Ecological Reserves, Areas Containing Significant Natural Features, Managed Floral Reserves, and Faunal Refuges) represent approximately 6.6% of the country and are usually the most inaccessible and well-preserved areas. They include the highest number of endemics, the greatest biological values, large populations and/ or high densities of important species, and the highest geomorphological and landscape values. They also constitute the most representative samples of biogeographical regions with intact ecosystems. They have a role as centers where plants and/or animals originate, and they are ecologically sensitive. The SNAP system as a whole (including SRSD) comprises over 25% of the national land base (see Table 1), and more than 85% of those lands are relatively unaltered by human actions.

SNAP includes large areas with high functional value to the country, representing the primary biodiversity and endemism cores of Cuba (namely National Parks and SRSD). Together with many small areas they exist in a mosaic of Cuban nature, characterized by high endemism and strict distribution (high local endemism), with a percentage of them being outside the big classical centers (mountain ranges, serpentines, extensive wetlands, coastal karstic terraces, cay groups, and white slate sands) and not exhibiting outstanding natural phenomena. The anthropic status existing in most of the Cuban nonmountainous territory contributes to this situation, because in many cases there remain only some relicts of relatively natural ecosystems in small and isolated pieces that hold conservation value due to their representativeness, or symbolic ecological value, as well as hold intrinsic value as relicts or endemism centers.

Another characteristic of the current system is that traditional areas (mainly Natural Reserves) are more or less contiguous with some larger units and more flexible categories (National Parks, Ecological Reserves, Protected Areas with Managed Resources) to provide more integral application of conservation principles and administrative-functional criteria as well as provide greater relevance to boundaries.

Further analysis of SNAP coverage and representativeness is underway using GIS techniques and database analyses, including examination of repetitiveness-unity effectiveness, feasibility, maturity degree, conservation degree, and an area-threat degree. These analyses will not only tell us how representative the system is, but it is also one of the criteria taken into consideration to verify the degree of significance of an area.

Preliminary analyses show that only 2 ecoregions (Sierra de la Canada and Cayeria de los Colorados), out of 54 terrestrial and 8 marine ecoregions defined for Cuba, are not represented by PANS (but both have units of protected areas of local significance in the SNAP). However, though all ecoregions are represented in

Recreation and tourism activities may occur within Ecological Reserves as long as they are compatible with ecological and cultural values. Hatibonico Ecological Reserve, the semidesert of Cuba. Photo by Reinaldo Estrada Estrada.

the SNAP, the system coverage is more critical in some ecoregions. In very extensive ecoregions such as marine ones, because the protected area(s) representing them covers only part of them, some zones of local conservation value remain outside SNAP (this is the case of some isolated reef crests in the marine shelf).

Also, in regions of less conservation interest there are some protected areas within the national system, though in many cases they are local-significance areas due to their sizes and (relatively) small magnitude of existing or remaining values. This is noticeable mainly in noncoastal plains, where in more than 50% of the cases, they are proposed just as PALS.

For other region classification systems for the country (floristic, faunistic, physicalgeographic), SNAP coverage appears satisfactory. At least 95% of flora species (mainly superior plants) and 98% of endemic and/or threatened species; 100% of endemic, native, and migrant bird evolutionary centers; centers of highest-endemism vertebrates, endangered, or rare species; the sites of highest abundance of wild fauna; and the largest sites of breeding-nestling for Cuban terrestrial vertebrate species are being represented in PANS. If the other areas of the system (areas of local significance) are considered too, the ecological coverage increases, though not significantly.

Coverage analysis for terrestrial, marine, and freshwater invertebrates and aquatic and marine vertebrates are still quite incomplete, but it appears, using habitat protection criteria and considering some indicator species, that the areas of highest diversity and endemism in these groups are represented in the SNAP. **IJW**

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Editor's Note: This article was originally written in Spanish and translated into English by a non-native English-speaking person. The executive editor worked with Kristi DeGroot of the Leopold Institute to provide this final translation. Due to the extensive translation and interpretation involved in presenting this information in English, some small errors may have occurred. The editor and the publisher wish to express gratitude to the authors for their cooperation, understanding, and confidence in publishing this article. Special thanks to Kristi for back translating to check accuracy.

—Alan E. Watson, Executive Editor

Zapata Swamp

Cuba's Largest, Wildest Wetland

By Lázaro Miguel Echenique

Abstract: In September 1996 at the Research Center of Kushiro Shitsugen National Park in Hokkaido, Japan, during a discussion with colleagues from South Africa, Asia, Latin America, and Japan, a startling event influenced my perception of the importance of Zapata Swamp, a wetland back home in Cuba, where my science study is centered.

WE WERE LOOKING at a map of the Earth with all wetlands recognized by the RAMSAR Convention (RAMSAR 1971) highlighted in red, as we were discussing the importance of wetlands of the world. As I was describing my work at Zapata Swamp it was noted that there was no red color in Cuba indicating this wetland. My colleagues asked how it was possible for such an important wetland not to be a RAMSAR site. Sadly, the reasons have nothing to do with the natural values of this wetland area. Cuba was simply not a part of the RAMSAR Convention.

This incident made me realize the importance of cooperation with the scientific community on issues related to protection of our most natural wetlands. At that time I resolved to obtain international recognition for this national Cuban treasure and work to assure its continued protection.

Located in northern Matanzas province, the 452,000-hectare (1,116,440-acre) Zapata Swamp is an amazing wilderness and one of Cuba's most important natural areas. *Photo by Bret Walker.*

Zapata Swamp

Located in northern Matanzas province, the 452,000-hectare (1,116,440-acre) Zapata Swamp is an amazing wilderness and one of the most important natural areas in Cuba. In general, this wetland has been recognized as an endemism area for birds, and it provides habitat for the Cuban crocodile. However, scientific studies have most frequently occurred in areas with greater endemism and diversity counts in the mountain regions and archipelagos of Cuba. The high endemism and diversity rates in these regions make them stand out in the national and international context, but they cannot be compared to Zapata Swamp in many other aspects. The size and naturalness, as well as its unique biogeographic attributes, make Zapata Swamp a premier unit of the Cuba National System of Protected Areas.

Zapata Swamp flora is characterized by high species richness (13% of the country's flora); however, it does not stand out for its endemism (Del Risco, et al. 1995). Nearly 900 plant species have been recognized in the swamp, with 121 of them being endemic to Cuba and 6 locally endemic (Oviedo 1995). Though it is not an area with high endemism, Zapata Swamp contains unique plant communities such as the Plant Complex of Swamp Spring (Muniz 1995). This complex is present only in this wetland of Cuba, endowing it with unique endemic properties at the flora community level. Furthermore, the ecological characteristics of this territory, which vary across subzones of the swamp and seasons of the year, provide great variety within this ecosystem.

Though less studied, Zapata Swamp is also important for its fauna diversity. For example, there are 172 species of birds (CNAP 1996). This is a significant number for the Caribbean insular region. The presence of three local endemic bird species, which are endemic genera of Zapata Swamp, and an endemic species of mammal (all of them considered critically threatened), provide this wetland with a special status. The frequency of endemic faunal species in Zapata Swamp is noteworthy due to their local significance rather than their total numbers, the criterion most commonly used when making comparisons with other areas. In this wetland is found the only endemic crocodile species of the Caribbean insular region, the Cuban crocodile. Zapata Swamp is also the only area in which the eight endemic bird genera of Cuba cohabitate.

This situation is complemented by the forest values of the region. The forest cover stands out among the most significant

Evidence of poaching and illegal logging has been detected in remote zones where canals constructed for logging early in the century make access easier. *Photo by Brett Walker.*

ones in the country. If one takes into account the history of economic assimilation endured by the Caribbean islands, which have been extorted and severely deforested since the encounter of the European culture with the Caribbean native one, it is easy to understand the relevance of Zapata Swamp, both as a bio-geographic unit and because of its forest cover. The high availability of heterogeneous habitats makes this region the reservoir of one of the largest aquatic bird communities in Cuba, with significant numbers of migratory birds coming from Canada and the United States. In other places of the country there are also large aquatic bird communities such as in the delta of Cauto River (an Ecological Reserve); however, the unique conditions existing in Zapata Swamp are not repeated elsewhere in the country Only Lanier Swamp, in the Isle of Youth, shares some common elements with Zapata Swamp, but the size, naturalness, and biogeographic importance of Lanier Swamp are much less significant.

With 257,000 hectares (634,790 acres) of forest cover, 15% of the Cuban total (Vinola 1995), Zapata Swamp stands out as one of the most important green zones in the Caribbean insular region. The area of forest cover for the whole of Jamaica and even most of the Caribbean islands (UNEP 1996) is smaller than the forest area in Zapata Swamp, which is exceeded only by Puerto Rico and the Dominican Republic. These comparisons are not aimed at minimizing the importance or contribution of other forested islands in maintaining the natural heritage of the region, which is considerable. However, because the main threat devastating the Caribbean islands is habitat loss, it is important to understand that Zapata Swamp is one of the most extensive areas that remains as a remnant of the natural richness of the West Indies.

Zapata Swamp and Wilderness Protection in Cuba

Zapata Swamp is one of the most important tourist destinations in Cuba, especially for bird-watchers from different parts of the world. Lago de Tosoros resort, Zapata, Cuba. *Photo by Brett Walker.*

Trends toward nature protection in Cuba began more than 100 years ago, though they have often been closely related to economic influences (Samek 1968). Zapata Swamp remains relatively undisturbed because of the lack of economic incentives for exploitation. In 1936, six years after the first Cuban National Park, Sierra Cristal National Park, was created, the region of Zapata Swamp, then belonging to Las Villas province (Samek 1968), was declared a National Refuge for Fishing and Hunting. This declaration was never enforced. However, the Zapata Swamp was still not exploited as much as other regions in the country because of the difficult access to its most remote zones. The aggressive advance of deforestation that has predominated at other places was avoided at Zapata Swamp.

Since 1959 some new development has occurred in the region, but conservation became and continues to be the priority. In 1974 the first formal proposal for effective protection of Zapata Swamp was made (Muniz and Munoz 1974). More recently, Zapata Swamp was designated a Special Region for Sustainable Development (SRSD) (Law—Decree 197,1995) in the Cuban National System of Protected Areas (SNAP). These SNAP units combine to make up a system of protected areas varying in local, national, international, and economic and social significance (see Estrada and Puga, this issue).

Threatening Forces for Zapata Swamp

Established Boundaries

Protected area planning for Zapata Swamp focuses on the need to preserve its precious natural resources; however, previously established boundaries make protection more complex. Consider Santo Tomas Fauna Refuge, which has existed as a conservation unit for more than 20 years. The presence of two bird species that are local endemic genera (*Cyanolimmas cerverai* and *Ferminia cerverai*) in this zone originally led to designation of the 22,122-hectare (54,641-acre) refuge. While protection of the area for these two species was motivation for protection, the distribution area is not as restricted as it was originally believed. The vegetation characteristics that exist in this refuge (swamp grasslands) extend to an area of more than 40,000 hectares (98,800 acres) that reflects the effects of fires from time to time and defines the habitat of these species. This has led to redefining this refuge by adding the adjacent area that constitutes a single ecosystem.

This reconsideration of habitat-species relationships is also occurring in the

Zapata Swamp National Park (70,205 hectares or 173,406 acres), which is contiguous with Santo Tomas Refuge. One of the most promising proposals is to combine the two areas into a single unit, thus reinforcing the intent and conservation purpose of the symbolic Zapata Swamp National Park.

Societal Influences

The current ecological coverage of protected areas in Zapata Swamp is not enough to accomplish long-term conservation objectives; however, they potentially impose an important influence on regional development policies. A fundamental threat to these places now is the absence of legal authority for protection and the pressures on their boundaries due to the severe deterioration of the Cuban economy. This situation has resulted in the search for more flexible solutions to conflicts so that the needs of all sectors are recognized, thus replacing the "close the resource" approach by another one that may comply with reality.

Threats to the integrity of areas within the swamp vary; nevertheless, there is one that seems most threatening in the minds of protection specialists. This threat is evident in almost all areas far from the urban cores, and it is based on the belief that these zones are preservable without exerting any kind of action to protect them. They are believed to be remote, apparently isolated from human influence. This situation, which is recognized as the classic paradigm of conservation (Pickett, et al. 1992), led to a situation where action was taken to protect only some of these units or their core zones. This situation, together with the scarcity of resources for management, has become a significant threat to this area. In this reserve, the largest with protective management in Cuba, numerous acts of poaching and illegal logging have been detected in zones where it was believed that human influence would never reach. During inspections, access was noted to be relatively easy via canals made since the beginning of the century for timber harvest. These canals make this area more vulnerable, necessitating vigilance and management with authority.

Tourism

Zapata Swamp is one of the most important tourist destinations in Cuba, especially for bird-watchers from different parts of the world. One of the most visited resorts for birding is in the Las Salinas sector of Zapata Swamp National Park, which is recognized as one of the most important migratory bird refuges in the country and in the Caribbean insular region. The situation that most affects tourist use of many areas in Zapata Swamp and poses a threat to natural resource values is lack of suitable infrastructure. Las Salinas does have basic services necessary to support tourist demands; however, use of other natural zones in the wetland by tourists is not closely linked to protected area management objectives, though it should be.

Local Communities

Communities closely linked to the natural resources of the territory have become involved in management. In the case of some areas such as Santo Tomas, which has a community that depends very much on local resources, pilot projects are underway to introduce sustainable use techniques for subsistence needs of the population. Until a few years ago, one of the most recurrent mistakes in protected area management was to define management direction without allowing participation by local settlers, who are the people most familiar with the area and most active in the use of resources. Even today, situations like this take place; nevertheless, change is needed and Zapata Swamp is no exception. Most of the personnel working in protected areas in the Zapata region are local settlers, so they influence opinion directly in the rest of the community.

Currently, new strategies for Zapata Swamp management depend on active community involvement. Community involvement is being introduced to all sectors and stakeholders of Zapata Swamp as part of a project of international cooperation with World Wildlife Fund (WWF) Canada and the Canadian International Development Agency (CIDA). Local communities have most of the responsibility for this project, which is making an important contribution to wilderness management in Zapata Swamp. The development of plant nurseries for sustainable development projects in communities highly dependent on protected area resources are pilot projects that have been carried out. Positive conservation results are being realized, but the increase in local interest and involvement by remote community residents in this program is itself an indication of success.

Conclusions and Implications

Zapata Swamp is a priority, in many ways, for Cuban scientists and conservationists. In fact, there are many more things we do not know about its unique character than we do know. For many reasons its lack of designation as a RAMSAR site bewildered me during my discussion with colleagues at Kushiro Shitsugen National Park in 1996. Zapata is a great candidate for this recognition, and now strong steps have been taken in this direction by the Cuban government. The government has also been working on applying the concept of a Biosphere Reserve to Zapata Swamp, which would be the sixth in the country (four are already established and another was recently approved). This

New strategies for Zapata Swamp management depend on community involvement. Cuban home, Najasa, Cuba. *Photo by Brett Walker.*

huge territory, a nature relict in the Caribbean insular region, deserves the attention of all people interested in its preservation.

Probably the most widespread information in the world about Zapata Swamp is through a description of the 1962 battle of Playa Giron (Bay of Pigs) and also the abundance of tourist information that is disseminated. This information certainly attracts attention in Zapata Swamp, but the primary interest is in letting the world know about the importance of Zapata Swamp and the responsible response of the Cuban government to assure its long-term protection. **IJW**

Until a few years ago, one of the most recurrent mistakes in protected area management was to define management direction without allowing participation by local settlers ....

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Wilderness and Civilization

Two Decades of Wilderness Higher Education at the University of Montana

By Laurie Yung, Bob Yetter,
Wayne A. Freimund, and Perry J. Brown

"Environmental reform, indeed the survival of the present ecosystem, ultimately depends on changing human values. The responsibility for higher education is clear."
—Roderick Nash

IT'S A COLD CRISP DAY in the Ninemile Valley, and the snow hangs on branches of trees in winter silence. Twenty-five students gather around wolf biologist, Mike Jimenez, as he discusses wolf ecology and the history of wolves in this valley The Ninemile Valley is also home to the Arthur Carhart National Wilderness Training Center. This is where these students spent the morning learning the process by which the United States Department of Interior (USDI) Bureau of Land Management (BLM) wilderness recommendations are currently being made in Utah. The valley lies just 30 miles west of Missoula, Montana, and the students are part of a unique education program, Wilderness and Civilization, at the University of Montana.

The Wilderness Institute

Wilderness and Civilization is part of the Wilderness Institute (WI), the 23-year-old wilderness center of the School of Forestry at the University of Montana. This institute was created in the wake of the 1974 conflict over designation of federal roadless areas. Partly in response to this controversy, a group of 19 scientists, educators, land managers, and conservationists met in May 1974 to create an organization to meet current wilderness challenges. WI was officially established in 1976 to mediate wild-land conflict and address issues of wilderness allocation and the newly emerging profession of wilderness management.

WI is appropriately situated in Missoula, Montana, amidst some of the wildest country in the lower 48 states, surrounded by 5 million acres of public wildlands. Missoula is also a center of wilderness excellence, the location of the Aldo Leopold Wilderness Research Institute, the Arthur Carhart National Wilderness Training Center, and numerous wilderness advocacy organizations.

WI seeks to meet current wilderness challenges through programs of education, research, and information dissemination. In the last two decades WI projects have dealt with a variety of topics, from wilderness management and recreation issues, to allocation and public and student education. In the late 1970s the institute drafted the proposal for the Mission Mountain Tribal Wilderness, established by the Confederated Salish and Kootenai Tribes as the first designated wilderness on tribal lands (see related article, *IJW* vol. 1, no. 1, p. 20). In the area of public and university wilderness education, the Wilderness Issues lecture series has served as a forum for the exploration of current wilderness issues for 17 years. WI is presently developing a Wilderness Information Network and facilitating the delivery of the Wilderness Management Distance Education Program (see *IJW* vol. 1, no. 3 and *IJW* vol. 2, no. 2 for articles on these projects).

Learning in the field leaves a lasting impression. *Photo by Bob Ream.*

The fall backpacking trip in the Bob Marshall Wilderness. *Photo by Bob Ream.*

The Wilderness and Civilization Program

WI's flagship educational project is Wilderness and Civilization. In 1971 its predecessor, the Round River Experiment, was established to facilitate hands-on wilderness education for undergraduate students. Named after Aldo Leopold's essay "The Round River," it followed his education philosophy. In this essay Leopold calls for a "reverse of specialization; instead of learning more and more about less and less, we must learn more about the whole biotic landscape" (1953). The idea was to give students broad-based exposure to wilderness from a variety of disciplines.

A few years later the Round River Experiment became Wilderness and Civilization, currently a year-long wilderness studies program leading to an undergraduate wilderness studies minor. Wilderness and Civilization is an interdisciplinary, classroom, and field-based immersion program. Certainly one of the first of its kind in the nation, it remains unique to this day.

The 45 days that students spend in the field make abstract concepts and ideas real, and provide the context for study of specific management and land use issues, ecological concepts, and natural history.

As the program title implies, Wilderness and Civilization is not just about wilderness, it looks at wilderness in the context of modern society. It explores the individual, community, and societal relationships with the wild. The goals of the Wilderness and Civilization program are to increase knowledge of environmental and ecological issues, especially those related to wilderness, wildlands, and wildlife; to instill understanding and appreciation of humankind's relationship with the natural world; to encourage responsible action in order to bring about meaningful change and problem-solving; and to cultivate wildland values in the individual and in society as a whole.

Courses focus on presenting different wilderness perspectives. Through exposure to a variety of viewpoints, students develop their personal wilderness values. In short, although one focus of Wilderness and Civilization is on wilderness and wildlands, these topics are also the backdrop for the exploration of each students individual land ethic.

When David Orr (1994), author of *Earth in Mind: On Education, Environment and the Human Prospect*, calls for the redesign of education, he argues that the compartmentalization of academic disciplines is a central problem. According to Orr, because "we experience nature mostly as sights, sounds, smells, touch, and tastes—as a medley of sensations that play upon us in complex ways," education about the natural world should be similarly structured.

Now preparing for its 22d year, Wilderness and Civilization combines courses from the humanities, ecological and social sciences, and management with hands-on field experiences. Students explore wilderness from cultural, historical, managerial, scientific, philosophical, and political points of view. The truly interdisciplinary nature of Wilderness and Civilization is one of the program's key strengths.

Applying the Knowledge

Wilderness and Civilization has a longstanding commitment to experiential education and application of knowledge to the real world. Recent understanding of learning supports the notion that concepts, when applied or experienced, are often better understood and retained than if they are just heard. Two major avenues for this application in Wilderness and Civilization are internships and fieldwork. Students are required to work with community organizations on a wildland project through a spring internship. This provides an opportunity to gain hands-on problem-solving experience with real-life wilderness challenges.

Field experiences are also a central element of the learning process. Wilderness and Civilization begins and ends with extended backcountry trips and takes advantage of its location with a variety of short field trips. The 45 days that students spend in the field make abstract concepts and ideas real, and provide the context for study of specific management and land use issues, ecological concepts, and natural history. For many students, the 10-day trip at the beginning of the Wilderness and Civilization program is their first extended outing in a remote area. It provides a point of reference for further study and creates a sense of community among students, faculty, and staff, which continues to develop throughout the program.

Learning Outcomes in an Immersion Program

The community aspect and group dynamics of Wilderness and Civilization serve to facilitate the learning experience. Because students go through the program as a group, certain group dynamics develop. In a recent survey, program alumni cited community structure as one of the top five valuable components of the Wilderness and Civilization experience.

The atmosphere of cohesion and community that evolves as result of the intensity of the program has tangible learning outcomes. Supported by their cohorts, students can be creative in problem solving, take intellectual risks, and learn to work on group projects effectively. Students enrolling in Wilderness and Civilization might be ranchers, recreationists, or writers from Virginia, Montana, or Japan. They might be majoring in art, wildlife biology, journalism, or any other discipline.

A large proportion of program alumni now work in conservation and carry titles such as land manager, conservationist, outdoor educator, and organic farmer. Surveys indicate that alumni not employed as environmental professionals use their well-developed land ethics in their daily lives, and a majority of them stay involved in wilderness conservation.

Wilderness and Civilization Program Courses: A Sampling

Issues in Wilderness Ecology
Wilderness and Expression (Drama)
Wildlands Community Project (Internship)
Ecological Perspectives in Native American Traditions
Beauty, Ethics, and the Environment
Economics of Wildland Preservation
Conservation of Wilderness, Wild Rivers, and National Parks
Environmental Ethics
Natural Resource Law

Alumni and Instructors on Wilderness and Civilization

"The broad spectrum of classes and the interdisciplinary nature of the program are what made Wilderness and Civilization unique. Take science or humanities classes by themselves and you may not make the connections, but taking them together in a program such as this forces you to make certain connections."

—Peter Neilsen, Environmental Health Supervisor
Missoula City/County Health Department, Missoula, Montana
1980 Wilderness and Civilization student

"My Wilderness and Civilization experience has been critical to who I am and the sorts of things I am pursuing today. It established an intellectual framework regarding Nature and our human relationship to it. My teachers and fellow students inspired and encouraged me to take an active stand for my ideals, and I saw that energetic, dedicated people really can make a difference. I saw that love of Nature is a real force, with power to change oneself, and possibly the World."

—Mollie Yoneko Matteson, writer
1985 Wilderness and Civilization student

"Wilderness and Civilization is about the community of all beings. The idea that human maturity means the growth of our ability to actualize the relatedness of all beings (this as a primary responsibility of being fully human) is at the core of our efforts in this program."

—Roger Dunsmore, professor emeritus,
Liberal Studies Department
Wilderness and Civilization instructor, 1975 to present

Backcountry travel bonds students, staff, and faculty. *Photo by Bob Ream.*

Informing Wilderness Advocates

More than ever, we are recognizing wilderness as an integrating concept for many values and disciplines. As our culture focuses more on issues of technology and consumption, the values of wilderness are increasingly pronounced, scarce, and threatened. The WI is committed to applying the breadth of resources available in the university to wilderness issues. The Wilderness and Civilization program uses the wilderness concept within the context of todays rapidly changing society, leading to informed wilderness advocates in many of society's roles. **IJW**

Laurie Yung is WI education coordinator, **Bob Yetter** is outreach coordinator, **Wayne A. Freimund** is the Arkwright Associate Professor of Wilderness Studies, and **Perry J. Brown** is forestry school dean at the University of Montana. For more information or application materials, contact Laurie Yung at the Wilderness Institute, School of Forestry, University of Montana, Missoula, MT 59812, USA. Telephone: (406) 243-5361. E-mail: lyung@forestry.umt.edu.

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Yellowstone to the Yukon (Y2Y)

Enhancing Prospects for a Conservation Initiative

By Jim Posewitz

THERE HAVE BEEN A NUMBER of conservation concepts and initiatives advanced for preservation of vast areas of the North American West. The most recent proposal is the Yellowstone to the Yukon (Y2Y) initiative. The objective of Y2Y is to preserve wildlands in the United States and Canada to ensure habitat connections supporting long-term survival of wildlife in the bioregion. Surely wilderness could be a major player in this initiative.

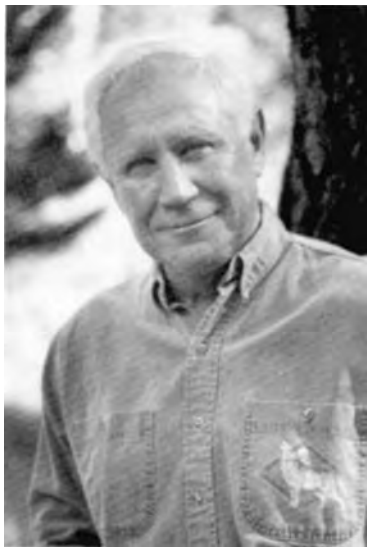
The Y2Y proposal addresses areas with wildlife already restored to a wonderful abundance but still in need of a vigorous defense by diverse conservation activists. Broad coalitions must be built of people who understand what has happened and is happening out on the ground. For example, no group of people survey the land more thoroughly each season than do the hunters; they need to be involved.

Like Y2Y, many of todays conservation initiatives run the risk of simply becoming computer-generated and computer-monitored abstractions that lose their connection to the real world. These abstractions were addressed by environmental writer Wendell Berry when he observed: "The heroes of abstraction keep galloping in on their white horses to save the planet—and they keep falling off in front of the grandstand." Berry also showed us the way to the solution when he suggested: "Our ... wish to save the planet must ... be reduced to the scale of our competence—that is, to the wish to preserve all of its humble households and neighborhoods."

Conserving wildlife is what hunters have been doing for the last half of this century. Each wildlife area is a neighborhood, each pothole or wetland a household. One group, Ducks Unlimited, has been saving areas on a continental scale for 60 years. They have conserved 8 million acres, with more than 5 million miles of nesting shoreline thus protected. If you are under 40 years of age you saw more ducks in the North American flyways in 1997 than at any time in your life!

No less than 40 regional groups joined the effort for Y2Y. But absent from the list were hunter organizations, despite their historically solid record of conservation achievement in North America. This absence of support for Y2Y from hunter organizations will hurt the chances of this important conservation initiative.

Problems with the Y2Y Proposal



Article author Jim Posewitz.

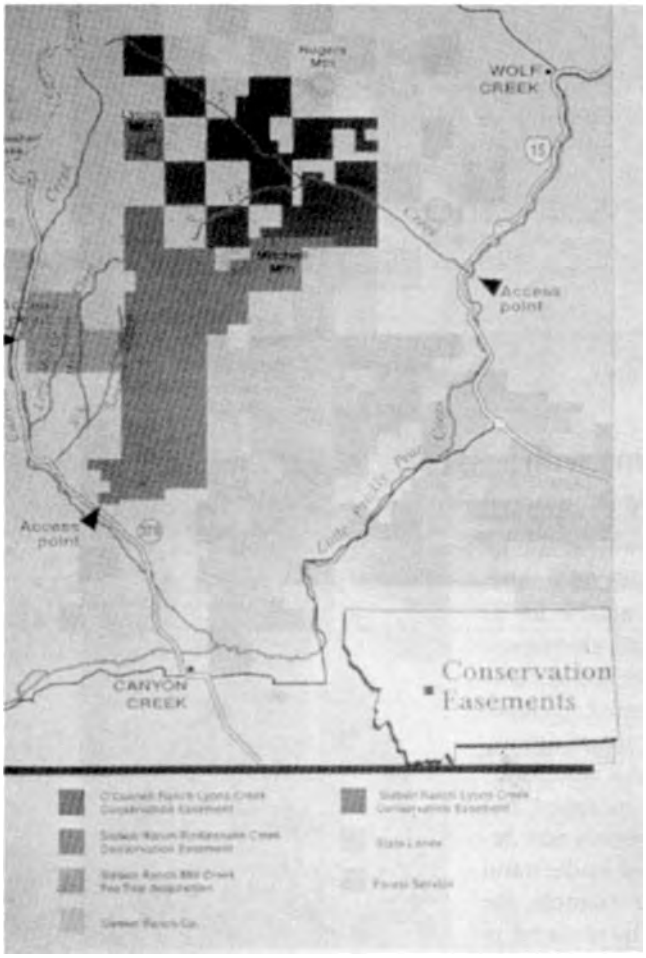
The brochure announcing the 1997 Y2Y conference was notable for its beauty and eloquence. But it revealed chronic blind spots in contemporary environmental thinking (e.g., that wildlife has recently diminished, and that we are only now beginning to understand why). For example, the Y2Y brochure stated in part: "In the early 1800s ... western ... North America was a living tapestry of richly varied landscapes ... with astonishing numbers of wide-ranging fauna. It was a delicate tapestry of intricate habitats and evolving relationships, created over tens of thousands of years by ... forces ... we are only now beginning to understand. Today, in the blink of an eye, the tapestry is unraveling. Forests are cut ... predators and prey are diminished ... changes proceed unabated, the rate of change itself accelerating."

A false premise of Y2Y involves the much earlier (late 1800–1920s) period of wildlife's dramatic decimation, followed by its remarkable restoration. Within the formula that restored wildlife are answers about how to realize conservation visions that are just as valid today. There is a somewhat arrogant assumption implied in, "we are only now beginning to understand ... ." Todays computer generation is not the first to understand the principles and art of wildlife conservation and wildland appreciation, concepts that originated with conservation giants like Leopold, Murie, Olsen, T. Roosevelt, Grinnell, Muir, Thoreau, Darling, Swift, Pittman, and Robinson.

The Rocky Mountain Front: An Example

History is illustrated along Montana's Rocky Mountain Front, a human and wildlife corridor since the late Pleistocene. Today, it is what corridor connections are all about, both in

Figure 1



theory and in reality When Europeans first saw it in 1806 it was a Blackfeet Indian, bison, and wolf ecosystem richly endowed with wildlife. One century and a year later, Theodore Roosevelt was president of the United States, and the first ranger showed up to be custodian of the new national forest. This ranger went to the place we would come to know as the Bob Marshall Ecosystem. Ranger Elers Koch left the following record: "in the fall of 1905 and again in 1906 I rode for a month with pack outfit through the wildest part of that country [South Fork of the Flathead and the Sun River] ... and with the exception of one goat never saw or got a shot at a single big game animal ... ." Another ranger, Clyde Fickes noted: "In May of 1908, 1 counted and estimated that 500-600 elk wintered on the West Fork [Sun River] licks and vicinity. That was about all the elk in that area at that time."

What Koch and Fickes were recording was how depleted wildlife had become when the 20th century began. But today this same area is now one of the most productive wildlife areas in North America. There are now in excess of 11,000 elk in the Bob Marshall Ecosystem, up to 15,000 mule deer winter along the Rocky Mountain Front, and bighorn sheep are once again abundant. Grizzly bears have been protected and managed there since 1913. Mountain lions, now managed as game animals, are more abundant than at any time this century. The notion that predators and prey are diminished is a myth, and it reflects a lack of knowledge about wildlife conservation and a lack of respect for what our predecessors achieved. How can any conservation initiative earn support if it is not based on correct assumptions and does not draw upon previously successful approaches?

Involving Hunters: A Key to Success

The recovery of wildlife along the Rocky Mountain Front was no accident, and the principles that made it possible are still valid and can strengthen the Y2Y proposal. Crucial to the recovery was the interest and investment of recreational hunters, several generations of them, leading to protection of key habitat areas. These conservationists acquired the following wildlife management areas: Beartooth (31,800 acres), Blackfoot Clearwater (65,000 acres), Blackleaf (10,000 acres), Ear Mountain (3,000 acres), Sun River (25,000 acres), and the Seiben–O'Connell project (21,271 acres). Five of these projects lie in the corridor leading from Glacier National Park south to Yellowstone, the old Pleistocene connection. These state-managed areas cover more than 243 square miles and have been augmented by private efforts on The Nature Conservancy's Pine Butte Preserve and the Boone and Crockett Club's Theodore Roosevelt Memorial Ranch (see Figure 1).

Y2Y, the concept of sustaining and reclaiming key wildlands from the Yellowstone to the Yukon, is a valid vision, and one that is too important to risk failure. If it is to prevail it must become less abstract and more real. It must build on proven principles that have worked in the past, not on revelation that ignores current facts (such as wildlife abundance) and notions that abstractions from computer models will lead the way. Finally, it needs the involvement and leadership of hunters who collectively have stimulated purchase of more crucial habitat areas than perhaps any other group.

Hunters and Wilderness Protection

So, how are hunters connected to wilderness? Hunting is an ancient activity through which humans, animals, and habitat have been directly related for eons. Through their predator-prey relationships, humans and animals have depended on one another. This relationship survives today, and is manifested in the public and private conservation achievements of hunters that go far beyond their proportionate numbers in the population. Without support of hunting organizations, few land protection proposals can succeed; with involvement and leadership by hunters, the prospects for success of conservation initiatives are greatly enhanced. Further, the strategy pursued by hunting organizations to acquire key habitat areas by public or private conservation easement or purchase has been successful in stimulating additional protection just beyond those areas. Y2Y needs the involvement and support of hunting organizations in order to succeed. The vision of expanded wilderness protection that many of us believe in also needs hunter support.

Other Stalled Initiatives

There have been two other proposals that compare with the magnitude of Y2Y: one was the Northern Rockies Ecosystem Protection Act (NREPA), and the other was known as the Big Open (BO). Both stimulated conferences, symposiums, lists of

organizational supporters, foundation participation, accolades from academics, and reams of printed material.

Developed in 1989, NREPA's goal was wilderness protection for a deserving collection of wildlands. Now approaching a full decade of effort, it has not led to any new acres being added to the wilderness system. NREPA's champions are working in a hostile environment, the U.S. Congress, and until that climate changes NREPA is not likely to advance. BO's goal was creation of a restored "Buffalo Commons" (removing fences and turning large tracts of western lands back over to native prairie and buffalo herds). This proposal has not resulted in protection of additional lands either. Both NREPA and BO concepts have merit, but neither can claim significant, permanent achievements. The time, energy, and resources consumed in their advocacy have not been measured, but they are substantial. Y2Y is still young and if its strategists are willing to learn what the land, wildlife, and conservation history have to teach, its chances for success will be greatly enhanced. **IJW**

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Y2Y, the concept of sustaining and reclaiming key wildlands from the Yellowstone to the Yukon, is a valid vision, and one that is too important to risk failure. If it is to prevail it must become less abstract and more real.

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Wilderness @ Internet Public Consultation in Cyberspace—

A Test at the Gwaii Haanas National Park Reserve and Haida Heritage Site in Canada

By Anna Gajda

Abstract: The Internet was used during a management planning process to provide interested parties with the opportunity for interactive discussions on issues related to human activities in Gwaii Haanas. This concept was conceived just as public consultation was about to begin, and use of an existing Gwaii Haanas website was the only way to meet tight timelines. The website was effective in soliciting valuable input from a few dedicated participants and increasing the overall level of public involvement. Future Internet consultations, however, will use newsgroups to increase participation and interaction among participants.

INTERNATIONAL PROTECTION EFFORTS established Gwaii Haanas National Park Reserve and Haida Heritage Site in Queen Charlotte, British Columbia, Canada in 1988 (see Figure 1). Consisting of 1,475 square kilometers (570 square miles) of north Pacific rainforest ecosystem, it was then known as South Moresby. The Haida people residing there are an integral part of this place and are equally involved with Parks Canada in Gwaii Haanas management. Although technically a terrestrial park, there are inextricable links to the marine ecosystem. The pending establishment of the proposed Gwaii Haanas Marine Conservation Area (3,467 square kilometers or 1,339 square miles) will allow staff to truly practice ecosystem-based management. There is no road access or front country in Gwaii Haanas; travel is only by water or air. The infrastructure is very limited, so visitors must be essentially self-reliant or travel with a licensed operator who is experienced in traveling in Gwaii Haanas's unpredictable waters.

Figure 1

Developing an Interactive Consultation Process for Backcountry Management

Gwaii Haanas National Park Reserve and Haida Heritage Site is currently developing a backcountry management plan. The objective of this plan is to develop integrated solutions to various issues related to human use of Gwaii Haanas. This includes use by Haida people, visitors, commercial tour operators, Gwaii Haanas staff, and fishers. Public consultation was identified as an integral part of the development of this

plan, but the traditional "present a draft" approach to consultation had not been well received during public review of Gwaii Haanas's strategic management plan. Additionally, the remoteness of Gwaii Haanas's setting presents unique challenges to ongoing communication with visitors, local stakeholders, and other interested people. The challenge was to find a consultation approach that could involve the general public and stakeholders in developing solutions to various management issues and actions.

A two-pronged consultation approach was chosen to involve the public and stakeholders in the development—rather than just review—of the plan. On a local level, brown bag lunch sessions were held weekly over a two-month period. At these sessions, members of the general public, commercial operators, and staff discussed one or two back-country issues. To engage the broader public, however, a consultation tool was sought that could mimic, to some extent, a person-to-person meeting, where people could hear what others thought about a given issue. The Internet seemed to be the answer.

Because staff had been involved in Internet discussion groups before, it seemed simple to set up a discussion group on the Internet. We soon found out, however, that Parks Canada could not respond quickly enough to our demands for an immediate start-up. We were advised that the only way to set up this Internet consultation quickly was to work through our Gwaii Haanas webpage. To maintain interaction between participants, a feedback link was created for each issue. Comments submitted by participants were posted under these feedback sections, allowing the users to share their perspectives.

To develop awareness of the consultation, letters were sent to people on our planning mailing list, to last years visitors who had indicated an interest in participating in surveys, and to all commercial operators who had been or were active in Gwaii Haanas. The letter gave the Internet addresses for our websites in both English and French, as Canada has two official languages. For those who did not have Internet access, requesting information by mail was an option. Advertisements were placed in local newspapers to encourage the public to participate in either or both consultation forums.

The Bischof Islands on the east coast of Gwaii Haanas. The vast majority of Gwaii Haanas visitors travel along this coast, because the west coast provides very few safe harbors. Photo courtesy Gwaii Haanas National Park Reserve/Haida Heritage Site.

Four Target Audiences

1.) The broad spectrum of people who were interested in and familiar with the Gwaii Haanas management regime;

2.) recent Gwaii Haanas visitors whose trip experience was still fresh in their minds;

3.) commercial tour operators whose livelihood has given them a unique and intimate knowledge of Gwaii Haanas and its visitors; and

4.) members of the local public who were concerned about Gwaii Haanas management, and how it fits into the islands' ecosystems, cultures, and economies.

By involving a wide cross-section of the public, there was hope for greater opportunity to stimulate the development of effective solutions to backcountry management issues. Parks Canada and Haida managers, as well as staff, were eager to see how a more open approach to consultation would work.

Barriers to Program Success

It was necessary to use regular mail to kickstart the consultation process, and that's where some problems began. As the envelopes were about to leave the office, Canada Post went on strike. By the time the two-week strike was over and mail started to move at a normal rate again, the Christmas season had arrived—the worst time of the year to try to engage people in consultation. By that time, local consultation had been underway for six weeks, so postponing the Internet consultation was not a reasonable option.

Because the timelines were tight for starting the Internet consultation, the webmaster had to squeeze the additional workload into his already busy schedule. The website maintenance, therefore, was not his top priority, and technical difficulties and site updates were often not addressed for several days. Participants occasionally informed staff that the system was not functioning properly However, it is suspected that there were many others who did not speak up and instead gave up on the process without participating.

An information note was considered for *IJW*'s December 1997 issue to solicit input from its readers. However, there was not enough lead time to get the note

Trail braiding on the island of Skung Gwaii (Anthony Island), a UNESCO World Heritage Site. Many visitors come to the island to see carved mortuary and memorial poles in the old village of Nunsting, but visitation is negatively impacting the natural and cultural heritage, as well as the visitor experience. *Photo courtesy Gwaii Haanas National Park Reserve/Haida Heritage Site.*

in before the publication deadline, and thus the potential for valuable peer input was lost in the early stages of planning.

In early January 1998, a severe ice storm hit Ottawa, Ontario, where Parks Canada's national headquarters is located. Due to severe power outages, the webmaster was unable to make any changes or additions to the Gwaii Haanas website for several weeks. This further hampered the effectiveness of the process.

Results of the Interactive Process

At the time of this writing we are still receiving Internet comments. There is also one issue remaining to be discussed in both the brown bag sessions and on the Internet. Based on current records, the levels of participation are as follows:

Brown bag local discussions:
general public = 8
commercial operators = 9
Internet:
general public = 21
commercial operators = 1
Mail/Fax:
general public = 7
commercial operators = 1

The level of local public input is low but similar to previous consultations. Of the 17 people who attended the brown bag sessions, most people attended at least two of the 10 sessions, and several people attended all sessions. There were seven people who participated by mail or fax. Given the increasing popularity of the Internet, the level of on-line participation was lower than expected. One respondent viewed use of the Internet as the federal government's way of actually avoiding public consultation. It is possible that others felt that, in promoting the Internet, we were simultaneously and systematically trying to avoid alternative communication methods.

Both consultation forums proved to be useful in soliciting input into management. The minutes from the brown bag sessions were posted on the Internet, which provided off-islanders with local perspectives. In comparing the two types of forums, however, the Internet forum was not successful in promoting discussion of the issues among participants. The majority of people responded only to issue analysis and not to the feedback posted by others. Essentially, the same types of responses were received as with a more traditional mail-in approach. In comparison, discussions at the brown bag sessions were often thought provoking and engaged most of the participants. The discussions also facilitated an increased understanding (though not necessarily increased support) for the management approaches used at Gwaii Haanas.

Lessons Learned and Future Recommendations

Based on this experience, we will use the Internet as a consultation tool again. Although the level of participation was very low, the people who participated invested a considerable amount of time in their responses. It is also clear that these people feel a strong attachment to Gwaii Haanas, and care about its future. Several participants specifically mentioned that they appreciated the Internet access and the ongoing opportunity to have input into Gwaii Haanas management. The comments received, both through the Internet and from the brown bag discussions, have provided considerable direction on how to proceed with the development of the backcountry management plan. They have given us input early in the planning process, allowing us to consider issues and approaches that may otherwise only have been identified much later in the process—when it may have been much more difficult to adapt our thinking to accommodate alternative viewpoints. From that perspective the process has been a success. And it is not over yet, as the website has become an ongoing communication tool. As drafts are developed, we will post these on the website and solicit comments.

We recommend that you consider the following if you are considering a similar consultation approach.

1.) Take the time to develop an Internet discussion or newsgroup, and integrate management resources into your schedule and budget. This technique will provide direct links to the coordinator and other participants, which should promote more discussion and useful feedback.

2.) Have the technician and coordinator work in the same office to ensure that any problems with the system are quickly addressed. Account for at least two hours of technical time per day to manage the discussion group.

3.) Be prepared to deal with breakdowns in technology—new and old. (The mail strike probably affected the level of this projects Internet participation, but the weather also affected the webmasters ability to update the system.)

4.) Consider the impact of delays on your schedule. Although this does not relate purely to Internet consultation, the risks of technological breakdowns are significant with Internet systems. Expect delays of at least one month in the overall process and consider how these delays may affect the level of participation.

5.) Use as many different approaches as possible to let people know about your consultation process, and build these notice deliveries into your consultation timeline.

By the time readers see this article, a draft plan should be on our website for review. Please encourage anyone who is interested to read the document and provide input. The website address is http://fas.sfu.ca/parkscan/gwaii. **IJW**

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INDO-PAKISTAN ISSUES QUIET DOWN-NO EFFECT ON 6TH WWC

The chairman of the 6th WWC, Mr. M. A. Partha Sarathy, assures delegates that the current issue over nuclear testing in India and Pakistan has already begun to quiet down and will likely have no effect on the 6th World Wilderness Congress (Bangalore, October 24–29, 1998). Responding to questions raised by some delegates and participants to the Congress, Mr. Sarathy fully appreciated that the recent tests by India and Pakistan are matters of concern and speculation among many in India and abroad, and careful observation from the Congress secretariat will continue.

However, he emphasized that the most recent developments in this long-standing confrontation between the two countries is seen as a sort of "tit for tat" between them, which have now been followed by both countries declaring their interest in making peace with each other and categorically declaring a "no-war" approach. The harsh realities of the economic and human devastation such a conflict would cause seems apparent to the major players involved.

In a simultaneously released statement, the president of The WILD Foundation, Vance Martin, has confirmed that the legally mandated U.S. sanctions have no effect on the Congress. "The U.S. sanctions, as currently imposed, affect bilateral aid only, and have no effect on private sector matters or on travel of federal employees," reported Mr. Martin.

As for security and safety of those coming to India, there is absolutely no need for concern. The atmosphere in India, after the initial euphoria from having "tested," has settled down to the realization that no one in the country is prepared to have his or her life drastically affected by an insecure business or social environment that results from continual and escalating conflict.

"I therefore urge all 6th WWC delegates to accept this as an assurance from a citizen of India who has been around the country, has his ears to the ground, and understands the political and social realities. I offer you a warm invitation to a beautiful and rewarding experience in India and in Bangalore, the Garden City of India, at the 6th World Wilderness Congress."

For information contact Krishnan Kutty, Executive Officer, at 6wwc@sparrl.com. Telephone: (91)(80)334-0400; fax: 334-1674. Or contact Vance G. Martin of The WILD Foundation atwild@fishnet.net.

Achieving Sustainable Conservation

The Global Environment Facility

By William Faries and Raffaello Cervigni

NOT ONE SQUARE METER of the planet has escaped the influence of humanity. Even in deep-sea habitats, fish that never make it near a dinner plate have been found containing 600 times more of the pesticide DDT than surface-dwelling species. Similar concentrations have been found for other persistent organic pollutants, which many scientists believe disrupt proper human endocrine and immune system functioning. These compounds have even made their way to Arctic ecosystems, far from the agricultural fields where they were applied. As anyone who has seen the garbage piles in the Himalayas can attest, the human fingerprint is now omnipresent. This recognition has given added impetus to global conservation efforts, but with the acknowledgment that humans must be considered a crucial part of the solution.

To better ensure that conservation activities can survive the test of time and to address the multiple concerns of human development, biodiversity protection, and the equitable sharing of resources, the national park approach is broadening to include innovative projects that attempt to capture, or secure, the value of biodiversity. Sustainable development is now being complemented by the goal of sustainable conservation.

One of the key outcomes of this evolving process has been to develop management tools such as bioregional planning, which identifies key core areas, surrounds them with transition zones, nests them within larger scale bioregions, and links them with biological corridors. Areas outside protected zones are designed to provide income and conservation incentives for local communities. This allows for a more equitable and scientifically appropriate balance between conservation and development. Without these efforts, ecosystem values may go unrecognized, and the environment will constantly be at risk from development priorities that are, in the long run, unsustainable.

This recognition of the links between the environment and sustainable development was clearly reflected in the creation of the Convention on Biological Diversity (CBD), signed at the Earth Summit in Rio de Janeiro, Brazil, in 1992. The CBD is the worlds premier treaty addressing biodiversity loss, with its three mutually reinforcing objectives—conservation, sustainable use, and equitable sharing of benefits from biodiversity—serving as the new standard by which successful environmental practices are judged. As the interim financial mechanism of the CBD, the Global Environment Facility (GEF) provides assistance to developing country Parties to the Convention through a variety of traditional as well as innovative programs and projects.

Article coauthor William Faries.

In Costa Rica, a partnership between the GEF, Institue Nacional de Biodiversidad (INBio), the national government, and bilateral donors seeks to demonstrate that by promoting local capacity for collecting and systematically cataloging information about species, the value of biological diversity and the marketability of biodiversity services will improve. In South Africa's Cape Peninsula, invasive alien species (especially the tree *Acacia cyclops*) have the potential to spread and eliminate the regions natural vegetation almost entirely. The GEF is complementing domestic resources to support eradication of alien species through a combination of biological, chemical, and mechanical methods. As we approach the 21st century, more partnerships based on the principles of the CBD will be needed to integrate the parallel goals of sustainable development and increased investment in biological capital.

Addressing the Challenge with Implementation Strategies

Global economic integration, the revolution in communications technology, and a growing recognition of the planetary nature of the biodiversity problem offer unprecedented opportunities for establishing new partnerships for conservation and sustainable use. In some cases, moving toward sustainability requires a devolution of control over natural resources. In these situations, central governments can best support effective management of biodiversity not through direct engagement, but instead by creating incentive frameworks that lead or allow

other stakeholders to undertake conservation or sustainable use activities.

Costa Rica, for instance, has worked to design a system of national reserves that, with local planning and support, operate within the parameters of sustainability. For example, the staff of Area de Conservacion Guanacaste (ACG) in northwestern Costa Rica negotiated with a neighboring corporate orange grower, Del Oro, S.A., to receive substantial financial payments in return for biological control, a clean watershed, and the breakdown of organic waste—all benefits of the area's biodiversity. Over a period of 20 years these services were valued at $480,000. The ACG allowed Del Oro to pay for these benefits in the form of 1,200 hectares (2,964 acres) of its forested lands adjacent to the ACG. This form of payment is not only easier for the company, but it allows the ACG to obtain an important and previously unincluded forest on the interface between dry forest and rainforest. It also permits the ACG to use its scarce cash budget for its conservation and educational programs, which might otherwise go unfunded.

This project is one of many that the ACG has developed to move itself from a costly public good to that of a sustainable, revenue-earning institution. Today, all of the operating costs for the ACG, 2% of Costa Rica's land area, are met by a combination of endowment earnings, cash, and barter payments for services. This entrepreneurial approach to conservation is the latest effort to translate the benefits of environmental services into a recognized, tradable commodity—thereby rendering conserved wildlands a productive sector of the local and national economy

Fortunately, Costa Rica is not alone in recognizing that biodiversity protection must begin with grassroots support. Through a number of innovative programs, Curitiba, Brazil, has become a model of how to manage urban sprawl and pollution, while in Zimbabwe, the CAMPFIRE program (Communal Areas Management Programme for Indigenous Resources) has increased the incentive for conservation and significantly raised personal incomes in rural communities.

These efforts to sustainably use biological resources in the buffer zone of protected areas and elsewhere are clearly a promising avenue for conservation. Even in the best of situations, however, there may be a number of barriers that local stakeholders must overcome to tap into the full range of benefits that biodiversity use may offer. These have to do with access to output and credit markets, availability of adequate human and institutional capacity, preservation of traditional knowledge on natural resource use, a reliable transportation infrastructure, and dissemination of contemporary technological innovations. Fortunately, a number of local governments, nongovernmental organizations, businesses, and academics have begun to focus on supporting stakeholders in overcoming the barriers that prevent realization of the economic potential of biodiversity use. Through these cooperative efforts, the global challenge of biodiversity loss may finally be met. **IJW**

Global economic integration, the revolution in communications technology, and a growing recognition of the planetary nature of the biodiversity problem offer unprecedented opportunities for establishing new partnerships for conservation and sustainable use.

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The GEF provides grants and concessional funds to developing countries for projects and activities designed to protect the global environment. GEF resources address climate change, biological diversity, international waters issues, and the depletion of the ozone layer. Activities concerning land degradation, primarily desertification and deforestation, are also eligible for funding.

Three agencies implement GEF projects: the United Nations Development Programme, the United Nations Environment Programme, and the World Bank.

Neotropical Migratory Bird Conservation in Latin America

By Megan Hill

Abstract: Protection of migratory bird routes and their breeding and wintering grounds poses demanding challenges to cooperating governmental and nongovernmental organizations (NGOs) in the United States and Latin America. The Partners in Flight initiative stimulated increased cooperation between the United States and Latin America, and now NGOs, such as the National Fish and Wildlife Foundation, are stimulating increased protection of critical places in Latin America.

Over 47 neotropical migratory bird conservation projects, worth nearly $5 million, have been supported in 10 Latin American countries. Yellow warbler (*Dendroka petechia*), a common Nearctic migrant. *Photo by Megan Hill.*

THE PHENOMENON OF MIGRATION—whether a 10-gram warbler traveling thousands of miles round-trip each year to the tropics, or the largest mammal on Earth, the gray whale, following the coast of North America from British Columbia, Canada, to Baja, California, USA—is fascinating to scientists and naturalists alike. Migration patterns pose many unique challenges to protection efforts because the geographic area needed by a migratory species for breeding, wintering, and migrating may be vast and require the coordinated efforts of many different players.

Even the most basic ecological information about a migratory species is difficult to gather because behavior and habitat requirements often change from the breeding grounds to the wintering grounds. For example, imagine the migration of a golden-cheeked warbler, one of the most endangered of North Americas 338 species of Nearctic migratory birds. This tiny bird breeds only on the Edward's Plateau of central Texas. In its breeding territory it prefers scrubby woodlands and needs dense stands of mature ash-juniper trees to gather nesting material. The golden-cheeked warbler migrates to Central America along a narrow corridor of forest above 1,000 meters (3,270 feet) along the Sierra Madre Occidental of Mexico—a very threatened habitat—and then winters in coniferous forests of northern Central America. As its North American habitat becomes scarce, predation by brown-headed cowbirds is more serious, and habitat loss in its wintering grounds of southern Mexico and Guatemala is a powerful threat. The population was estimated at 15,000 to 17,000 in 1974, but today it is estimated at 2,200 to 4,000 and is still declining.

History of Migratory Bird Conservation Efforts

Over the last three decades, scientists and bird-watchers alike have observed population declines in migratory birds such as the golden-cheeked warbler. The Office of Ecology of the Smithsonian Institution organized the first major symposium on neotropical migrants in April 1966 to determine "whether the drastic modification and elimination of the wintering habitat of many breeding birds in North America may be responsible for depressed levels of populations" (Karr 1995). Forty scientists—the majority from the United States—participated in that conference. Most presentations were strictly science-based research papers focusing on population trends in specific geographic locations.

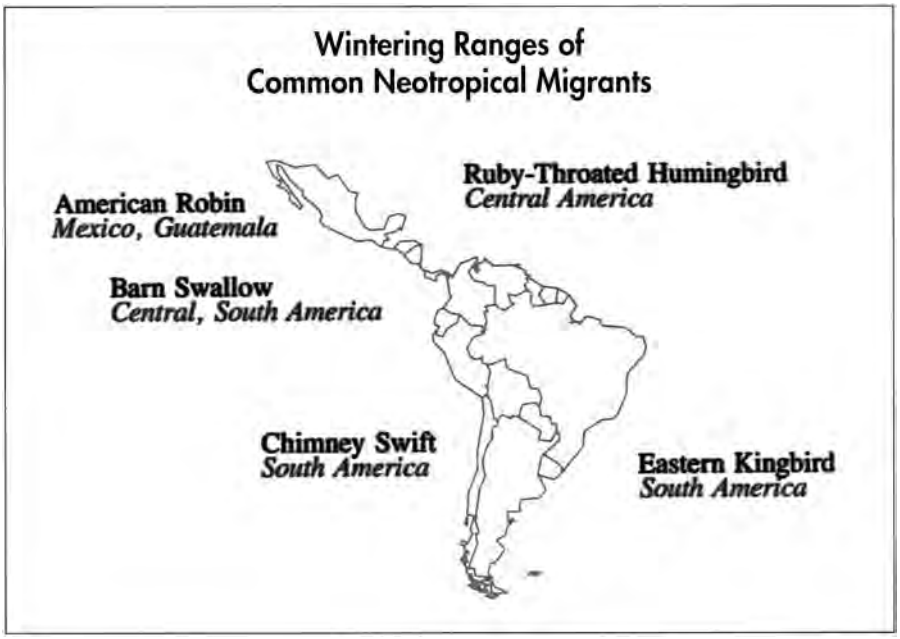
The Smithsonian took the lead again 11 years later in 1977 for a second conference on migratory birds in Front Royal, Virginia. Most presentations and papers again focused on forests, trendy behavior, and ecology topics. None reported on migrants throughout the scope of their north-south annual ranges, and no Latin American biologists participated.

After another decade had passed, a series of scientific papers (Robbins, et al. 1989; Askins, et al. 1990) forecasted a bleak outlook for neotropical migrants, and a popular science book *Where Have All the Birds Gone?* by John Terborgh (1989) warned of critical

declines in migrant populations. Long-term monitoring programs, such as the Breeding Bird Survey, indicated that populations of many neotropical migrants had declined radically since the early 1970s. In the eastern United States, for instance, 70% of the neotropical migrants and 69% of prairie-dwelling species registered population declines over this period.

In 1989 the Manomet Bird Observatory (now the Manomet Observatory for Conservation Science in Manomet, Massachusetts) hosted the next symposium on neotropical migratory birds. This time more than 325 scientists participated in paper sessions and heated discussions. No Latin American scientists were among the invited lecturers or panel discussion leaders, but for the first time a handful attended this meeting and offered their own recommendations. Also for the first time conservation topics were mentioned in presentations, mainly exploring the need for more data on populations and demographics to identify the extent to which species were declining. Even then, few participants saw the link these migratory birds provide between North and South American conservation efforts; most attitudes remained focused on a North American perspective of preserving "our" birds. Nevertheless, this conference catalyzed the inclusion of conservation and public policy issues into scientific research and gave North American researchers the opportunity to hear from Latin American colleagues about their own political and social realities.

In 1992 a major conference in Estes Park, Colorado, brought more than 700 participants together and demonstrated the growing national and international interest in migratory birds. Participants at this conference came from all 50 states, Mexico, Costa Rica, and Puerto Rico, with the goal of fostering better communication between scientists and resource managers. Later, in 1993, 27 years after the first Smithsonian conference in 1966, the first migratory bird conservation conference to be held in Latin America met in Veracruz, Mexico. This conference sparked interest among more Latin Americans on these issues and the papers presented improved the balance between technical-scientific and management-policy issues.



Neotropical bird migration patterns pose many unique challenges to protection. Wintering ranges of common neotropical migrants. ***Illustration by Megan Hill.***

Building upon the momentum gathered by this series of conferences, a major cooperative bird conservation initiative was launched—Partners in Flight.

The Partners in Flight Mechanism—Cooperating for Conservation

The series of conferences held between 1966 and 1992 on migratory bird conservation, and especially the alarming data on species declines from the Breeding Bird Survey, focused the scientific community and conservationists on the issue of migratory bird conservation. In fiscal year 1991, the U.S. Forest Service and the U.S. Fish and Wildlife Service received their first-ever financial appropriations specifically for neotropical migratory bird conservation (Stangel 1993). In 1989 and 1990 the National Fish and Wildlife Foundation (NFWF) reviewed existing conservation programs for migratory birds to identify new opportunities for conservation efforts. This assessment revealed that many groups, including federal agencies, NGOs, and universities were involved in dynamic and successful research, monitoring, management, and education programs. In most cases, however, these efforts were limited in scope, addressing small geographic areas or single species. Communication among groups was limited and coordination often lacking. Furthermore, increased interest in neotropical migrants was stimulating many new programs that lacked the benefit of learning from existing conservation efforts.

The sheer complexity of neotropical migratory bird ecology and the geographic scope of the birds' habitats suggested that a more comprehensive and coordinated approach was warranted. Effective conservation of migrants needed coordinated actions in both breeding and wintering grounds as well as along migration routes. The NFWF proposed Partners in Flight—a partnership between federal agencies, state wildlife and forest managers, NGOs, donor agencies, and the private sector—to form a comprehensive framework for coordination in research, monitoring, and management. Partners in Flight was designed to stimulate linkages between North America and Latin America and to provide a consistent and adequate source of funding to support these efforts. Such a partnership allowed the expansion of existing programs for migratory bird conservation, gave more balance to existing game and nongame conservation programs at the state level, and provided a flagship mechanism for an ecosystem-level approach to conservation, while maintaining the option for single-species approaches when necessary.

Through networks such as Partners in Flight, there are many new conservation projects to protect the habitat of our international avian ambassadors. Evidence of agricultural expansion near Lake Peten-Itza, Peten, Guatemala. *Photo by Megan Hill.*

The Partners in Flight initiative is now nearly eight years old. It has succeeded in channeling millions of dollars in funding to migratory bird conservation projects and has provided critical human resources in North and Latin America. Partners in Flight is a unique conservation partnership. For example, there is no single office or bureaucratic structure that is Partners in Flight. Instead, this partnership is made up of the sum of its individuals, who normally lend their time and expertise on a voluntary basis to form this international network of professionals working for better bird conservation. Flight Plans, which are thorough analyses of the management needs for each neotropical migrant, are underway across the United States. Five full-time coordinators, based at state wildlife agencies or with NGOs, help integrate needs for migratory bird conservation into state-and federal-level agency planning. A national level Flight Plan is due in 1999.

The Partners in Flight structure is based on working groups organized by geographic regions and technical areas such as research, monitoring, education, and international cooperation. This structure improves communication among conservation implementers and identifies priority projects and needs for conservation. The working group approach also decentralizes decision making and helps diffuse concerns over who is "in charge" of the multi-agency consortium. For example, under the leadership of the Western Working Group, a meeting was held in Autlan, Mexico, in 1995 to determine priority needs for conservation of the many western migratory species that winter in Mexico. Two years later, with the help of the NFWF, an additional $300,000 was provided by the Packard Foundation to specifically address those priorities recognized by Mexican and North American ornithologists and conservationists.

Partners in Flight has worked hard to create an atmosphere of mutual collaboration, trust, and partnership with the private sector.

Partners in Flight has worked hard to create an atmosphere of mutual collaboration, trust, and partnerships with the private sector. Forest industry companies such as Weyerhaeuser, Potlatch, Boise Cascade, and International Paper—who own 15% of the commercial forest land in the United States—know that negative environmental reputations can hurt their image and consequently sales. "Research to better understand habitat needs of individual species of birds has forced us to consider the many facets of forest management beyond timber production," says International Paper's Dr. Donna Perison. Examples of industry changes to protect birds include Potlatchs employee incentive program to identify and protect active northern goshawk nests, and their practice of leaving large clumps of submerchantable timber around snags to provide greater wildlife habitat. Even cattle ranchers, who collectively own nearly 642 million acres of land—or nearly half of the United States' 1.4 billion acres of private land—are beginning to work with Partners in Flight to establish mutually beneficial conservation relationships. Simple measures such as protecting riparian areas, letting grass come back a little higher, or improving habitat for grassland birds can make a huge difference.

NGOs in Latin America

Just as recognizing neotropical migrant declines and organizing conservation partnerships, such as the Partners in Flight initiative, took several years, efforts in Latin America are beginning to converge in the same direction. In January 1998 more than 130 ornithologists and conservationists met in Mexico City to develop a national strategy for the conservation of Mexico's 1,000 species of birds. Two similar meetings in July 1998 will begin this process in both the Caribbean and Central America.

While Partners in Flight relies on the active participation of federal- and state-level resource management agencies in the United States, in Latin America the driving force behind conservation action comes from NGOs. Most government agencies lack the funding necessary to have a physical presence in even the most important protected areas. Management

agreements between government natural resource agencies and NGOs to take over protection and administration of protected areas are increasingly common. Moreover, NGOs are finding these agreements important for strengthening their institutions and raising funds—usually from international donors—and a more effective means of achieving conservation objectives on the ground.

As in North America, finding a paying job in wildlife or protected area management is often difficult. Studying ecology or biology is often considered a luxury in countries where basic economic development—potable water, health care, education—is still needed. Over the last two decades, with the strengthening of programs such as the National University of Costa Rica's regional wildlife management program and programs at CATIE (Center of Tropical Agriculture, Research and Instruction), a solid cadre of technical specialists has been developed. Sadly, many people who receive this training investment are later left unemployed.

As more and more NGOs take over protected area management, there is an urgent need for more skills development in management—especially in the basics of running an organization. There is a lack of employees with such skills as managing people and resources, financial administration, strategic planning, project development, and proposal writing. International donors need to keep these gaps in mind when designing new projects and not ignore the need for this training as part of their projects in order to ensure the most effective use of their limited conservation dollars. Put most simply, investing in Latin American institutions protects the donors investment and guarantees long-term conservation results.

The Neotropical Migratory Bird Conservation Program

The NFWF, in partnership with the U.S. Agency for International Development (USAID), was the first to fund a major initiative for neotropical migratory bird conservation projects in Latin America. To date, more than 47 projects worth nearly $5 million have been supported in 10 Latin American countries. Using small challenge grants to catalyze even greater funding for conservation, the results to date are impressive. For example, one Guatemalan NGO, the Foundation for Eco Development (FUNDAECO), fought to get formal protection for an important area of Guatemala, Cerro San Gil, where researchers Dr. Chandler Robbins and Barbara McDowell from the Patuxent Wildlife Research Center had begun a long-term migrant monitoring program. Important to many species of migrant and resident birds, this humid tropical forest is threatened by agricultural expansion and illegal timber harvesting. After more than three years of support from NFWF to study the area's neotropical migrants and forest ecology, FUNDAECO gained formal protected status for the area. They have built and marketed a new visitor's center for researchers and ecotourists named in honor of Dr. Chandler Robbins, and are now beginning to develop an innovative program of conservation easements with the private landowners in and around the park—a first in Guatemala.

Another challenge grant in Veracruz, Mexico, is supporting the construction of a research/visitor's center along an impressive raptor migration flyway called the Rio de Rapaces, where literally thousands of migratory raptors pass in a single fall day in an awesome display of their southerly migration. Pronatura Veracruz has raised more than $75,000 in cash to match NFWF's challenge grant.

An NGO in El Salvador, SalvaNatura, is using NFWF/USAID support to document migratory birds in El Salvador's wetlands and train park guards in nature interpretation at El Salvador's most important protected area, El Impossible National Park, one of the last wilderness areas in the country. In the Caribbean, NFWF continues to support conservation in the Dominican Republic, in areas important to birds, such as the Sierra de Barohuco, with the Groupo Ecologista Tinglar and to protect habitat for the Bicknells Thrush, a threatened migrant, with researchers from the Vermont Institute of Natural Science.

Effective conservation takes strong partnerships and a broad range of skills, from training in biology to organizational management and leadership.

Conclusion

When considered individually, each conference on migratory birds held between 1966 and 1992 could be considered just another meeting, but when viewed in the aggregate one can see the evolution of the conservation issue and realize how important the process was in building the momentum for creative partnership mechanisms in conservation. It took North Americans close to 30 years to organize themselves for neotropical migratory bird conservation, and now the same kinds of networks are building in Latin America. Effective conservation takes strong partnerships and a broad range of skills, from training in biology to organizational management and leadership. With the support of national and international donors and networks like Partners in Flight, NGOs are implementing many innovative conservation projects to protect the habitat of our international avian ambassadors, such as the golden-cheeked warbler, all the way from central Texas to Sierra de las Minas, Guatemala. **IJW**

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WILDERNESS SCIENCE IN A TIME OF CHANGE CONFERENCE
MAY 23–27, 1999, IN MISSOULA, MONTANA, USA

Organized by the Aldo Leopold Wilderness Research Institute, USDA Forest Service and School of Forestry, the University of Montana, USA

Since the first National Wilderness Research Conference in 1985, wilderness science and management has increased, definitions of wilderness have evolved, and interest in wilderness has strengthened. This conference will present research results and synthesize knowledge and its management implications, leading to a state-of-the-art understanding of wilderness research. The conference will include plenary, research, and dialogue sessions discussing the interface of science and wilderness. The conference is organized around three symposia: Science for Understanding Wilderness in the Context of Larger Systems; Wilderness for Science: A Place for Inquiry; and Science for Wilderness: Improving Management.

Science for Understanding Wilderness in the Context of Larger Systems

Wilderness lands are embedded in larger ecological and social systems. Conditions within wilderness are influenced by adjacent land uses and communities. The contribution of wilderness to maintenance of regional ecological integrity depends on the types of areas designated as wilderness and their spatial distribution and connectedness. Some of the topics to be covered in this symposium include the effects of surrounding land uses, communities, and cultures on wilderness; the costs and benefits of wilderness designation; the values wilderness contributes to society and to regional biodiversity; wilderness boundary issues; and issues related to how wilderness lands should best be distributed.

Wilderness for Science: A Place for Inquiry

The unique characteristics of wilderness make it the best place to conduct certain kinds of science. Relative lack of human disturbance over large areas makes wilderness an important laboratory for understanding natural processes, particularly those that operate at large spatial scales. Remoteness, solitude, and the relative lack of technological intrusion makes wilderness a useful laboratory for studying psychological and social phenomena in such situations. This symposium focuses on the opportunities wilderness provides for scientific inquiry, as well as what has been learned from studies that utilize wilderness as a laboratory for both ecological and social study. Topics will include: studies of natural ecological systems and processes; studies of psychological and social processes in wilderness environments; studies of the individual and societal benefits of wilderness experiences; the use of wilderness as a benchmark; and issues surrounding the conduct of science in wilderness.

Science for Wilderness: Improving Management

Wilderness is to be managed such that natural conditions, cultural values, and wilderness recreational experiences are protected and preserved. This is a complex task, requiring knowledge about threats to these wilderness values and the efficacy of management interventions designed to mitigate the impacts of threats. Although hopefully informed by science, management actions are determined largely by evaluative judgements and the compromises that must be made between conflicting objectives. This symposium focuses on science directed toward improving wilderness management. Papers will address various threats to natural ecosystems, cultural values, and wilderness experiences, including recreation use, fire, grazing, exotic species, pollution, water projects, and the management of these uses and influences. Other papers will address educational programs, exotic species eradication techniques, monitoring procedures, recreation site restoration, natural fire regimes, or overgrazed meadows.

Each symposium will include reviews of wilderness topics, research papers, posters, and dialogue sessions. Program information and instructions for submitting abstracts (from July 1 to October 15, 1998) is available on the World Wide Web at www.umt.eduWildscience.

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The Community Park Ranger Program in the Cayambe-Coca Ecological Reserve

Analyzing the Effectiveness of a Wilderness Protection Strategy in Ecuador

By William H. Ulfelder

Abstract: Ecuadoran conservation organizations are vigorously pursuing strategies of local participation in protected areas management. One such initiative, The Community Park Ranger Program, was begun in 1993 in the Cayambe-Coca Ecological Reserve, Ecuador. This article describes the initiative and provides recommendations for its improvements. Specifically, it is suggested that the method of local participation be varied, an adaptive management program be implemented, objective evaluations be incorporated, and greater financial continuity be provided.

MORE THAN TWO-THIRDS of Ecuador's protected areas are directly affected by communities that depend on them for water, timber, wildlife, fibers, grazing lands, and fuel wood (Natura Foundation 1992). The Cayambe-Coca Ecological Reserve, located on the eastern slope of the Andes in northern Ecuador, is no exception. Though there are only two villages located inside the Reserves boundaries, totaling fewer than 600 residents, there are more than 85,000 people who live in the Reserves buffer zone.

Traditionally, these local communities have been excluded from participating in the Reserves management. The Ecuadorian Institute of Wildlife and Natural Areas (INEFAN) managed the Reserve and viewed local communities as the principal threat to the area. However, due to the increased strength of the Ecuadorian conservation movement in the 1980s, INEFAN began at least to consider other interests and involve conservation oriented non-governmental organizations (NGOs) in management decisions. Local communities were not asked to participate until near the end of the decade, when both INEFAN and conservation NGOs began to adopt a paradigm that included local participation in small, community-based conservation projects. These projects were often oriented toward producing economic benefits believed to help offset the local need to enter protected areas to extract natural resources (Wells and Brandon 1992; West and Brechrn 1991).

Community Park Rangers

The Sustainable Use of Biological Resources (SUBIR) Project, with support from The Nature Conservancy (Conservancy), the U.S. Agency for International Development (USAID), the Cooperative for American Relief Everywhere (CARE), and INEFAN initiated the Community Park Ranger (Ranger) Program in the Cayambe-Coca Ecological Reserve in 1993. At the time, Cayambe-Coca s management staff was small, with only a handful of park managers and technicians assigned to protect this one million-acre (^00,000 hectares) protected area. SUBIR staff believed that the Rangers would improve management of the Reserve by increasing staff, improving historically poor relations between INEFAN and local communities, and possibly providing leadership for rural villages.

Article author William Ulfelder.

Today the program is run by the Antisana Foundation, an in-country Conservancy partner, in coordination with INEFAN. There are currently 13 Rangers in Cayambe-Coca, representing 10 communities in and around the Reserve. In seven communities one ranger works half-time, and in three communities two rangers work quarter time. The community rangers role is to "Be the facilitators of a medium and long-term process of community transformation, with the support and coordination of the public and private sectors, toward self-sufficiency through collective initiative and work" (Natura Foundation 1995).

The Cayambe-Coca Ecological Reserve

The Cayambe-Coca Ecological Reserve was created in November 1970 by executive decree. The Reserve is bordered on the

Community Park guard and his family at the entrance to Cayambe-Coca Ecological Reserve near the town of Juan Mantalvo. *Photo by William Ulfelder.*

south by the Antisana Ecological Reserve and to the east by Gran Sumaco National Park. The Reserve contains nearly a dozen life zones—lowland rainforest; premontane rainforest; premontane wet forest; lower montane rainforest; lower montane wet forest; montane rainforest; montane wet forest; montane moist forest; alpine; paramo; and nival. Cayambe-Coca protects some of the last areas of wilderness habitat for such species as the spectacled bear (*Tremarctos ornatus*), Andean condor (*Vultur gryphus*), mountain tapir (*Tapirus pinchaque*), and Andean paper tree (*Polylepis spp.*). According to the original management plan, Cayambe-Cocas principal objective is "The protection of natural ecosystems, the conservation of ecological diversity, and the regulation of the environment and other items related to scientific research, environmental education and the conservation of genetic resources ... ." (Paucar and Reinoso 1978).

Evaluation of the Community Park Ranger Initiative

Was the community park ranger initiative explicitly linked to protected area threats?

A multi-institutional threats analysis performed in 1996 made it clear that Cayambe-Coca is threatened on many fronts by construction of infrastructure (roads, dams, oil and water pipelines, etc.), colonization, deforestation to open pastures and agricultural plots, overhunting, overfishing, mining, burning of the paramo, inappropriate trash disposal, and fishing with dynamite. Though a threats analysis had never been performed for the entire Reserve, the directors were aware of many of these damaging activities. At the same time, the directors knew that these threats were compounded by the fact that they had poor relations with the inhabitants of nearby communities. No dialogue existed on how the threats might be reduced. The response of the INEFAN park directors and the Conservancy was to create a conservation initiative to organize, train, and equip a group of local residents to protect the area against locally and externally generated threats and improve relations between INEFAN and local communities. Many of the Rangers work in what the park directors called "conflict zones"—areas where resource use is in conflict with management objectives, where there have been poor relations between INEFAN and communities, and/or in areas where communities have been poorly organized. The Rangers provided INEFAN management staff with an on-the-ground presence and additional eyes and ears to help report activities in the field. Many of the communities with Rangers are in remote areas, rarely visited by management staff. In the higher elevation portion of the Reserve, the Rangers were given the right to confiscate illegal firearms, fishing supplies, and other equipment. In the lower zone, Rangers were told to report prohibited activities so that full-time federal park rangers could make the necessary confiscation.

What was the planned relationship between expected socioeconomic results of the initiative and conservation objectives?

The Rangers were expected to fill leadership roles in their communities and to become catalysts in areas of community development, organization, and health services, among others. However, for most Rangers, this role is very difficult. The time they dedicate to management activities reduces the time they have to work on the family farm. All 13 Rangers are subsistence farmers. Earnings of up to $125 per month from the program provides a good source of income in a country where the average annual income is approximately $1,400 (CEPAR 1995), but it is not enough for them to cease farming and dedicate themselves full time to patrols and community outreach. Also, they are often expected to pay their own travel and food costs when attending meetings outside the village. Because subsistence agriculture must come first, the Rangers have little time to wear the other hats of park ranger and community leader. As one ranger explained, "Oftentimes I am supposed to be on patrol when the community is meeting. How can I be in two places at once?"

Another problem Rangers face is differences with other community residents. Because the Rangers report illegal activities of Reserve and buffer zone residents, they are not always held in high esteem among neighbors: While most are genuinely liked by the community (that is why they were elected to their posts), there are cases where local residents do not get along with the Ranger—further hindering their ability to lead the socioeconomic transformation described in the initiatives goal.

Were means to measure the conservation effectiveness, equity, and efficiency of the initiative developed?

The Ranger initiative, like most participatory conservation initiatives (Brown and Wyckoff-Baird 1992), has not been systematically studied to determine its impacts on biodiversity conservation and participating communities. While the rangers are expected to submit monthly reports to park directors, many stated that they do not do this, and that when they do the reports are often not read. This requirement is somewhat hindered by low literacy levels among some of the program participants. A few of the Rangers continue to provide these reports, detailing the number, type, and place of confiscations made and general information they gathered during the week. But they are the exception to the rule. The information provided by the Rangers has not been used to evaluate the programs progress, geographic coverage, impact on illegal activities, changes in attitude among local residents, or success in gathering information on wildlife they may have seen while on patrol. A more consistent monitoring program is needed to determine if the program is having the anticipated biological and socioeconomic effects.

What type of local participation existed and what were its advantages and disadvantages in relation to conservation results?

When the Ranger program began, participation was "consultative." The idea for the program was generated externally by SUBIR technical staff and later presented to the communities as a way to reduce threats and improve relations with INEFAN. The communities simply decided whether or not to participate and who to nominate for Ranger positions. The communities elected Rangers in community assemblies. However, during the implementation stage, the program became more of a "contractual" type of participation. Communities have received little information from those in charge of the program's implementation, and they have few opportunities to contribute their own ideas and suggestions to influence decisions. The Rangers provide services to INEFAN. They and their communities do not have the opportunity to influence the programs implementation.

Were the scale and type of participatory initiative appropriate to the threat's scale, type, and priority?

According to the Rangers, in order for them to have an impact on the threats they confront, their rights and responsibilities must be clarified. Confronting a poacher from outside the Reserve is very different from finding a community member deforesting in a prohibited area, or an international construction company dumping fill into the Reserve's waterways. Most of the Rangers have confined themselves to handling smaller threats, such as illegal hunters and fishers, and reporting others to the director. The Rangers believe clear policies should be in place to guide their actions in the field. These guidelines should be built into their training and provide the Rangers themselves with the chance to develop standard operating procedures.

To date there has been little coordination with neighboring protected areas. Cayambe-Coca, as was previously mentioned, abuts two other conservation areas—the Antisana Ecological Reserve and the Gran Sumaco National Park. The Cotocachi-Cayapas Ecological Reserve is also very close. Sumaco, Antisana, and Cotacachi-Cayapas all have Rangers working in them. However, there has been no attempt to organize the community rangers or even the federal rangers into coordinated actions such as joint patrols, training workshops, or community outreach for villages located in the protected areas buffer zones. The park rangers would like to see this type of collaboration.

Were new threats generated or existing ones exacerbated as a result of the participatory initiative?

No new conservation threats to the Reserve were created nor existing ones exacerbated. The threats the program produced were to the Rangers themselves. A few have had their lives threatened by poachers. Many hunters in the Reserve come from wealthy Ecuadorian families and think nothing of threatening a campesino farmer, particularly one with no uniform. The Rangers believe they need a stronger identification with INEFAN in order to receive the respect they need. They also feel that their work as Rangers has led to some divisiveness within their communities, complicating their lives as community members.

Discussion

If the Cayambe-Coca Community Park Rangers are to have a positive impact on the management of the Reserve's resources, the communities they represent must become more involved through an "among colleagues" type of participation. It is not enough to have the community vote on who should fill the Ranger position. The communities have many ideas on how the program should be run to improve protected area management. For example, the community of Sinangüé used to have one Ranger who worked year-round, complemented by another who rotated monthly. In this way more members of the community learned about the Reserve, its management objectives, and the work of the park guards. In other communities several women have voiced interest in working as Rangers. Thus, they seem to recognize the importance of the Reserve and desire to supplement their incomes. Rather than just reporting to INEFAN on happenings in the community, the initiative should be used as a way of opening a broader dialogue between the park agency and local villagers. Meetings would provide opportunities for both INEFAN and the communities to share information, opinions, and ideas. This would also send a clear message to the communities that INEFAN supports its Rangers and would like to collaborate with them to advance Reserve management. This has not always been the case. As one Ranger remarked, "The people do not always respect INEFAN and therefore they do not always respect us. It is important that INEFAN puts its 'belt on tight' when it comes to work."

The responsibilities and rights of the Rangers must be clarified. While the Rangers in the high elevation region of

the park do confiscate firearms and illegal fishing equipment such as nets and dynamite, those in lower regions do not. This may be acceptable given the different social histories of the two regions, but a clear policy, based on Ecuadorian protected area and forestry law, should be articulated.

More effort must be put into adaptive management of the Ranger program. As described earlier, little information has been collected on the programs impacts. By not collecting data on program effectiveness, it is difficult to make decisions on what changes might be necessary in order to achieve ecological and socioeconomic objectives. The participating Rangers and communities should play an active role in the analysis of data obtained and resulting management decisions.

Finally, international and national organizations supporting the initiative must do more to train and equip the rangers and ensure the program continuity. In the nearly four years that the program has been implemented, only two training events were held, both in 1996. One was a week-long course on topics such as basic wildlife biology and protected area and forestry law. The other was a visit to another protected area. All participants enjoyed the course and said they learned a lot, but they need more training on how to do their jobs well. Future training events should provide greater opportunity to learn from each other. Several Rangers now have nearly four years of experience and valuable knowledge that may improve the program. Supporting organizations should do more to ensure that the program is not halted, as it was for a year and half between phases I and II of the SUBIR Project. Such stops cause participants to lose enthusiasm and seek other employment opportunities, thus losing valuable experience. Currently, The Conservancy is working with the Ecuadorian government to establish a water-use fee on the potable water that Cayambe-Coca provides to Ecuador's capital, Quito. The fund created from this fee would provide the financial resources necessary to allow the program's implementation to be uninterrupted.

Conclusions

International conservation organizations such as The Conservancy should continue to work with Latin American park agencies and conservation NGOs to develop Ranger programs. With a relatively small investment the number of field personnel can be increased and trained, thus improving protected area oversight, park-community relations, and community conservation efforts. While almost everyone involved in the Cayambe-Coca program had criticisms and suggestions on how it might be improved, there was nearly universal agreement that it was a good program, and that it provided a means of engaging locals more directly in the management of protected areas and the natural resources upon which their lives depend. Rather than viewing nearby communities solely as threats, the Ranger program turns those threats into conservation opportunities as locals become aware of the area's management objectives and involved in its planning and oversight. **IJW**

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Announcements and Wilderness Calendar

By Woody Hesselbarth

- **A New Plan for a Contentious Wilderness**
- **Wilderness Ranger Mauled by Lion**
- **Wilderness Dam Controversies Abound**
- **Road Building Moratorium Issued**
- **Canadian Supreme Court Sustains Native Land Claims**
- **Keeping Bears Wild**
- **Wilderness Plants and Rocks Deprecated**
- **New Electronic Journal Appears**
- **Alaska's National Petroleum Reserve Exploited**
- **Mother Nature Creates "A Mess"**

A New Plan for a Contentious Wilderness

In 1984 the USDA Forest Service (USFS) adopted its first management plan for the new (then four-year-old) Frank Church-River of No Return Wilderness located in Idaho. The plan, which adopted most of the current thinking about wilderness management, was almost immediately appealed by commercial interests. The traditional outfitters felt it fatally constrained their business practices by requiring the dismantling of permanent structures and removal of equipment and supplies at the end of each field season. After lawsuits, a special study commission, and "endless wrangling," the plan has become official policy on the six national forests that administer various parts of this wilderness.

The existing plan does not address a wide variety of management issues, some of which have arisen since its adoption. These new issues, increasing use, and a changing political climate have exposed the age of the current plan. Now, after four years of work, hearings, focus groups, and much editorializing by the public, the USFS has issued a Draft Environmental Impact Statement for public review and comment.

The 800-page document (also issued on CD-ROM) offers a range of alternative solutions to the wilderness issues identified by the public, land managers, and politicians. The agency will use comments received during the comment period to fine-tune the alternatives. They have broadly solicited input, and judging from the opening salvos fired from all quarters, they'll have their wish fulfilled.

The proposed new plan will address such contentious issues as the amount of future use on the very popular Middle Fork and main Salmon Rivers. The currently unregulated (by the USFS) commercial aviation use inside the wilderness is addressed formally for the first time. Past inconsistent administration by various managers is targeted for improvement. And the growing understanding of the threat of exotic species is recognized.

A 28-page executive summary of the draft plan is available on the Internet at <http://www.mccall.net/pnf/fcronrwpp.htmlx The summary, the entire draft plan, or more information may also be obtained by calling (208) 756-5100 or by writing Wilderness Coordinator, Rural Route 2, Box 600, Salmon, ID 83467, USA.

Wilderness Ranger Mauled by Lion

Many a backcountry ranger can relate the countless times wilderness visitors have exclaimed: "Wow, you get paid to be out here!?" There are days though, when the real world intrudes. Last year, Ginneth Manganyi and his colleague Thomas Chauke were out for a run near the Vlakteplaas Ranger Post in Kruger

National Park, South Africa. Ginneth spotted a lion in the veld and stopped running. The lion, who'd been staring at Ginneth, suddenly charged (an unusual occurrence).

Before either ranger could react in self-defense (lions have been clocked at speeds over 16 meters per second), the lion reached Ginneth and attacked. Badly battered, Ginneth fell with the lion on top of him. Thomas charged the lion, which looked up long enough for Thomas to fire a shot through its head.

Ginneth spent two weeks recovering in a hospital after being evacuated from the park. He survived the encounter with impaired hearing in his right ear and the right side of his face partially paralyzed. He's lucky to be alive.

The entire account can be found in the September 1997 issue of *Custos, The National Park Magazine* (Custos, P.O. Box 787, Pretoria, 0001, South Africa. E-mail: christas@parks-sa. co. za.)

Wilderness Dam Controversies Abound

One of the last things most people would expect to find in a wilderness is a dam. Yet hundreds of dams were built in places that have since been designated as wilderness in the United States. Like most of the handiwork of humans, dams are not forever. Yet it's this fact that has begun to cause a lot of controversy among wilderness managers and advocates.

Most dams in wilderness are small affairs. They were built as long as 100 years ago for a variety of development reasons. Most were built to sustain late-season agriculture. Some were constructed to support the production of hydroelectric power. And a few were raised on the tragic premise that "barren lakes" could be enhanced to create habitat for exotic fisheries (the classic "What God made, man can improve upon.")

After the spectacular failure of Idaho's Teton Dam in the early 1970s, close attention was paid to the status of all these little dams. Irrigation Districts who held permits for feeble dams were told to repair them quickly. And quickly in this modern world is translated "by motorized means."

In Montana and in Utah, dam operators have asked for permission to use helicopters, backhoes, bulldozers, and assorted other motorized equipment to maintain dams located inside wildernesses. In Montana, dams built by nonmotorized means may have roads bulldozed into them. In Utah, the legislation adding the High Uintas to the wilderness system specifically allowed for such use.

In California, heated battles have been fought (and pending federal legislation introduced) over "improvement dams" built to create habitat for trout. Some advocate their removal to eliminate the impacts of the exotic predators on amphibian populations. Others say their retention is crucial for the continued enjoyment of the fishing experience.

To keep tabs on the dam wars, point your web browser to <http://www.-wildernesswatch.org>. Also, check out <http ://rs9. loc. gov/home/thomas. html> and look for information on HR 1663 (105th Congress); or contact the Forest Service by e-mail at mailroom/rl_bitterroot@fs.fed.us (for dams in the Selway-Bitterroot Wilderness); mailroom/r5_stanislas@fs.fed.us (for dams in the Emigrant Wilderness); or mailroom/r4_ashley@fs.fed.us (for dams in the High Uintas Wilderness).

Road Building Moratorium Issued

The USDA Forest Service (USFS) announced in late January that it would temporarily cease building new roads into the remaining roadless areas of the National Forest System. Chief Mike Dombeck announced the policy and invited the public to comment on the agency's plans to formulate a permanent policy.

The policy came under fire for not applying to certain lands in the timber-rich Pacific Northwest and Alaska. It also has drawn the wrath of the timber industry. Of interest to wilderness advocates, it potentially offers protection to lands proposed for wilderness classification and to lands adjacent to existing wildernesses.

The USFS has posted the policy on its website at: <http://www.fs.fed.us/news/roads/> and invites comment via e-mail at: roads/wo@fs.fed.us. A wide spectrum of reaction can be found by using search engines on the World Wide Web.

Canadian Supreme Court Sustains Native Land Claims

Last year an important decision by the Canadian Supreme Court found that the rights of the Native inhabitants to lands were not removed by the occurrence of European settlement.

The practical effect of the ruling may be that Native groups may seek payment for the loss of lands (or the resources on those lands) to non-natives. Although the ruling applied to nearly 57,000 square kilometers (22,027 square miles) of British Columbian lands, it could extend to other provinces as well.

(Excerpted from the Forestry Source, Society of American Foresters, 3400 Grosvenor Lane, Bethesda, MD 20814, USA. Website: <http://www.safnet.org>.)

Keeping Bears Wild

The June 1997 issue of Backpacker magazine had a short article on the use of Karelian bear dogs, which are being used in several U.S. National Parks to "keep bears wild."

Yosemite National Park is notorious for its "mooching backcountry bears." These black bears have terrorized backpackers for years since learning how easy it is to separate campers from the food in their lightweight backpacks.

The problem is that bears that have become habituated to relieving humans of their food often end up being destroyed. The dogs are used to demonstrate to bears that humans are "the big bear" and shouldn't be approached for an easy meal.

Wilderness Plants and Rocks Deprecated

The New Age trend of replicating Native American medicine wheels has begun to affect the ecology of wilderness areas on the Sedona Ranger District of the Coconino National Forest in Arizona. Adherents of the new religious practices collect rocks and plants to conduct their ceremonies—building hundreds of rock rings. *Backpacker* magazine reported (June 1997) that "Sedona New Agers insist their actions and karma are good because when questioned, the stones have yet to offer objections."

For more information, contact the Coconino National Forest at 2323 East Greenlaw Lane, Flagstaff, AZ 86004, USA. E-mail: mailroom/r3_coconino@fs. fed. us.

New Electronic Journal Appears

Conservation Ecology, an electronic journal similar to *IJW*, has been launched by The Ecological Society of America. Available at <http://www.consecol.org/Journal>, the journal attends to interdisciplinary communication and insight—in the words of editor C. S. Holling, "a new journal covering a new application of science, using a new medium. It requires novelty and experiment."

The journal is available free of charge at the website or by e-mail subscription. To subscribe, send an e-mail message to subscribe@consecol.org with "subscribe conservation-ecology" in the body of the e-mail text.

Alaska's National Petroleum Reserve Exploited

The USDI Bureau of Land Management (BLM) is in the final stages of environmental study for the management of the 9.47-million-hectare National Petroleum Reserve-Alaska. This huge chunk of land was set aside as a strategic oil reserve decades ago. Although unsuccessfully proposed as a National Wildlife Refuge in 1980, it has remained mostly undeveloped.

The BLM now seeks to open up the area for oil drilling. According to The Wilderness Society, none of the proposed alternatives in the Draft Environmental Impact Statement (DEIS) adequately protect the wild values of the land in question.

The comment period for the DEIS closed in March of this year. The Final EIS should appear this summer or fall. For more information you can contact NPRA Planning Team, BLM-Alaska State Office, 222 West Seventh Avenue, Anchorage, AK 99513-7599, USA. E-mail: jducker@ak.blm.gov. The Wilderness Society position can be seen at their website: <http://www.wilderness.org/ wildalaska/ oil. htm>.

Mother Nature Creates "A Mess"

Or so it appeared to officials on the Medicine Bow-Routt National Forest in Colorado, USA, when a large "wind event" blew down trees on over 8,000 hectares of land last fall.

The initial accounts of the results of the storm were filled with imagery of destruction and wasted resources. The swath the wind cut included some 3,200 hectares of land inside the Mount Zirkel Wilderness.

Since the storm, the USDA Forest Service has put together an interdisciplinary team to develop options for managing the ecology in the aftermath of this storm. An Environmental Impact Statement will be written, which will propose to salvage timber from outside the wilderness. A timber sale, new and rebuilt roads, modified trail locations (including a temporarily relocated portion of the Continental Divide Trail), and other actions are being considered.

The study will also decide how to approach the management of the portion of wilderness where blowdown has blocked some popular access trails. Options will include a range of actions, from extensive use of chainsaws to restore the prestorm access to perhaps leaving the trees in place and letting the wilderness become a bit wilder.

For more information, contact the Medicine Bow-Routt National Forest at 925 Weiss Drive, Steamboat Springs, CO 80487-9315, USA. Telephone: (970) 870-2220.

Submit items for the "Wilderness Digest" section of *IJW* via e-mail to Woody Hesselbarth atwhesselbarth@igc.apc.org.

Book Reviews

The Adirondacks: A History of Americas First Wilderness by Paul Schneider. 1997. Henry Holt and Company, New York. 365 pp., $25.00 (hardcover).

Contested Terrain: A New History of Nature and People in the Adirondacks by Philip G. Terrie. 1997. The Adirondack Museum/Syracuse University Press, Syracuse, New York. 223 pp., $29.95 (hardcover).

America's great national wilderness champion Robert Marshall cut his wilderness eye-teeth in the Adirondack Mountains of New York State on forays from his family's summer camp near Saranac Lake. On my father Howard Zahnisers ("Zahnie") first introduction to the Adirondack High Peaks region in August 1946, he remarked to his backpacking companions Paul Schaefer and Ed Richard: "So this was Bob Marshall's country. No wonder he loved it so!" On that trip Zahnie also realized the Adirondacks were where wilderness preservation began. Schaefer, who had met and been inspired by Marshall atop nearby Mt. Marcy in July 1932, quoted my father saying that "... we need some strong legislation which will be similar in effect on a national scale to what Article XIV, Section 1, is to the New York State Forest Preserve."

That is the so-called "forever wild" clause of New York States constitution, which Bob Marshall's father Louis Marshall first fought for and later defended so vigorously This clause is indeed the primary precedent for statutory protection of wilderness—wilderness by law, not by administrative whim. In his new book, *The Adirondacks: A History of Americas First Wilderness*, Paul Schneider calls the Adirondack Forest Preserve "probably the best-protected wild lands in the country." Even before the "forever wild" clause, Henry David Thoreau of Massachusetts noted somewhat jealously in 1848 that "New York has her wilderness within her own borders." It was de facto wilderness then.

Schneider picks up on this, our great thirst for firsts, with the subtitle of his book. Schneiders anecdotal, storyteller's history makes a fascinating supplement to the more systematic Adirondack histories available in Frank Graham's *The Adirondack Park: A Political History* and Philip Terries *Forever Wild*. Schneider wraps up his introduction saying that"... at last we are mature in our relationship to the Adirondacks, complete in our understanding of the wilderness." But he quickly counters that "If there's one thing the history of the Adirondacks teaches, it's that the meaning of wilderness, like love, changes as soon as it's defined."

Schneider makes minimal attempt to define wilderness. What he does is an admirable job of picturing the many European-American attempts to grapple with the wilderness of this dome of jumbled peaks in a harsh climate that play out the central Adirondack story Here are wonderfully narrated portraits of the early fur trade; the French and Indian Wars era, early and massive land speculation schemes that mostly massively failed; and attempts at farming, mining, and finally exploiting the region's wealth of trees whose alarming destruction spearheaded the "forever wild" movement. For each historic thrust, Schneider also provides today's foil. Among the latter are contemporary trapper Bob Inslerman; independent loggers John Courtney Jr. and John Courtney III; the late New York State conservationist Paul Schaefer (1908–1996), who was a mentor to my father and countless other wilderness advocates; and regional planner and MacArthur Fellow George Davis.

The maturity "in our relationship to the Adirondacks" that Schneider posits might well be the fact that the people of New York State have recognized and attempted to delimit potential and actual negative impacts on their "forever wild" public lands of the substantial private lands that also lie within the Adirondack State Park. The people of New York State own 2.6 million acres inside the park boundary, which is called the "Blue Line," and encompasses 6 million acres. The balance of 3.4 million acres within its boundary is variously privately owned. The Adirondack State Park is, therefore, also the precedent for the European model, and now American too, of so-called "greenline" parks. The park may also be, in some ways, a model for living in a landscape by sustainable means, an idea Schneider explores with George Davis in his book.

"... the Adirondacks are not 'it' anymore as far as sustainable development goes ..." Davis says, "There are stricter regional zoning plans right here in America. Probably even the New Jersey Pine Barrens are in some ways better protected than the Adirondacks." But Davis points to two major breakthroughs in the Adirondacks: "the concept of total preservation on the Forest Preserve" and "the acceptance of the basic concept thirty years ago of zoning different types of land uses and different intensities of land use on private land based on what the land can bear and what is compatible with the park as a special place. Those were both major steps forward." But we have not yet arrived with that second step, Davis says.

That very failure underscores the stated aim of *Contested Terrain*. Curiously, Terrie offers this book as somewhat of an atonement for his earlier and excellent *Forever Wild*, a history

written, Terrie now asserts, from a nonresident viewpoint without proper inclusion of the humanly constructed version of the Adirondack story. I find Terrie most successful in this present book in his introduction and final chapter, where he tackles his important thesis head on.

"I want to show that the history of the Adirondacks is a tale of contested terrain," Terrie writes in the introduction, "and to connect current conflicts to their historical, social, and cultural roots." He also wants "to bring to the dialogue certain groups, mainly the year-round residents, whose voice has been noticeably absent from most previous efforts to write Adirondack history, including my own." This is a crucial inquiry today, I believe. It subjects to scrutiny the idea of wilderness without people, the topic explored in great depth by Theodore Catton in his 1996 history of selected Alaska wildlands, *Inhabited Wilderness*. Terrie's inquiry also establishes that the interpenetration of wildness and culture already has a substantial history in the Adirondacks. And this history, as Bill McKibben demonstrates in his book *Hope Human and Wild*, is also a concurrent history of phenomenal ecological restoration.

"Although it is an accident of history, the unintended mix of private land, villages, and state-owned wilderness can itself be seen as the Adirondack story, a source of conflict but also a great opportunity," Terrie writes in the last chapter. I believe this is especially important as a historical precedent, as both Schneider and Terrie imply, for the need to build pockets of wildness into the fabric of our otherwise more intensively human, artifact-laden landscapes, and mechanized lifestyle.

"In the Adirondacks we have a landscape that could be a model for the world. It is a place where people live and where nature matters, where it is just this combination, this interrelationship between people and nature, that defines the place, provides its meaning, constructs its narrative." Terries is a valuable inquiry, despite how it seems to falter here and there in satisfying its ambitious and well-positioned thesis, which is that "the contests over the Adirondacks originate in stories." But my narrow complaint on this point definitely should not discourage the reader who is interested in wilderness and wildness and the protection of natural areas. Terries Contested Terrain is a thoroughly enjoyable brief history. And it is rare to encounter a gifted author confident to hazard a stance that is so admirably self-critical of his earlier, and greatly respected, work.

(Reviewed by Ed Zahniser, who works at the National Park Service's Interpretive Design Center in Harper's Ferry, West Virginia. E-mail: ed_zahniser@nps.gov.)

Purple Hearts and Ancient Trees: A Forester's Life Adventures in Business, Wilderness and War by Jay Gruenfeld. 1997. Peanut Butter Publishing, Seattle, Washington. 352 pp., $19.95 (paperback).

Life is a series of adventures. Author Jay Gruenfeld, an industrial forester and wilderness enthusiast, recounts 72 years of adventures in a full and interesting life in the United States. Who is Jay Gruenfeld? Since 1979 he has run his own forestry consulting business from the Seattle area, specializing in international log marketing. Before that he spent 29 years with three forest products companies in the Pacific Northwest, starting out as a choker-setter with Weyer-haeuser and ending up as the vice president of lands and forestry for Potlatch Corporation. After combat duty in the Pacific in World War II, he earned two forestry degrees from Colorado State University, and a diploma from Oxford University, where he studied philosophy and politics as a Fulbright Scholar. It is surprising to learn that in 1950 someone with a masters degree in forest management would begin a career by setting chokers, but if military training teaches you anything, it is leadership by example. (This reviewer was an artillery officer in Vietnam.)

As the subtitle suggests, three threads—business, war, and wilderness—are woven through the "ancient trees" theme of this autobiography.

The war thread presents stories of a young infantryman's combat experiences, roughly one-fifth of the book. The author was wounded five times and awarded the Purple Heart medal three times. This most beautiful of battlefield awards is one of three photographs on the book cover. On the back cover is Gruenfeld's Combat Infantryman's Badge, an honor setting apart the battlefield warriors who do the grunt work of combat from all the others who merely support them. In recognition of his leadership abilities, at age 20 Sergeant Gruenfeld received a battlefield commission to the officer ranks.

The index is useful. A short list of suggested readings on the "Forestry, Wilderness, Environmental Forest Wars" is revealing yet balanced: Rod Nash with Alston Chase, Chad Oliver with Jerry Franklin. The author, and this reviewer, recommend Bob Lee's *Broken Trust, Broken Land: Freeing Ourselves from the War Over the Environment*, a book about empowering local communities that have been stripped of their dignity for which an effective counterbalance may not exist. (Read it anyway; social scientists like Lee seldom lower their academic shields to tell you what they really care about.)

Business principles and practices are another continuing thread, with communications and trust emphasized. Principles emerge from the author's war experiences. A recent photograph shows him at ease with some of his Japanese timber trading counterparts. No grudges held here, as the former enemy becomes today's business associate. Gruenfeld believes there would be more trust today about decisions affecting the national forests that are so important in the western United States if interests had communicated more openly in the past, as he tried to do in the 1970s. In 1996 he pushed the importance of the trust idea during the Seventh American Forest Congress, a meeting of upward of 1,500 people in Washington, D.C. According to Gruenfeld, "In the future ... Our forests will benefit from strong trust between diverse stakeholders." Gruenfeld disdains

bureaucracy (which includes orientation toward "process" rather than "results") and this disdain surfaces several places in the book.

In overall communications performance, Gruenfeld grades himself as a B minus. The book includes many of his previous speeches and writings about communications, so you can grade him yourself. (This reviewer gives the author high marks for effort. Although the last sentence is incomplete, the message is clear enough, but because a copyeditor could have improved this book, a B minus seems about right. Indeed, he makes a point in the book that sometimes kindness is more important than the truth. When he was a Potlatch executive, Mr. Gruenfeld lectured at the University of Minnesota when the reviewer was a graduate student. By request he met with the reviewer, offering all kinds of kindly advice.) The persistent communications theme is redoubtable wisdom. One example:

> *Politics are perceptions, that is, political actions result from what people think is true, not from the facts. Many people are offended by clear cuts, so they must be used carefully Regardless of the biological and economic justification for big clear cuts, they are sometimes the political equivalent of spitting in someone's face. This is particularly true in the United States. Because there has been such a pathetic failure to adequately communicate key points, such as the fact that tree production is beneficial and sustainable, and how trees relate to the public's pocket book and the need for forest products.*

Wilderness is the third thread. Gruenfeld repeatedly asserts how important some wilderness values are to him, primarily because wilderness is the setting for his favorite forms of outdoor recreation. He begins the chapter titled "Wilderness" by stating the "keystone" of his personal beliefs: "The excess of any virtue is a vice." Although this paradox pretty well sums up the author's attitudes about wilderness, he tells some interesting stories, especially those involving communications and elk-hunting partners who frequently communicated with the author by firing rounds in the air to guide him back to camp after dark. Gruenfeld participated in the Western Forest Environment Discussion Group in the mid-1970s, because he believed good things could result from consorting with the "enemy" His boss, the president of Potlatch, did not agree but nonetheless allowed Gruenfelds participation in this forum.

Now brace yourself. Gruenfeld sees wilderness not only as a place for solitude, but also as a lumber storehouse. He points out that one Alaska yellow cedar tree could fetch $3,000 in Japan; a 10-acre patch of ancient Douglas firs in designated wilderness might bring a quarter to a half-million dollars. This economic argument is surely offensive to many wilderness enthusiasts, and a perceptive communicator surely would know this. Part of communications is listening, and part is understanding. As Gruenfeld makes his socioeconomic arguments, there is no evidence that he has listened to or tried to understand birds not of his feather: "Because of my knowledge of the awesome amount of timber value in Wilderness Areas, the people-hurts inflicted on forest communities by the Endangered Species Act and related statutes, and the lack of funds to develop and maintain Wilderness trails, I proposed some new legislation in 1991." That proposal would open up existing designated wildernesses to commercial timber harvesting of "only 25% of the total volume." He adds, "If I could get Michael Jordan, Robert Redford and Bill Gates behind it, it would pass." The mere suggestion that such luminaries might play Sancho Panza to the quixotic effort to log a legal wilderness is outrageous enough to raise any reader's blood pressure. But he isn't finished yet.

As all foresters do, Gruenfeld loves trees, and true to the title, the strongest theme in the book is "ancient trees." Strong is too mild a term for his opinions on the management of federal forests. With stinging criticism he assesses the current situation as not only wasteful, but evil. The author puts his money where his mouth is. In 1991 he and some other foresters in the state of Washington produced a videotape for the Society of American Foresters criticizing the establishment of federal forest reserves for conservation of the northern spotted owl. Through the "ancient trees" topic the author revisits the war theme and ties it in with communications as he pleads with his forester colleagues to present a "people" approach to forest management: "This is a war. Truth is on our side but the other side is outspending us massively, has more bodies and also has the worldwide environmental roll with them." He closes the book with a dark thought: "The only thing necessary for the triumph of Evil is for good people to do nothing."

In the end, life is an adventure, not just a series of adventures. When a 72 year old with a diploma in philosophy and politics from one of the worlds foremost universities writes a book, the reader might expect more reflection on the whole cloth instead of loosely connected details about the warp and woof, and more wisdom than argument, especially when the author repeatedly states his support for the concept of wilderness. As it is, the reader might easily conclude that claiming to care about wilderness is merely a convenience for rationalizing the "ancient trees are lumber" argument.

With his life stories now recorded for posterity, perhaps Gruenfeld will become more reflective on what all this means. As a forestry leader and elder he has the wisdom and insights of an international log marketer on what it means to think globally and act locally, tying in the importance of building trust and an expanded view of how to communicate effectively The war metaphor may work temporarily to draw attention to a situation, but most warriors eventually realize the need for peace, and the need to respect the dignity of people even if we don't agree with their views. Gruenfeld may have some perceptions worth sharing on questions such as: How much longer can we view the environment as a fight between "us" and "them"? What is it "they" want that "we" don't want to give them? That will be the book the reviewer expected this one to be.

(Reviewed by Jay O'Laughlin, University of Idaho.)