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Suggested citation: Foreman, Dave, ed., *Wild Earth* 2, no. 1 (Spring 1992).
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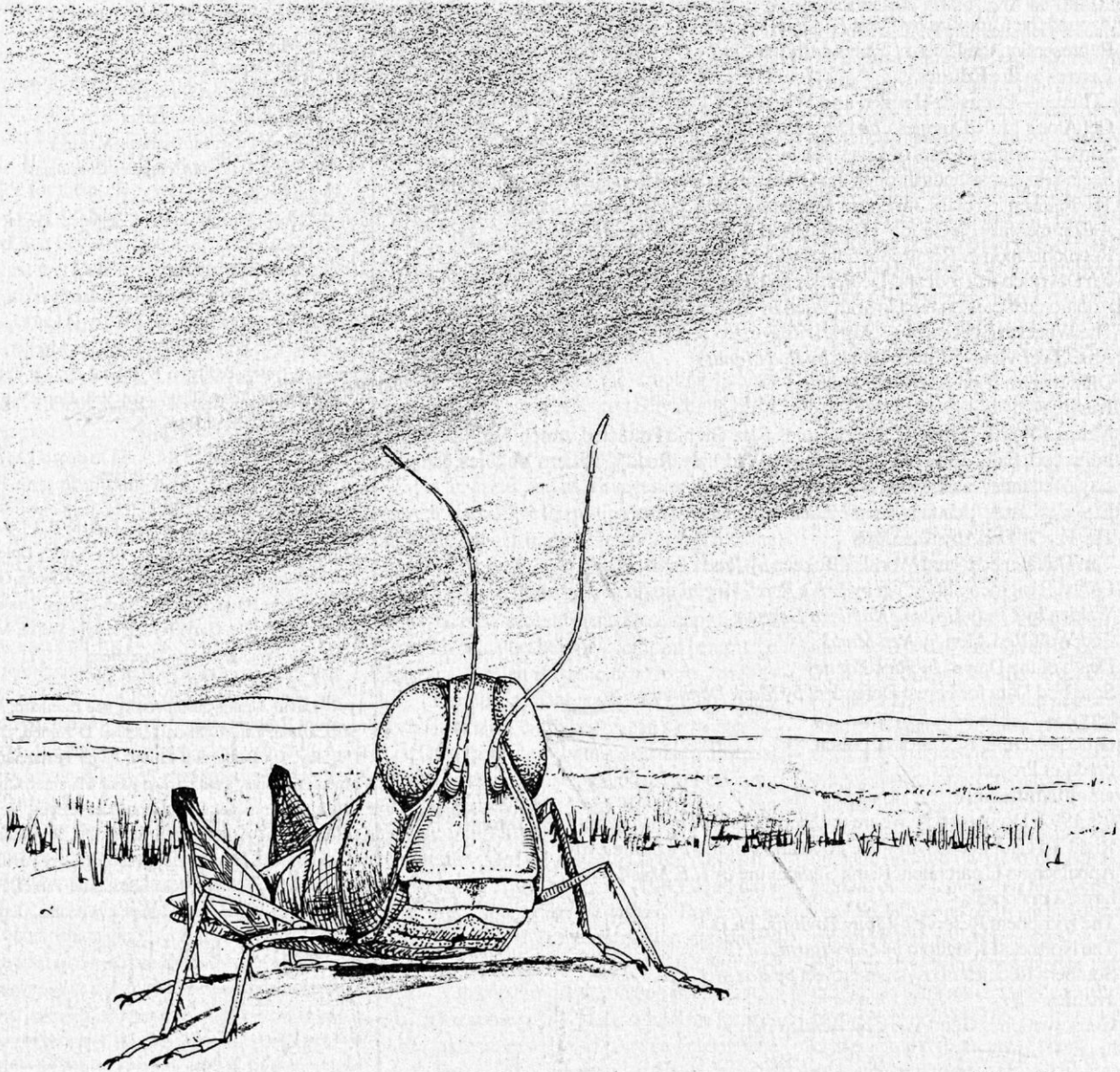
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Wild Earth

SPRING 1992

VOLUME 2, NUMBER 1



Chris Belli

Writings by:

*Wendell Berry
Dave Foreman
Leslie Lyon*

*Mollie Matteson
Gary Nabhan
Frank and Deborah Popper*

*Howard Wilshire
George Wuerthner
...and others*

\$5⁰⁰



Volume 2, Number 1

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WILDEARTH (ISSN 1055-1166) is published quarterly for \$20 per year by the non-profit Cenozoic Society, Inc., 68 Riverside Dr. Apt 1, Canton, NY 13617 (315) 379-9940. Second-class postage paid at Canton, NY. POSTMASTER: send address changes to *WILD EARTH*, PO Box 492, Canton, NY 13617.

Subscriptions to Canada and Mexico are \$25 per year, overseas via surface mail, \$30 per year, overseas via air mail, \$35 per year.

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Wild Earth is printed on recycled paper.

On the cover: The bigheaded grasshopper (*Aulocara elliotti*), native to the western grasslands by Vermont artist Chris Billis.

AROUND THE CAMPFIRE

A deep thinker recently wrote *Backpacker* magazine chastising hikers for discriminating against dirt bikers by trying to lock them out of the land. He suggested that hikers try dirt bikes and decide for themselves whether or not it's fun.

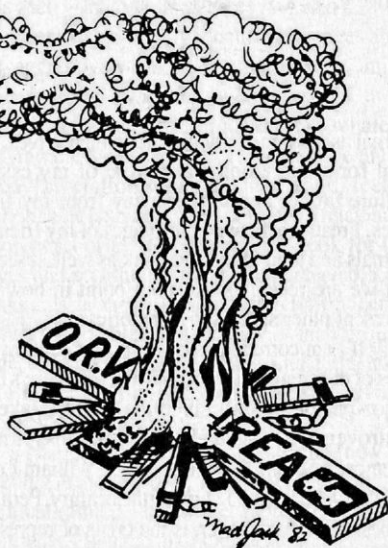
I've tried dirt biking. It is fun. Twenty-some-odd years ago I even owned a dirt bike. In 1971, when I first met Debbie Sease, who later became my first wife, she was a dirt biker. She thought it was fun. Debbie, who had polio as a child and thus was limited as a hiker, even had an excuse to use a dirt bike. For the last fifteen years, though, Debbie has been the leading conservation lobbyist in Washington, DC, working for Wilderness designation of Bureau of Land Management holdings.

Whether or not dirt biking, four-wheeling, AT'ing, or even mountain biking are fun, however, is irrelevant. The question is not one of motorized or non-motorized recreation. For dirt biking, as for all kinds of backcountry recreation, we must ask, "Is it proper?"

The use of off-road-vehicles (ORVs) fails this test on two counts. ORVs interfere with other forms of recreation on the public lands (they are the ill-mannered dogs at a family picnic); more important, the use of any wheeled vehicle (including mountain bikes) off-road is destructive to the land and to wildlife.

One of the themes of this issue of *Wild Earth* is off-road vehicles. Howard Wilshire is the dean of ORV critics and he graces our pages with a review of the damage ORVs do to the land. Rod Mondt's companion piece surveys the current state of efforts to ban these bad dogs from the backcountry.

The real villains, however, are not the users of ORVs. Many ORV users are barely literate, borderline retardos. They can't be expected to know what is proper. The villains are Forest Supervisors and BLM District Managers. President Richard Nixon in 1972 issued an executive order directing federal agencies to control ORVs on their lands. President Jimmy Carter issued his own executive order in 1977 further mandating federal agencies to control ORVs. The managers of the Forest Service and BLM all but ignored those directives; today the public lands are virtually wide-



open to knobby tires and the drooling bubbas squatting over them. Had Forest Service and BLM officials followed Nixon's order twenty years ago, we would not have the ORV problem today.

As an aside, and as a suggestion for future research, it would be interesting to determine what proportion of our trade deficit with Japan is the fault of ORVers. Virtually all dirt bikes and ATVs are of Japanese manufacture. So are the natty outfits and other accoutrements these zippy fellows favor. I would guess that a significant percentage of our trade deficit is due to this "recreation." Is there an economist in the house? Recall that Barry Goldwater called dirt bikes "Japan's revenge."

Our other theme for this issue is commercial livestock grazing on the public lands. I offer my views in an essay, "Get Along Little Doggies," but I'd like to briefly discuss here some strategic considerations for the campaign to ban cows from federal lands. The first point is that I don't have the answer. Nobody has the answer. This leads to the second point: The conservation movement needs an open, respectful debate on the best way to deal with commercial grazing on public lands.

Some conservation professionals are leery of public discussions about strategy on grazing (and on other issues). While certainly some strategy and tactics should be discussed in private, I think we do the land, the public, and the democratic process a disservice by keeping strategic discussions closed. The conservation movement needs to discuss the merits and pitfalls of "Cattle Free in '93." What are the pros and cons of campaigning to rid Wilderness Areas of cattle?

Until we have such a discussion, the formulation of strategy on this issue for mainstream

conservation groups will be limited to an elite group of staffers and volunteer leaders. Those cut out of such parleys will go their own way. The conservation movement will be divided and the opposing sides will view one another with distrust and rancor. That is the situation today.

Of course, a serious discussion within the conservation movement may result in an agreement to disagree on strategy. That is fine because it will have been decided openly, not by default or miscommunication, and the discussion will elevate the public lands grazing issue in the eyes of the media and of politicians.

I am not fully decided myself whether or not it is a good idea to tie the phase-out of grazing to Wilderness Area designations. As in all strategic decisions, there is no empirically correct answer. In the end, it will be a judgment call. To be able to exercise the best judgment on this very important decision, we all need the benefit of a full debate.

This debate should be open and vigorous, but it should also be respectful. With few exceptions, the individuals involved on different sides of the grazing question within the conservation movement understand the severity of range abuse. Ideally, all of us would like to get cows and sheep off the land. That is not the debate. The debate concerns what is the most effective approach to eliminate or at least lessen the impact of livestock grazing on natural ecosystems. Most of us involved, from Sierra Club staff to cattle-free activists, are honest, fair, well-meaning people who love the land and who wish to protect the maximum amount of wilderness and biodiversity.

So, let's be respectful in this discussion. Let's not allow it to degenerate into the adolescent cat fight currently being conducted by the Democratic candidates for President. High standards should be the rule for all strategic debates within the conservation community. Some of us, in both the mainstream and uncompromising wings of the movement, have exacerbated bad feelings and a lack of cooperation by poor manners in such discussions.

May you find neither oil-belching dirt bikes nor methane-farting cows on your happy trails in the back of beyond.

—Dave Foreman

Representing the Lives of Plants and Animals

by Gary Paul Nabhan

The ways we sense, dream and write about lives beyond ours — other cultures, animals, plants, and microbes — are in flux. This turmoil, perhaps, is one response to the accelerated loss of biological and cultural diversity in this world. There is a loss that has burdened those ecologically-literate individuals who realize its weight. There is a weight borne through feelings of grief, anxiety and anger. There is a craning of necks for a sidelong glimpse of other lives, lives fast approaching the vanishing point.

We wonder, how can an endangered plant still attract pollinators—when the insects themselves have also become rare—at the precise time when they are needed? How does the bird which disperses a rare fruit find a place safe enough to allow germination of the seeds? What cues do animals use when they abandon a habitat that has become too disturbed, too encroached-upon? And what shapes will human dreams take when we have lost contact, when we have lost even the memory of the species that have sparked our visions, metaphors and legends for millennia? Painstakingly, we try to get them right for once, and for all. As we strain to do so, we must also face how limited our perceptual abilities are, how huge our misconceptions have been.

One anchor in this tumultuous sea of loss is what we call “nature writing,” an innocuous name for essays, poems or imaginative eulogies about the living and dying stuff of this world. To paraphrase poet W.S. Merwin, “What lasting literature isn’t, in some way, ‘nature’ literature? Why don’t we just call it ‘literature’?” We could then call everything else *urban dysfunctional writing*, for 95% of modern books and magazines hardly reach beyond interpersonal (human) relations within the metropolitan grid.

Nature writers—few of whom call themselves that—are now juxtaposing the vital signs of life remaining on this planet against that degenerated state of affairs, a state which reaches far beyond the urban core. The forms, styles and topic matter of their current writing depart significantly from “that Victorian profession” which naturalists have had of amassing daily lists of birds and blooms. While I remain as devoted to my field

journal as most men my age are to their wives, the final form and emotional timbre of my essays venture farther and farther away from my field notes. I read this between the pages of my friends’ journals and their published work as well. It seems that we are reaching a turning point in how we represent other species in our stories.

If I am correct, this crisis in representing the lives of different organisms may be the genre’s first major paradigm shift since the “nature fakers” controversy involving John Burroughs, Ernest Thompson Seton, Teddy Roosevelt, William Long and Jack London at the turn of the century. Perhaps its best analog, however, is the crisis of representation that recently emerged in non-fiction accounts of indigenous cultures.

For over a decade, those involved with describing the lives of other cultures have recognized that their genre has been weathering such a crisis. Critical readers challenged the presumption that ethnographers and explorers were faithfully representing the points of view of their cultural subjects, rather than simply extending their own colonial, romantic or paternalistic frames of reference.

By 1986, anthropologist George Marcus suggested that this crisis resulted from “uncertainty about adequate means of describing social reality ... Social thought has grown more suspicious of the ability of encompassing paradigms to ask the right questions, let alone provide the answers, about their variety of local responses to the operation of global systems... Older dominant frameworks are not so much denied—there being nothing so grand to replace them—as suspended. Ours is once again a period rich in experimentation and risk-taking.”

I believe that such a period of renewed risk-taking has begun among nature-writers. The parallels between the need to challenge ethnocentrism and the need to challenge anthropocentrism are obvious. We have come to show our boredom, anger and irritability over the simplistic stereotypes of nature offered by television, films, advertisements, zoos and wildlife adventure parks. We recognize that Exxon ads may use the same designers and photographers, the same scenery and emotive clichés, as *National Geographic* or *Audubon* magazines. We are suspicious of Nature Conservancy, Conservation International, or World Wildlife Fund celebrities serving as “earthy models” in ads for outdoor wear, posed in spectacular

landscapes, or embracing charismatic species. Italian environmentalist Franco de la Cecla has coined the term *pornecology* to describe this nature-as-commodity syndrome in landscape photography and writing.

Yet it is not simply the idiotic content of subway posters and TV features that anesthetizes some of us and alienate others. It is the pervasiveness of electronic media as our means of viewing the world. Today, children see more animals on television than in the tangible place where they reside. Our sense of certain animals, and the probability of their continued existence, has somehow become dependent upon their cuddle appeal on the Big Screen, and their compatibility with machines.

In the Absence of the Sacred is a disturbing account of modern technologies encroaching upon local, native worlds. The author of this 1991 Sierra Club book, Jerry Mander, has expressed his concern about “...encounters between animals and certain technologies. The deer becomes fixated at oncoming headlights. The fish stares at the face mask of the diver who spears it. I used these examples because I felt they suggested something of our condition in Western society. We are hypnotized by the newness of the machine, dazzled by its flash and impressed with its promise. We do not have the instinct as yet to be fearful, or to doubt.”

Mander continues this argument:

Partly, this is a problem with our genetic inclination. For thousands of generations, our survival depended upon our keen attunement to events in our environment. We gave particular attention to unusual or new developments: changes in animal behavior, unusual footprints, extraordinary weather. Perhaps these presented dangers, perhaps opportunities.

In the relatively few years in which we have accelerated our separation from nature, our genetic and sensory evolution has not been able to keep pace with the evolution of the machine. In our new, techno-oriented habitat, we have not yet noticed that the information of our senses is no longer invariably accurate.

Then Mander provides us with a haunting admonition:

Three hundred years ago, if humans saw a flock of birds flying southward, they would count on the fact that the birds were actually doing that, and draw reliable conclusions. But since the in-

roduction of moving-image media, the information of our senses (our eyes, in particular), which we have always believed is accurate ("seeing is believing"), may not be. The edited, re-created, re-enacted, sped-up, slowed-down, manufactured imagery we see on television or in film is not the same category of imagery as birds we see in the sky. Failing to make that distinction, we believe what we see in the media is as true and reliable as unmediated information from nature, which offers great opportunities to advertisers, program directors, and politicians. In giving such trust to media imagery, we are relying upon our genetic inclination to pay rapt attention to, and believe, whatever is new and unusual in our visual plain, just like the deer staring at the headlight.

Essayist Peter Steinhart has argued that this syndrome has entirely changed people's expectations of nature, and of what is attractive in the world:

By taking the waiting out of watching, wildlife films also make creatures appear less modest and retiring than they really are. Animals become almost promiscuously available on television. We get lingering close-ups. The animals are fully revealed. There are no empty landscapes. That, I suspect, is why visitors to our national parks expect wildlife to be accessible. Says National Park Service naturalist Glen Kaye, "Whatever the hour of the day, the question is, 'Which meadow do I go

see the deer or the elk or the bear, right now?' There is no sense that the animals may not be available."

What else would one expect of the average American who, by watching 300 minutes of television daily, sees approximately 21,000 commercials each year? As Mander sees it, "That's 21,000 repetitions of essentially identical messages about life, aggressively placed into the viewers' minds all saying, *Buy something — do it now!*"

Peter Steinhart reminds us that whatever edifying messages the media bring us, we are offered "revelation without knowledge, feeling without understanding... Too often [television] absolves us of the responsibility to look for ourselves and sort the real from the perceived. Look at animals in the wild and you get an uncertain image, full of blur and shadow, which requires large measures of imagination and judgement. Look at them on film and you lose the responsibility to organize what you see."

Nature writers, it seems to me, must now risk dwelling in the shadows, accepting the uncertainty. We must admit it when we see more blur than bear, more chaos than coatis. Our descriptions of animals must be released from zoo-like truisms, and be allowed to roam into darker, more rugged terrain. We must fight for the persistence of rough edges whenever editors want to airbrush away any

scars or overgrowth. Otherwise, we acquiesce to domesticating the very images of other organisms whose lives are under threat by the domesticated world. The more pedestrian our journalism becomes, the more it paves over the most ancient trails upon which our vital stories have run.

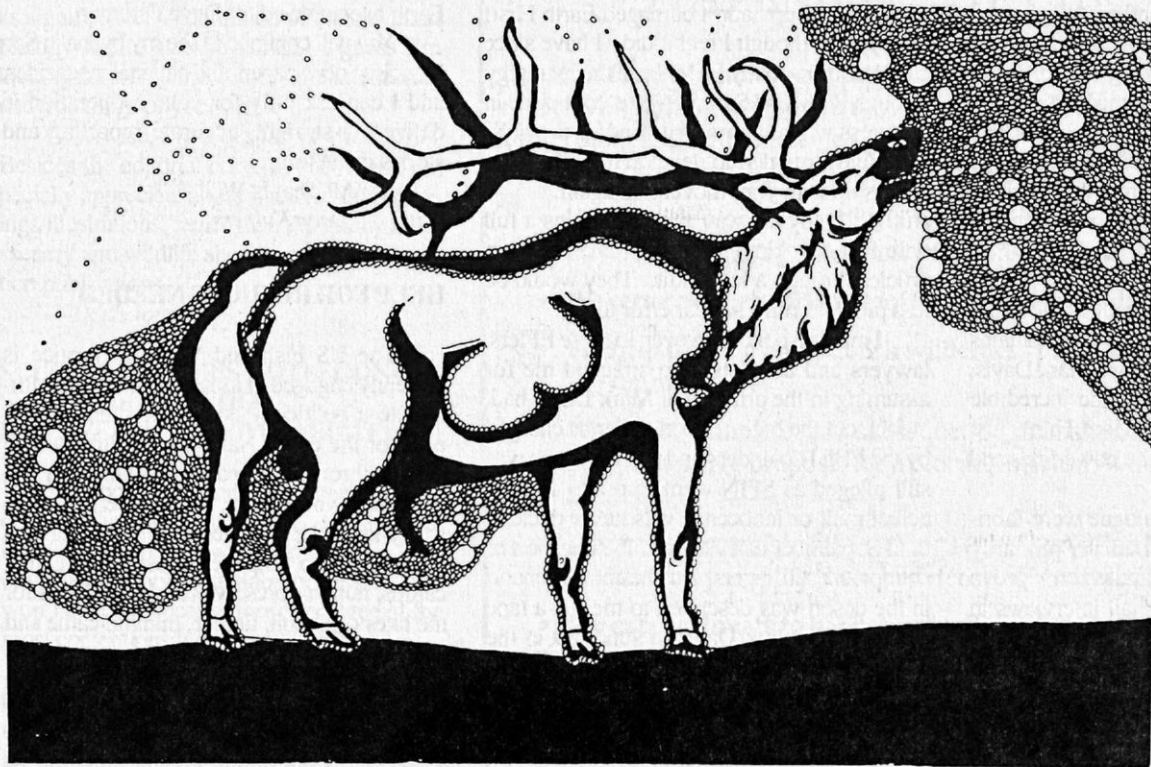
The risk-takers are among us now. Doug Peacock, who moved from the Viet Nam era to the Grizzly Years. Dick Nelson, who, after seasons of watchfulness, was offered "The Gift of the Deer." Terry Tempest Williams, who takes refuge in a family that includes Salt Lake shorebirds as much as it does Mormon kin. The elders such as John Hay, who has not yet given up on the Bird of Light. Or Peter Matthiessen, who pursued the Snow Leopard, but accepted other destinies along the way. Or David Quammen, Steve Pyne, Barry Lopez, Ursula Le Guin, Roger Swain, Adrian Forsyth, Jack Turner, Gary Snyder, and Craighead-George, whose writings wear other skins as they track the faunal narrative, the floral epic.

Which reminds me of the musings of Scott Russell Sanders:

For me, the writing of a [nature] essay is like finding my way through a forest without being quite sure what game I am chasing, what landmark I am seeking. I sniff down one path until some heady smell tugs me in a new direction, and then off I go, dodging and circling, lured on by the calls of unfamiliar birds, puzzled by the tracks of strange beasts, leaping from stone to stone across rivers, barking up one tree after another. The pleasure in writing an essay — and, when the writing is any good, in reading it — comes from this dodging and leaping, this movement of mind.

May we all risk such pleasures.

This paper was prepared for the nature writers workshop on the Mogollon Rim, "Writing Ecology in Different Genres," Feb. 27-March 2, sponsored by Arizona State University and the Pew Scholars Program on Conservation and Environment. Gary Nabhan works for Native Seeds/SEARCH and lives in the Stinkin Hot Desert. His books include Gathering the Desert and The Desert Smells Like Rain.



Letters to the Editors

WILD EARTHLINGS AND EF!ERS EVERYWHERE,

1397
An article about FBI agent Mike Fain and the infiltration of the EF! Arizona 5 was published under my byline in the Sept. 1989 issue of SPIN magazine, and has remained an ugly scar upon my reputation inside the EF! movement ever since. This letter of explanation, apology, and rectification is long overdue.

I was one of several SPIN correspondents laid off in September '91 (I was former West Coast Editor), and welcome the opportunity to quit chasing Axl Rose around Hollywood and return to writing on environmental issues and direct action. No doubt I will meet many of you while researching news stories, and at action sites, and I would rather you know the straight story on my AZ 5 article.

The article, entitled "Razing Arizona," was intended to chronicle the first known FBI infiltration of the environmental movement. Both the title and the cover line, "FBI Nabs Eco-Outlaws," give the impression that the magazine perceived EF! as criminals. This was never my intention. Cover lines and titles in national magazines almost always spring from the minds of editors and publishers, and reflect their particular biases. That was certainly the case with "Razing Arizona." I consider FBI counterintelligence activity infinitely more threatening to all US citizens than any amount of monkeywrenching could ever be. I felt that way while I wrote the article. I thought that was clear, though others have told me they didn't think so.

This legitimate gripe, however, is greatly overshadowed by the inaccuracy of the material reported in the article. The lead contains a short burst of dialogue amongst Mark Davis, Peg Millet, Marc Baker, and the incredible disappearing "Mike Tait" (Mike Fain), just before Davis begins to cut the powerlines and the arrest occurs.

The seven lines of dialogue were fabricated, at the request of an editor, primarily based on comments and attitudes conveyed to me by Mark Davis during jail interviews in Phoenix. This editor no longer works for SPIN and it would be counterproductive to name her/him. I was to write the dialogue into the so-called "crime" scenario with the understanding that the completed lead would then be cut down, for space, and the dialogue either labelled as hypothetical or removed. In fact, neither happened. I would never agree to print

fabricated dialogue. This is a rule even novice journalists (which I was at the time) understand well: the quote is sacred. The piece was never edited after my revisions, never fact-checked, never went through legal edit, and what was supposed to be a working draft was on its way to the printer the next day. I never saw the final draft.

This is not an attempt to pass off responsibility. On the contrary; I wrote that shit and rue my naivete concerning an unorthodox editing technique. This was only the second article I'd ever written for a national magazine, and I was confused that no one at the magazine questioned quotes that I'd clearly identified as fabricated. Everyone knew, and by the time I tried to save it from the printer I was told it was too late and that it wouldn't matter. If only the Spinners had known; this fuck-up has remained an embarrassment to both me and the article's editor ever since.

Every pro journalist gets knocked on her/his ass sometime in their career, humiliated into maintaining a manic degree of accuracy and control from that moment forward. That AZ 5 piece made me old overnight. My naivete and trust corroded as the complaints came in from Tucson in Fall of '89. I sincerely wish that this foul-up hadn't damaged Earth First! in any way, though I feel it did. I have since come to know many EF!ers and their strategy through Redwood Summer, offered support in the press where appropriate and/or possible, and have struggled to develop a working relationship with your movement again.

SPIN, by the way, now maintains a full time fact-checking department and does run articles through a legal edit. They would be less prone to run a similar error today.

I must respond, however, to those EF!ers, lawyers and activists who attacked me for assuming in the article that Mark Davis had, in fact, cut the high-tension tower as charged by the FBI: I do understand that the crime was still alleged as SPIN went to print. In fact, actual guilt or innocence was never decided until September of 1991, and the question of entrapment still lingers. But the entire scenario in the desert was described to me, on a tape recorder, by Mark Davis in June '89 in the Maricopa County Jail. This was before he had a lawyer to look after him, and I literally had to keep turning off the recorder and advise him not to reveal incriminating details to me. Most reporters would call me a fool for not letting him spill the entire story, but I was confused by his lack of caution or fear.

When I was in Prescott to research my story, Ilse Asplund was still unindicted. In fact, she never gave me any indication that she was in danger of being prosecuted. Clearly motivated by respect, love and concern for Mark, Peg, Marc and Dave, she gave me details which she probably would have withheld under advice from a lawyer.

The whole infiltration program and eventual prosecution turned out to be much more complex than I, or the AZ 5 themselves, had imagined. With clarity of hindsight, I wish I could have picked up the trail in June 1990, rather than June 1989. This would have thrown the sabotage act and the so-called conspiracy charges into clearer perspective. I also would have been in a position to say "no" to some of SPIN's lurid editorial urges. As an example of how it should have been done, I urge everyone to look up David Quammen's brilliant piece on the AZ 5 in Outside magazine.

I offer the entire EF! movement, as well as Wild Earth readers, contributors and staff, an apology. Misreporting, even when not malicious, is damaging. More importantly, I offer an apology to the AZ 5: Mark Davis, Peg Millet, Marc Baker, Ilse Asplund, and Wild Earth executive editor Dave Foreman.

You will continue to see my byline in San Francisco newspapers and national magazines, and I can ask only for your cooperation in delivering straight, accurate reporting and stories in the future.

For All That Is Wild,
Dean Kuipers

HELP FOR REFUGES NEEDED

The US Fish and Wildlife Service is currently engaged in its second attempt to formulate a politically acceptable management plan for the entire National Wildlife Refuge System through the year 2003. This plan will determine whether our Wildlife Refuges will, for a change, be managed as Wildlife Refuges as opposed to taxpayer subsidized fishing camps, hunting preserves and cash cows for the likes of the oil, timber, mining, cattle and fur industries. Currently, public opinion is running decidedly against refuges as refuges (6280 letters for continued killing vs 723 against). If environmentally concerned members of the public remain uninvolved, there will be little left to save come the next plan revision in 2004. The fate of millions of

acres of wild lands and billions of living things are at stake. Write immediately to the address below, asking to be put on their mailing list and to be sent all previously mailed Refuges 2003 materials. The Draft Management Plan/Environmental Impact Statement will be released to the public this April. Get on the mailing list, comment on the Range of Alternatives, then upon receipt, comment on the DRAFT MP/EIS.

Refuges 2003 Planning Team
US Dept. of Interior, Fish and Wildlife Service
Mail Stop—670 ARLSQ
1849 C Street NW
Washington, DC 20240
—Allen Kreger, Norfolk, VA

DEFINITIONS DESIRED

I have received every number of *Wild Earth*, and have read them thoroughly. I'm wondering about some of your mantras, specifically, "biodiversity," "stability," and "conservation biology."

I think I have a good understanding of what biodiversity is, but I wonder what is its value, its importance. It seems from reading *Wild Earth* that biodiversity is of utmost importance, but this sounds like unexamined dogma. Related to this, of course, is the value of stability. I wonder if you could devote some space to a basic explanation of biodiversity and its significance. A definition of conservation biology would also be useful. I guess I'm looking for a statement about the intellectual underpinnings of your outlook.

Otherwise, I'm a big fan of *Wild Earth*. Besides the editorial content, one thing I especially appreciate about it are the line drawings/illustrations, rather than the glossy killer scenery and wildlife shots in other conservation publications.

—Denise Jones

SCIENCE EDITOR'S NOTE: CONSERVATION BIOLOGY, BIODIVERSITY, AND STABILITY

In response to a reader's query about three of our "mantras" at *Wild Earth*, I will do my best to define briefly what conservation biology, biodiversity, and stability mean. This won't be easy, because these are three of the most contentious terms in all of biology.

Conservation biology is science in the service of conservation. It is a mission-oriented, applied science, analogous to emergency medicine. Conservation biologists have a job to do and that job is to find out and demonstrate how to save the biodiversity (see below) of planet Earth. Although biology and

its subdisciplines—especially ecology, systematics, and genetics—are the core disciplines of conservation biology, the practice of conservation biology brings in philosophy, sociology, political science, law, history, geography, the natural resource fields, and other disciplines, as they relate to conservation problems. Some people consider conservation biology a "metadiscipline" that transcends its component subjects by uniting what each has to offer into a truly holistic problem-solving approach. One note of caution: The **science** of conservation biology can tell us, in part, how to solve environmental problems, but it cannot tell us what the optimal solution is. The optimal solution—for instance, wild, natural ecosystems with all their native species—is defined by values and environmental ethics.

Biodiversity (short for biological diversity) is the variety of life and its processes; how to save it is the primary subject matter of conservation biology. Biodiversity encompasses the diversity of species across the Earth, the diversity of genetic material within species, and the diversity of habitats and ecosystems at various spatial scales. It also includes the evolutionary and ecological processes that generate diversity and keep ecosystems functioning. Biodiversity is not just a numbers

game. If we increase local species diversity by disturbing an ecosystem and bringing in weedy species that thrive on human disturbance, we may alter the unique character of that area and contribute to homogenization of ecosystems globally. Furthermore, all ecosystems are valuable and contribute to biodiversity, not just the species-rich tropical forests. Biodiversity is best seen, not as an indicator of environmental health, but as something with intrinsic value that is worth fighting for everywhere.

Finally, **stability** is a vague concept that ecologists have argued over for decades and defined in myriad ways. "A thing is right," wrote Aldo Leopold, "when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." But Leopold was writing poetically; he never meant, it seems, for these terms to be interpreted rigorously. Ecologists have defined stability in terms of **resistance** (the ability of a community to stay the way it is), **resilience** (the ability of a community to bounce back after a disturbance), and other qualities. Some ecologists say that diversity leads to stability. Others say diversity leads to instability. Still others say that stability leads to diversity. Some diverse ecosystems, such as tropical

STATEMENT OF PURPOSE

Wild Earth is a non-profit periodical serving the biocentric grassroots elements within the conservation movement, and advocating the restoration and protection of all natural elements of biodiversity. Our effort to strengthen the conservation movement involves the following:

- We provide a voice for the many effective but little-known regional and ad hoc wilderness groups and coalitions in North America.
- We serve as a networking tool for grassroots wilderness activists.
- We help develop and publish wilderness proposals from throughout the continent.
- We aim to complete, and subsequently publish in book form, a comprehensive proposal for a North American Wilderness Recovery Strategy.
- We render accessible the teachings of conservation biology, that activists may employ them in defense of biodiversity.
- We expose threats to habitat and wildlife, and offer activists means of combatting the threats.
- We facilitate discussion on ways to end and reverse the human population explosion.
- We defend wilderness both as *concept* and as *place*.

forests, are very sensitive to some kinds of disturbance, such as clearcutting, and therefore may be called unstable. On the other hand, impoverished ecosystems, such as a natural forest converted to a tree farm, are generally very unstable by any measure. A better goal than maintaining stability, perhaps, is fighting impoverishment.

—Reed Noss

NORTH WOODS ACTION

The Northern Forests desperately need our help! Huge, multi-national logging corporations and greedy land developers are threatening this virtually unprotected area.

Redwood Summer was a massive grass roots effort in northern California to stop the destruction of the old growth Redwood forests. In this campaign, thousands of people gathered to protest the decimation of the vanishing forests. It was a completely nonviolent effort. People climbed trees, blocked logging roads, and hung banners; there was no tree spiking or monkey wrenching endorsed by any of the organizers.

Action is needed now to inform the country of the precious natural resource that will be lost through logging and development of our Northern Forest. We are proposing a campaign for the Northern Forest similar to that of Redwood Summer. Join us in the "North Woods, Action Now!" campaign by sending comments or planning ideas to: Earth Action!, University of Maine at Presque Isle, Presque Isle, ME 04769.

—Brian Charette, Melanie Johnson

LICENTIOUS PARADES AND ISLAND CIVILIZATION

I have the greatest respect for Roderick Nash, and don't want to cavil at his "Island Civilization" editorial, most of which I rather fancy. But I always feel like pulling out a Missouri driver's license whenever evolution and technology are mentioned in the same breath. And there it is when Roderick suggests that technological culture involves the "right [of humans] to fulfill their evolutionary potential." This happens to be a particular bee in my bonnet, but it's also a broader intellectual issue for biocentric thought: since Darwin, representations of evolution have been used to further all kinds of credos, good and bad, by urging that they have the inevitability of natural history behind them. I think I have the backing of the biological sciences, however, when I say that in fact there isn't one scrap of evidence that evolution has any goal, much less that it's our fantastical and probably

transitory culture. To suggest otherwise is to relegate to the backwaters of evolution every society that hasn't gone down our technological superhighway, a banishment that applies to, among others, tribal peoples whose sophisticated and subtle way of life makes ours look like a mud-wrestling competition.

Whether a culture chooses to go down the path of technology, or the agrarian path, or the hunter-gatherer path, involves just that, a choice, not evolutionary manifest destiny (though evolutionary constraints may make those choices viable or not). There are certainly arguments to be made for high technology in all its gaudiness, though most are lost on my reptilian brain. One of them is not, however, that evolution was secretly planning the computer chip all along. We shouldn't even try to crowd the extravagant, whirling, licentious parade of evolution into the narrow grammar of our philosophical velleities.

—Christopher Manes

ESCHEW GIMMICKRY

As much as I appreciate Prof. Nash's voice on behalf of wilderness, his island civilization essay seemed to add little new to the debate. Yes, we are headed for a crash. Yes, we do need visions—long-range, short-range, and medium range. But controlling our population and controlling sprawl aren't new concepts, nor is the idea of mutual respect—intraspecies and interspecies.

And the idea of technology as savior, nuclear power as good tools gone wrong, the Italian/Greek city-state model of the future with mile high cities (or "habitats" if you prefer architectalk chic) of 3 million or more with only the young allowed out in the wild ain't my vision. John Davis is too kind. I think 80% of Rod's vision misses the ecological lesson of the paleolithic and the radical challenge of the technolithic. As Dolores LaChapelle, also an historian, so aptly documents, the point is not tool skills but intuitive pattern recognition. What we need is Zwerkin's devotion, not centralized cities surrounded by agricultural and wild commons. What we might aspire to is the practice of the wild, as Gary Snyder says, not the isolation of the wild. We need to incorporate ourselves into the equation as hunter/gatherers with ritual richness of dance and song and story that speaks the voice of the wild.

My vision of the future would be a combination Penan-Rainbow Family-Hopi amalgam, tied to the watershed, reinhabiting the earth in numbers John suggests, hopefully eschewing the cultural gimmickry of accumulation for the deep truth of dreamtime. Read Dorothy Bryant's *The Kin of Ata Are*

Waiting. That's the kind of "civilization" we could aspire to, where waking life is all preparation for dreaming.

For better, or maybe worse, we humans are spirit as well as flesh and the potential future for our species must explore the untapped psychic power of our joined circles spiraling as minds—one mind of many minds.

Materialism only is never the answer. Let our bodies go back in time to the material balance of the first peoples and our minds dance outward in the future's nebula—replicating leaps beyond the wildest fancy of our computers.

That's another vision. Now let's get back to saving what wilderness we can in this pre-glacial interim of the late technolithic.

—Art Goodtimes (Cloud Acre)

WE V. TV

The problem with *Wild Earth* is that the articles are too long and can't be read during commercials in between my favorite TV shows. Perhaps if your writers could shorten their work to about 3 paragraphs, then many TV addicts like myself could still watch TV and read *Wild Earth*.

—The TV God

DEAR WILD EARTH,

The National Park Service is currently finalizing a proposal for Isle Royale National Park in Lake Superior called the "Rock Harbor Development Plan." Rock Harbor, on the east end of this 50 mile long island, is the most developed part of Isle Royale, with a large pier, a number of docks for smaller boats, a convenience store with showers and wash machines, marine gas pumps, boat rentals, restaurant, lodge, rental cabins, large campground with shelters, Park Service housing, and a dormitory for concession workers. While the interior of Isle Royale is protected under the Wilderness Act, the adjoining waters of Lake Superior and certain shoreline locations, such as Rock Harbor, are not. Motor boat use in non-protected waters is steadily increasing.

For a number of years there has been a debate on whether to increase facilities at Rock Harbor to accommodate more non-wilderness users, or to reduce the level of development. The new proposal will contain the options of more development, status quo, or reducing currently existing facilities. A final draft will be available around the end of April. Oral public comment will be taken on the 28th or 29th of May, with written comments accepted from May 25 through June 25 of this year.

The Beauty Way

at Dos Pilas in the Petexbatun bush
Demarest & crew have unearthed Ruler 2

the pre-disappearance Mayan king who
brought Empire to the New World

long before Cortez * Columbus * it's not
Homo sapiens Danaoi that's at fault

or rednecks in Georgia pickups
animals lust by nature & self

conscious apes create culture
to tame themselves * ego animus

masks its instinctual desire to rape
plunder * make the Other submit

under a veneer of polished wit
makeup * fur & flannel * while ego anima

dreams of eating out another's face
feeding on what it feeds * nurtures

we all hide the dark side
& pretend all we see's the light

when truth is * as the Cochiti woman
drew in the dust once * it's all a wheel

where dark circles light
& we walk the dangerous rim

—Lone Cone Free Poem
Cloud Acre

I urge Wild Earthlings who know and love the wilderness and biological uniqueness of Isle Royale to obtain a copy of the "Rock Harbor Development Plan" proposal and submit written comments. To request a copy, write to Isle Royale National Park, 87 Ripley, Houghton, MI 49931.

Kraig Klunghess, Michigan



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GET ALONG LITTLE DOGGIES...

by Dave Foreman

In one of the chapters of *Confessions of an Eco-Warrior*, I admit my sympathy—hell, let's be honest, it's *empathy*—for ranchers. I'm still as soft in the head for the romantic ideal of Western cattle culture as you'd expect from a once-upon-a-time horseshoer who's had his head stove in one time too many by hard hooves. Ridin' and ropin' and brandin' still pull on me like a tether pulls an ornery mule at the end of the pack string.

I support ridding the Western range of domestic bovines reluctantly, sadly, and regretfully. I am not a member of the anti-cow vigilante squad because I dislike cows or their boys. I have arrived at this bitter spring because it is the only waterhole around—all of the rest have been stomped to shit.

In *Confessions* I tally the arguments against livestock grazing in the arid West. That accounting brought me to the unavoidable conclusion that the range livestock industry had caused, and continues to cause, more damage to Western ecosystems than any other factor. George Wuerthner recounts the evidence in his companion piece in this issue of *Wild Earth*. Denzel and Nancy Ferguson compiled piles of data in their *Sacred Cows at the Public Trough*. In his new book, *Waste of the West*, Lynn Jacobs ladles out the facts against grazing like a chuck wagon cook might serve beans—lots of 'em. And like plumes of silt washing into reservoirs such as Powell and Ft. Peck from cow-burnt watersheds, hundreds of scientific studies and scholarly reports erode away any legitimate basis for open range livestock grazing.

The story the land tells is a devastating indictment of the cow century. It is our task to publicize this story and to demand an end to the domination of one-third of the United States by the range livestock industry. Ever since Johanna Wald of the Natural Resources Defense Council filed suit back in the 1970s against the Bureau of Land Management over its national environmental impact statement on grazing management, we've had the ranchers' attention. With more recent demands to

eliminate cattle and sheep grazing from our public lands, we have frightened them. They are scared that the growing anti-cow movement might just stampe them out of the country like a midnight thunderbuster on the Chisholm Trail.

And yet I fret about the rancor some of us bear toward all ranchers.

Recently a group of thoughtful, progressive livestockmen, who run cattle on the Coronado National Forest in southeastern Arizona and southwestern New Mexico, stepped back and looked on our complaints like they might peer at some unknown rattlesnake. In times past they would have killed the snake and ridden on. But if what they say is true, they have listened to our buzz, have learned something from it, and might be willing to sit down and honestly palaver over their place on the public lands.

Now, I've been suckered by the cowboys before (my wife tells me that I've been suckered by more than cowboys and that it's not all past tense either, but that's another story). So, if there is to be any talk of co-existence between cows and the land, between ranchers and conservationists, there has to be some general agreement before we come to the table. Some of us may be willing to pull back from "Cattle Free in '93" if the livestock industry agrees to a few things:

1) Stocking levels in general should be severely reduced so erosion is reduced to natural levels and forage begins to increase.

2) No grazing should take place in riparian areas.

3) Rangelands in poor condition should be retired from ranching.

4) Grazing should be eliminated from large tracts of public land that are too arid or otherwise ecologically sensitive.

5) Predator control for livestock protection must end.

6) The extermination of prairie dogs must end.

7) Wolves, Grizzlies, and other extirpated predators should be reintroduced where suitable wild habitat remains. Elsewhere they should be reintroduced after habitat has been restored.

8) The bulk of the public lands should be

designated as Wilderness and other protective classifications.

9) Grazing should not be permitted in Wilderness Areas, National Wildlife Refuges, units of the National Park System, and other special classifications.

10) Unnecessary dirt roads, fences, and other "improvements" for grazing should be removed or closed.

11) Rehabilitation of abused rangelands should become a major priority for land managing agencies, livestock operators, and conservationists.

12) Ranchers must be willing to criticize and cut out from the herd the "bad apple" ranchers.

I'm not so much of a greenhorn as to think that the leadership of the National Cattlegrowers Association is going to give in to these demands any sooner than Shamir is going to withdraw settlements from the West Bank. What I am outlining here are prerequisites that must be accepted before many of us are willing to discuss the continuation of any livestock grazing on the public lands. I am tired of hearing about how ranchers are the "original environmentalists" and how much they love the land. If they are serious, accepting the above laundry list will be easy for them.

Regardless of what happens at this OK Corral, the practical question remains: How do we eliminate or at least drastically reduce commercial livestock grazing on the public lands without causing excessive economic dislocation? What are the politically practical options? (I'm pretty freewheeling in what I consider politically practical.) In *Confessions*, I offered my ideas for fair, inexpensive ways to free our public lands from livestock. I think they remain among the most feasible approaches, and I offer them again. My suggestions consider both the health of the land and the well-being of good-hearted ranchers. I propose four possible routes for the elimination of cows and sheep from the public lands:

1) Establish Open Bidding For Grazing Rights

Currently, a grazing permit on Forest Service or BLM lands is tied to a private property *base*. The federal lands grazing permit, in effect, becomes part of a ranch that may

also include private and state grazing lands. When the private base property is sold, the federal permit goes along as part of the ranch. Ranchers even borrow money on the basis of their federal permits.

By federal law, grazing fees for federal permittees are kept extremely low. In 1990, the average grazing fee charged by the BLM and Forest Service was \$1.81 per Animal Unit Month (AUM). In other words, for a dollar eighty-one, a rancher can leave a cow and her calf on federal land for a month. (They eat everything they can while they are there.) By comparison, the average AUM rate for comparable private land from 1964 to 1984 was \$6.87. Some military reservations offer grazing rights on a bid basis. This grazing goes for several times what ranchers pay for BLM or Forest Service AUMs. A minor scandal erupted in the 1980s when it was discovered that about 10 percent of federal permittees were subleasing grazing rights to other ranchers for four or five times what they were paying the government, and were pocketing the difference.

A bidding system, not tied to a base property, for all public land currently in grazing allotments would have several advantages:

- The government would be paid closer to fair market value for forage and browse, eliminating at least part of the subsidy the taxpayer currently provides to welfare ranchers.

- Because ranchers would no longer have what are essentially lifetime grazing privileges, and would not be able to treat federal grazing lands as part of *their* ranches, federal agencies would have greater power to check overgrazing and other abuses. Other interest groups, including conservationists and recreationists, would have more influence as well.

- Marginal or incompetent operators would be driven out of business, which is what a competitive market place is supposed to do.

- Finally, conservation and wildlife groups could bid on federal grazing permits. You want free enterprise? Fine. For a couple of thousand dollars, a group of hikers, bird-watchers, fishers, hunters, or Deep Ecologists could get a grazing permit and elect to graze Elk or quail or trout—or wolves—or all the above. For no more than grazing permits cost, conservationists could block up million-acre chunks of public land and remove the cattle. This could allow widespread wilderness restoration. For this to take place, a change in policy would be required to allow the permittee to take voluntary non-use of livestock grazing. Current regulations allow the government to take a permit away if the permittee does not graze livestock.

2) Establish an Honest Welfare System

One seemingly powerful argument for

perpetuation of welfare ranching is community stability. Even though a cow county like Elko, Nevada, derives only about 5 percent of its total income from livestock grazing, myth has it that ranching is the backbone of the economy in many areas of the West. Fine. Let's continue the welfare. Let's just not subsidize the destruction of public land.

Determine the average *profit* derived from the public-land share of a rancher's operation over the last ten years, and send the rancher a check for that amount every year for the rest of his or her life. He could continue to run cows on the land he owns, but not on National Forest, BLM, National Wildlife Refuge, or National Park lands. Surprisingly, this would cost the federal government *less* than even the most direct traditional subsidies to ranchers. It would also eliminate the hidden but much greater ecological cost of degraded rangeland, watersheds, wildlife populations, and wilderness.

Moreover, former grazing permittees could be given beneficial work. The government could hire them to remove unneeded ranching improvements such as cattle guards, windmills, fences, and pipelines; to close roads; to install erosion control structures; and to remove exotic plants and replant natives.

Let us remember that we are talking about a very small number of people being affected by such a phase-out. Only 27,000 individuals hold grazing leases on the federal lands. Of the 3.3 million residents of Arizona, for example, only 3792 raise livestock and only 1323 of those hold grazing leases for federal lands. Many of these 27,000 lease holders are only part-time ranchers. Thousands are large cor-

porations or wealthy urbanites like physicians and attorneys (hobby ranchers). Of the small number of "real" ranchers, many hold regular jobs in town or own a gas station, and play cowboy each weekend. In other cases, their wives work as school teachers or beauticians and bring home the real paycheck.

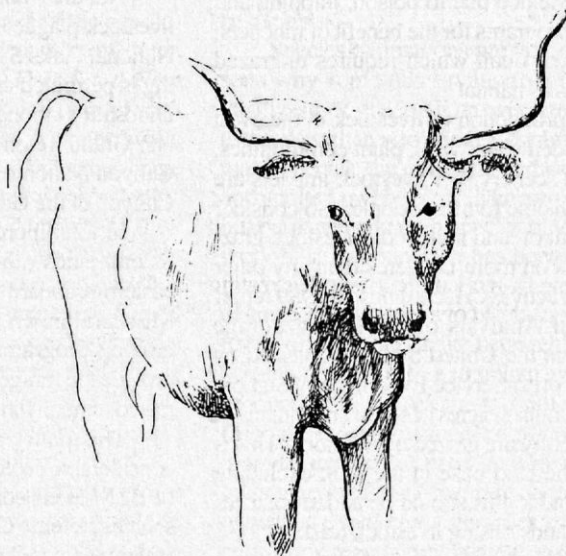
3) Buy 'em Out

An alternative way of effecting the above would simply be to calculate the actual value of the man's public-lands grazing permit and buy it from him, say, by equal installments over the next ten to twenty years. An economist can figure out the relative advantages and disadvantages of the two methods. Heck, we could let a welfare rancher pick his own type of subsidy. It will still cost us and the land less.

4) Run Buffalo Instead of Cows

In those areas, primarily on the Great Plains, where Bison were present before their extermination by Euroamericans, a less draconian alternative would be to require ranchers to run Bison on their federal permits instead of cattle or sheep. Bison are native, they eat less grass, require less water, aren't bothered by predators or severe weather, and their meat tastes better. Some ranch owners, including Ted Turner, are doing this already on their private lands.

The cowboy was an ephemeral transient through the American West, like the earlier mountain man. We cannot bring him back. But we can bring back the geography through which he rode—the Wilderness. Preserving the land is far more important than subsidizing a destructive life style available only to a few thousand individuals in the United States.



Some Ecological Costs of Livestock

by George Wuerthner

To most Americans livestock grazing seems an integral part of the Western scene. They see ranching as a benign use of the land and assume it contributes significantly to national food supplies. But what does it cost in ecological terms to sustain the ranching lifestyle and is this cost justified by the food produced? No complete accounting in terms of things wild, natural, and free has been done, but even a preliminary overview suggests that livestock production may well be the most serious environmental problem in the entire western United States.

Let's look first at a 1988 report issued by the Arizona Game and Fish Commission on threatened wildlife. Of native Arizona bird species, livestock grazing and production is implicated in the decline of 5 out of 11 species considered Endangered in the state, 6 out of 11 listed as Threatened, and 12 out of 20 species considered for listing. Of Arizona mammals, 10 of 14 species listed as Endangered, 3 of 4 considered Threatened, and 4 of 6 candidate species were all impacted by domestic livestock production. Species affected include the Mexican wolf, now extinct from the wild north of Mexico due to poison, trapping and shooting programs for the benefit of ranchers; and masked quail which requires ungrazed grasslands as habitat.

The production of livestock in the West has degraded waterways, plant communities, soils, and scenery; yet livestock impacts are nearly invisible to most people. So consider the amount of land involved. Livestock grazing occurs on more US acres than any other exploitive activity. According to a 1989 report titled "An Analysis of the Range Forage Situation in the United States" published by the U.S. Forest Service Experimental Station, some 841 million acres of forest and rangeland in this country are grazed by livestock. This is 44% of the land base in the U.S. excluding Alaska; and to this should be added pastures and croplands raising livestock feed.

Grazing dominates an even greater proportion of our *public* lands. More than 163

million acres or 89% of Bureau of Land Management (BLM) lands and 97 million acres or 69% of Forest Service lands are leased for livestock production.

Even some National Wildlife Refuges are refuges more for cattle than for native species. Indeed, 103 out of 109 Wildlife "Refuges" in Region 6, which includes Montana, Colorado, Wyoming, and several plains states, have livestock grazing. A recent General Accounting Office report on National Wildlife Refuges noted that 55% of the Refuge managers contacted viewed livestock grazing as harmful to their Refuges.

One of these is Barry Reiswig, the new manager of the Sheldon National Wildlife Refuge in Nevada. During a range tour last summer, Reiswig explained the problems he had with livestock. "Nearly all of the refuge funding goes towards managing cattle owned by eight permittees. What little is spent on wildlife is mostly damage control. It's not making things better for wildlife, unless you call mitigating impacts from livestock making things better. While I have people to build and maintain fences, stock ponds, water pipelines and other development for the permittees and a range conservationist to oversee the grazing program, I don't have one biologist on my staff—and this is supposed to be a wildlife refuge."

Nor are National Parks immune from the livestock plague. Among the units within the National Parks System where livestock grazing is permitted are: Badlands National Park, Dinosaur National Monument, Capitol Reef NP, Grand Teton NP, Great Basin NP, Glen Canyon National Recreation Area, and Black Canyon of the Gunnison NM.

In total more than 260 million acres of federal lands (an area the size of the entire eastern seaboard from Maine to Florida with Missouri thrown in) are leased under federal grazing programs. Yet these federal lands provide the forage for less than 3% of the meat raised annually in the United States.

This paltry amount of meat comes at considerable ecological cost. A 1989 analysis of BLM lands completed by the Natural Resources Defense Council and National Wildlife Federation concludes that 68% , or more than 100 million acres, of the BLM lands reviewed

were in "unsatisfactory" condition. This is an area equivalent in size to all of New England, Pennsylvania, New Jersey and New York combined.

"Unsatisfactory" means fifty percent or more of the key plant species are absent. To put this into perspective, imagine that half of the major tree species in the Northeast, were functionally extinct in the ecosystem due to acid rain or some other human-caused malady. No maples. No birch. No oaks. No white pine. Some would not call the situation merely "unsatisfactory."

Despite all we hear about how ranchers love the land, private rangelands are in even worse shape than public lands, even though these lands are generally more productive and less vulnerable to degradation. A 1987 National Rangelands Inventory conducted by the Soil Conservation Service estimated that 64% of private rangelands were in unsatisfactory condition. This is more than 270 million acres—an area nearly equal to the total of public rangelands in the West. A 1980 Department of Agriculture summary on rangelands estimated that more than 85% of the Western rangelands—public and private—were at 60% or less of their potential productivity!

The livestock industry attempts to persuade the public that the "majority of our rangelands are stable or improving." This statement is correct as far as it goes, but it sends the wrong message. The truth, according to 1989 figures from the Society for Range Management, one of the organizations helping to distribute this deceptive message, is that most of the lands are stable in poor or fair condition. Only 15% of rangelands are improving. Approximately 14% are still declining. One could, then, say the "majority of our rangelands are either stable or declining" and be equally correct and sending a very different message.

The problem is that ranchers are using the *wrong* animal in the *wrong* place as a foundation for an agriculturally based economy which is not sustainable in this region. The main factor limiting Western livestock production is aridity. West of the 98th parallel, precipitation becomes much more unpredictable; drought is common. Also evaporation rates are higher.



Some of the early explorers of the West recognized these inherent limitations. John Welsey Powell, first person to run the Grand Canyon of the Colorado, as well as first director of the U.S. Geological Survey, noted in his landmark 1879 report on "Lands of the Arid Regions of the United States" that traditional lines of settlement and agriculture would not work in the West. Powell wrote: "Though the grasses of the pasturage lands of the West are nutritious they are not abundant, as in the humid valleys of the East.... These grasses are easily destroyed by improvident pasturage, and they are replaced by noxious weeds.... They must have protection or be ruined ..."

Such views of the West did not appeal to Chambers of Commerce, railroads, and land speculators who portrayed the West as a land watered by "ample streams and numerous artesian wells." Some even said water would follow the plow. What really followed the plow was the Dust Bowl.

Yet even today, most people in the West fail to accept that they live in a dry, fragile environment. Droughts are viewed as some kind of oddity, but as historian Walter Prescott Webb observed, "at the heart of the desert there is no drought, there is only an occasional mitigation of dryness."

Since forage production is largely a function of precipitation, livestock producers in the East can feed far more animals on far fewer acres. In humid Georgia, you can raise a cow year round on an acre or less. In arid Nevada, it may take over two hundred acres to board the same cow. Not surprisingly, then,

despite its size and the fact that nearly the entire state is devoted to livestock production, the public lands in Nevada only manage to raise as much meat as Vermont, a state barely larger than Yellowstone Park. Indeed, Nevada ranks 49th in agricultural production, just in front of Rhode Island, our smallest state. Farmers in the East, Midwest and South raise the vast majority of the nation's livestock (not without their own ecological impacts).

Aridity also makes cattle a particularly poor choice as the major Western range animal. Cows comprise the vast majority of domestic stock nationwide, with sheep a distant second; yet cattle evolved in moist woodlands in Eurasia, and as a consequence of their evolutionary heritage, are inefficient users of water. John Robbins, author of *Diet for a New America*, says that each pound of beef produced requires 2500 gallons of water, while the amount of water needed to raise an average sized cow is sufficient to float a battleship!

Because of the water demands of their stock, plus the need to increase forage production, the Western livestock industry has used up much of the West's precious water. In Montana for instance, water use by industry and communities only accounts for 2.5% of the water removed from waterways, while agriculture, primarily stockgrowers, use the rest—97.5 percent! Nevada, the most arid state in the nation, receiving less than 9 inches annually throughout the state, still allots 90% of its water to fields of hay and alfalfa—crops ultimately fed to domestic livestock.

If you unmake a desert someplace by the

transfer of water, you create a new one someplace else—and in the West the new desert is usually on public lands. Dried up springs, dewatered rivers, groundwater declines are all consequences of this unwise use of scarce water. Not surprisingly, native fish are among the most threatened species in the West. For instance, at least seven types of fish native to Nevada are extinct throughout their range and another four types are no longer found in the state though they still exist elsewhere—in nearly all cases, the cause is loss of habitat due to dewatering. Groundwater pumping to water hay fields is the chief reason the Bruneau Hot Springs snail in southern Idaho may soon be extinct.

Species extirpations are among the reasons why some conservationists now argue that livestock grazing is an even greater threat to the West than is logging. Logging threatens many species, the red-cockaded woodpecker and spotted owl being well known examples, but perhaps no known species other than the ivory-billed woodpecker has been extirpated from this country by logging; whereas dozens of species, from snails to black-footed ferrets to Mexican wolves, have been regionally extirpated or driven to extinction by livestock production in the West. [*Science ed. note: George is too easy on loggers. Many local and regional extinctions are traceable to logging and associated road-building, including loss of distinct populations, varieties, and subspecies. For example, sedimentation from roads and clearcuts has been primarily responsible for the extinction of several salmonid stocks*

in the Pacific Northwest and many more are endangered. Logging has been a contributing factor to the extinction of many more species and subspecies. Populations of many species have been so fragmented by logging and road-building that they have a very low chance of long-term persistence. Worldwide, logging (deforestation) is the single largest cause of extinction.]

Irrigation is also the reason for the many dams that now choke our Western rivers. We'd have far more wild and free rivers in the West were it not for the livestock industry.

Dams and reservoirs fragment river ecosystems in much the same way that clearcuts fragment forest canopies, blocking migration and genetic exchange between lifeforms. And since waterways are important migration corridors, even for land mammals and many bird species, the drowning of river valleys has had significant, but rarely noticed, long-term ecological consequences for untold numbers of species in the West.

Dams result in dewatering of streams and rivers. In the low humidity West, water is lost rapidly to evaporation. More than 600,000 acre feet of water evaporates each year from "Lake" Mead—more than most reservoirs even hold.

Dewatering concentrates pollutants, including pesticides, fertilizers and mining wastes. As waterways shrink, so does habitat for aquatic life, which means less prey for many animals: fewer airborne insects for birds and bats, fewer fish for mink, river otters and bald eagles...The impacts ripple throughout the ecosystem.

Cattle have other impacts on water that the public seldom notices. Compaction of soil by countless hooves significantly reduces water infiltration. Instead of soaking into the soil, water runs off rapidly, causing the increased erosion, gulying and channel down-cutting so prevalent throughout the West. Soil compaction also changes the timing of flows, reducing water discharge during summer when water is most needed. Elimination of livestock grazing from a 5 mile stretch of Mahogany Creek in northern Nevada led to a 50% increase in summertime flows over a ten year period.

The EPA estimates that livestock grazing on rangelands accounts for 28 percent of the annual sediment production in the West, second only to croplands. High sediment loads smother aquatic insects and fish eggs.

Related to impacts on water courses is the damage livestock inflict upon riparian zones, those thin green lines of lush vegetation adjacent to streams and springs. In the arid West nearly all animals depend in one way or another on these relatively productive oases. According to a 1988 General Accounting Of-

fice report, riparian zones comprise less than 1% of the land base in the West. A study in eastern Oregon documented that 75-80% of native animal species depend partially or fully upon this scarce habitat. An EPA publication titled "Livestock Grazing on Western Riparian Areas" reported that more than half of the birds in the Southwest are completely dependent upon riparian zones.

If we passed an Endangered Ecosystems Act, riparian plant communities would be among the first ecosystems listed. Arizona Fish and Game reports that less than 3% of the state's riparian zones remain intact. Many factors are responsible for this decline, including highway construction and water impoundments, but according to the 1988 GAO report on riparian zones, "poorly managed



livestock grazing is the major cause of degraded riparian habitat on federal rangelands." And despite all the propaganda coming from federal agencies and livestock advocacy groups about "riparian improvements with grazing" and "change on the range," a 1990 EPA riparian report concluded: "field observations in the late 1980s suggest riparian areas throughout much of the West are in the worst condition in history."

The 1980 GAO report noted that 80 percent of the 11,864 miles of riparian habitat on BLM lands in Idaho are in "some stage of degraded condition." In Nevada, one BLM district reported that 93% of its riparian habitat in one resource area and 86% in another were in poor to fair condition. The Tonto National Forest in Arizona reported that 80-90% of its stream riparian areas were in "unsatisfactory" condition.

In many riparian areas, cattle eat almost all the tree seedlings. The loss has been masked because many "historic" large old trees remain, but as they die, they are not being replaced.

In the Southwest, cottonwood has declined to the point that some cottonwood forest communities may be threatened with

extinction. The Arizona Nature Conservancy reports that Fremont cottonwood-willow forest communities—once common throughout the state—are now globally threatened, with only twenty known occurrences left in the state and only five of these extensive.

Cottonwoods as a genus are not likely to go extinct in the West, because they are widely distributed; but any reduction in their overall numbers is of concern. Cottonwoods can be considered "keystone species" because many other plants and animals depend upon them for food, shelter, and other amenities.

Cottonwoods are among the few species in the arid West that attain significant height, hence they play a role similar to that of old-growth Douglas-fir in Pacific Northwest forests. Cottonwoods provide large branches to support the nests of raptors, such as bald eagles and black hawks, and of great blue herons. Cottonwoods are among the few trees in the desert big enough for the nest cavities of bluebirds and woodpeckers. Some species of bats roost in tree cavities or under pieces of loose bark on dead trees. Loss of cottonwood riparian forest communities is thought to have contributed to the threatened status of the red bat in Arizona. Yet few people would think of bats as being impacted by livestock grazing.

As with the large conifers in old-growth forest, the usefulness of large cottonwood trees does not end when they die. According to Arizona State University professor Wendell Minckley, "once the large boles fall into streams, they provide hiding cover for fish, long term nutrient sources for aquatic ecosystems and help to stabilize streambanks."

Grazing of streamside vegetation affects nesting songbirds, raptors and small mammals. Trampling and removal of vegetation by livestock upsets streambank stability; when banks slough off, channels widen and become shallower. This kind of damage is so widespread that few people in the West have ever seen a healthy stream channel.

These changes in stream channel morphology adversely affect fish. Fish populations are dramatically lower in grazed waterways, and the average individual size tends to be smaller. Grazing impacts to stream channels and riparian habitat have contributed to the decline of salmon runs in the West. This in turn hurts predators dependent upon fish for prey—the bald eagle, an Endangered species, again being among the victims.

Recent years have seen a growing recognition of the impacts of livestock upon riparian zones, but reducing these impacts is not easy. Cattle are drawn to waterways like flies to garbage. Even if you significantly reduce livestock numbers, the remaining cattle will still congregate in these green, lush waterways.

"It only takes a few cows to trash a riparian zone," says refuge manager Barry Reiswig, "they just stay there longer, doing the same amount of damage as if you had three or four times the number."

The usual means of dealing with this problem is to improve "distribution." This often entails more manipulation and development of public lands, including new fencing, construction of stock ponds, spring developments, pipelines, roads, and holding facilities—at taxpayer expense—to keep privately owned cattle out of public water courses. It is analogous to building taller smokestacks to disperse pollutants and having the taxpayer pay, rather than reducing the amount of pollution being produced.

BLM lands in Oregon's Trout Creek Mountains provide an example. The agency response to severe riparian damage caused by livestock on the Whitehorse Butte Allotment, which threatens Lahontan cutthroat trout, an Endangered subspecies, is to build range developments to "improve distribution." The inexpensive and obvious solution is simply to terminate the grazing permit. Instead the BLM proposes to spend over \$400,000 of taxpayer money to construct water pipelines, stock ponds, and 18 miles of new fencing—some of it within two Wilderness Study Areas. The permittee's annual payment of a little over \$7000 (after range improvement and county grazing board funds are subtracted) for grazing 126,000 acres of public land (18 cents an acre) will not even cover the estimated cost of pipeline maintenance, much less the construction of these developments, administration of the grazing leases, monitoring, and other costs associated with the private commercial use of public lands.

Even if we wanted to spend hundreds of millions of dollars to fence the thousands of miles of riparian habitat in the West, it would not alleviate all impacts from livestock. Harold Winegar, a retired Oregon Fish and Game biologist and now riparian ecosystem consultant, explains: "Watersheds are all connected. If you move cattle out of the stream bottoms and into the uplands you will still be pounding to death the first order springs, seeps, creeks, not to mention contributing to soil compaction over the entire uplands."

Indeed such range developments as fencing riparian areas, touted as a "solution" to overgrazing, are leading to a greater domestication of our public rangelands. In essence, we are making natural landscapes ever more like feedlots.

And such "solutions" still mean that domestic animals will be removing grass and shrubs that would otherwise remain in the ground. In a recent issue of *New Scientist*

NASA researchers compared adjacent portions of the US-Mexican border. They found that cattle grazing had caused "local climatic changes." Grazed lots have less litter, hence soils heat up faster and dry out more rapidly. Heavily grazed rangelands had a 4 degree centigrade higher maximum daily temperature.

Evidence like this supports the contention that livestock grazing is the single greatest cause of desertification in the Western United States. Texas Tech soil scientist Harold Dregne calculates that some 464 million acres of public and private rangelands in the US have undergone some level of desertification, most of it the result of livestock grazing.

Even if ranchers stopped dewatering our rivers and overgrazing riparian areas and uplands, native wildlife would still be harmed by livestock production. Many domestic stock carry diseases for which native species have little or no immunity. For instance, the decline and extinction of many bighorn sheep herds is directly attributable to the introduction of diseases carried by domestic sheep.

Some livestock impacts on wildlife are subtle. Cattle and domestic sheep both eat forage that otherwise would fill the bellies of native grazers. Some of this diet overlap is obvious. Domestic sheep eat basically the same thing as their wild cousins. Other kinds of forage competition, though, are less obvious. Cattle grazing and forage competition may be a major reason why desert tortoise populations are threatened with extinction. In Nevada, bighorn sheep habitat grazed by cattle had an average of .88 sheep per square mile compared to 2.54 sheep in ungrazed areas.

Forage competition may manifest itself as cover loss. As grazing reduces hiding cover, predation losses go up. This ultimately hurts predators as well as prey. On the Malheur Wildlife "Refuge" in Oregon, more than 800 coyotes have been poisoned, trapped, and shot during the past three years to reduce predation losses of sandhill cranes and ducks. Biologists studying the Refuge published a paper last year in the *Wildlife Society Bulletin* documenting that loss of cover due to livestock grazing and haying operations was the single greatest factor in predator success. Yet, rather than reduce or eliminate livestock grazing and haying, Malheur managers have stepped up their coyote slaughter program.

Finally, what wildlife we don't destroy by allowing livestock to eat their food and trample their homes, may be killed by more direct means if considered a "pest." In 1988 Animal Damage Control (ADC), a federal agency within the US Department of Agriculture, spent more than \$29 million killing everything from prairie dogs to coyotes and even some species considered Threatened or Endangered

like grizzly bear and gray wolf. Often "non-target" species like kit fox and other animals are killed by traps and poisons aimed at "pests." The main reason black-footed ferrets went extinct in the wild is population reduction due to poisoning programs directed at prairie dogs. [Biologists recently reintroduced captive-bred black-footed ferrets to Wyoming's Shirley Basin. Rancher forbearance is considered essential to the reintroduction effort.]

Impacts to plant communities are even less obvious to most people than impacts to animals, in part because we have few ungrazed lands for controls or comparisons. One study reported in the journal *Ecology* compared an ungrazed area in Utah's canyonlands with an adjacent area that had been grazed by cattle. The livestock-free area was much richer, with double the number of species and seven times the amount of cryptogamic lichens. Even soil texture was found to differ, with finer particles in the ungrazed area. Cryptogamic lichens are important nitrogen fixers, capturing free nitrogen from the atmosphere and chemically changing it to a form other plants can use. Cryptogamic crusts also slow soil erosion and increase water infiltration.

Studies in the Great Basin documented that on the average grasses comprised 75-85% of the above-ground biomass on pristine, ungrazed sites, and only 10-15% was sagebrush. Grazed sites had exactly the opposite proportions.

In short, public lands livestock grazing has numerous documented impacts and likely many more not yet recognized, with few public benefits. So why does it continue? In part because most people fail to appreciate fully the ecological damage wrought by stock. Over the years a few conservationists have sounded the alarm over grazing. John Muir, founder of the Sierra Club, called domestic sheep "hooved locusts." Former Supreme Court Justice William O. Douglas, after a trip into the Wind River Range of Wyoming with past Wilderness Society President and biologist Olaus Murie, called the destruction caused by livestock "vandalism" and charged that if others had done what ranchers did regularly, they would be called "criminals."

Perhaps author Ed Abbey summed it up best when he wrote, "The rancher strings barbed wire across the range; drills wells and bulldozes stock ponds everywhere; drives off the elk, antelope and sheep; poisons coyotes and prairie dogs; shoots eagles, bear and cougar on sight; supplants native bluestem and grama grass with tumbleweed, cow shit, cheatgrass, snakeweed, poverty weed, mud dust, and flies—and then leans back and smiles broadly at the Tee Vee cameras and tells us how much he loves the West."

Despite the occasional words of outrage, apathy to rangeland issues prevails, even among environmental groups. For example, the Greater Yellowstone Coalition, a group monitoring environmental issues in the Yellowstone Ecosystem, will expend great amounts of staff time and money to fight one timber sale, while virtually ignoring livestock issues. This is an ecosystem where livestock grazing occurs on 50% of public lands—far more than are impacted by logging, subdivisions, mining and all other human activities combined. The Coalition merely calls for better livestock management.

This is not to denigrate the Coalition, for they are a very effective group. Unfortunately, they typify environmental groups in their view of livestock production as a relatively minor problem. Few groups acknowledge that problems ranging from the lack of wolves in Yellowstone, to the shooting of bison that leave the Park, to the Threatened or Endangered grizzly bear, black-footed ferret, and several cutthroat trout subspecies in the Ecosystem can be traced back to livestock production.

A growing number of citizens, though, are beginning to question whether “better” livestock management or reductions in cow numbers are really solutions at all. As Harold Winegar noted, reductions in cattle numbers are as effective as “a surgeon removing just some of a cancer growth—in the end it will still kill you, it will just take longer.”

Likewise, Andy Kerr, of the Oregon Natural Resources Council, says arguing about the “proper” number of cattle to have on our rangelands is like “debating about which seat you will sit in on the train to Auschwitz. Kerr says “better” management will give us more range developments.

The real question is what we want our public lands to be. Even “proper livestock management” is not the same as maintaining natural self-renewing ecosystems. Does the public really benefit by allowing its lands to function as feedlots for privately owned alien animals? The public lands of the West are about the only place where we can hope to preserve biological diversity and habitat for NATIVE wildlife and ecological processes. Termination of livestock grazing on at least most of the public lands is an essential first step toward ecological recovery.

George Wuerthner is a wildlife biologist and widely published environmental writer living in Montana.

SUGGESTED READING

1. *Waste of the West*. Lynn Jacobs, 1991 [See Book Reviews]
2. Committee on Government Operations.

BANNING GRAZING HAS POLITICAL COSTS

by Marge Sill

Recently, an organized campaign to eliminate all grazing from any wilderness areas has been inaugurated by many dedicated conservationists who have observed firsthand the terrible effects on the public lands from unmanaged or poorly managed grazing of livestock. I can certainly understand this position, but I believe the abolition of grazing in wilderness would be an extremely unwise move politically for the following reasons:

(1) Elimination of livestock grazing would open up the carefully crafted Wilderness Act of 1964 to all kinds of amendments, many of which would emasculate the Act. There is nothing the mining or off-road vehicle interests would love more than to get these issues put up for grabs. If we were busy defending (however successfully) present and future wilderness from these attacks, our efforts would be deflected from such important legislation as the 1872 Mining Law reform.

(2) Such a position on the part of environmental organizations would make it much more difficult to get ANY additions to the wilderness system, particularly Bureau of Land Management wilderness. Even the best western legislators (with the exception of a few from strictly urban areas) could not support new wilderness if it were tied to a prohibition on grazing. Already, anti-wilderness groups are circulating material that emphatically states that wilderness is an economic disaster for those not living in cities. This argument is untrue, but it has been hard to counter because of the prejudice of many rural counties—“cow” counties—against wilderness. We do not want to add credence to their arguments.

I also believe that it would be far better to attack the problems caused by overgrazing with a campaign to restore the ecological health of all public lands, regardless of their wilderness status. To move allotments out of wilderness onto fragile adjacent lands with important riparian areas makes no sense. Agencies must be pushed to establish excellent standards and guidelines and to enforce the best management practices. If an agency does take the necessary steps to eliminate overgrazing, environmental groups must strongly support that agency against coalitions of ranchers and against possible lawsuits.

We need dialogue among all conservation groups before any group takes a position that may impair the efforts of other groups to achieve wilderness protection for some of our most remote and spacious wild lands. Our common goal must be to achieve the best wilderness system possible.

—Marge Sill is the Vice Chair and Federal Lands Coordinator of the Northern California/Nevada Regional Conservation Committee of the Sierra Club and a member of CWC.

This article is reprinted with permission from Wilderness Record (1-92), Proceedings of the California Wilderness Coalition. CWC (2655 Portage Bay East, Suite 5, Davis, CA 95616; \$20 membership) has been considering whether or not to take a position against livestock grazing in Wilderness Areas. The above article contrasted with the affirmative view expressed in the Record by George Wuerthner.

1986. Federal Grazing Program: All is Not Well On the Range.

3. *Sacred Cows at the Public Trough*. Denzel and Nancy Ferguson, 1983.

4. US General Accounting Office, 1988. Public Rangelands: Some Riparian Areas Restored, but Widespread Improvements Will be Slow.

5. World Watch Paper 103. Taking Stock: Animal Farming and the Environment.

6. US Environmental Protection Agency: Livestock Grazing on Western Riparian Areas. 1990.

Seeing the Grasslands through the Grass

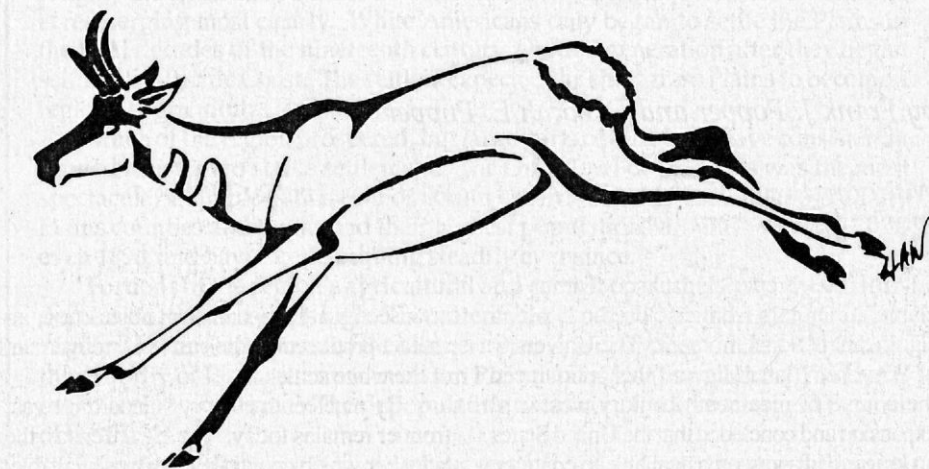
by George Wuertner

One of the growing disputes among environmental groups in the West concerns the issue of livestock grazing reforms. In one camp sits a small minority who feel that no level of livestock production is really acceptable. This group, myself included, sees livestock production at the core of most Western environmental issues. The other camp feels livestock production merely needs reform, not termination.

Attempting to correct environmental degradation associated with livestock production by treating the symptoms without dealing with the ultimate cause of the problem is not likely to succeed. Most Western environmental problems can be attributed, at least in part, to livestock production—and our attempt to maintain an agricultural system based upon alien animals poorly adapted to the Western climate and terrain. Ranchers have been trying to make the West “fit” the cow, and the ecological consequences include de-watering of streams, predator control, extirpation of native species, disruption of natural ecological processes—all to provide food, water and space to exotic animals owned by a tiny minority of U.S. citizens.

No matter what your concern, be it preservation of biological diversity, protection of watersheds, or even aesthetics, livestock production is frequently the root of the problem. Treating symptoms individually will never bring satisfactory results. Restoring wolves to Yellowstone will be a hollow victory if they are shot immediately upon leaving the Park. Fencing cattle from streamside riparian zones has little meaning if livestock use is merely transferred to the uplands where first order seeps, wetlands and springs are trampled. Preserving small tracts of wildlife habitat is for naught if ecological processes can no longer function. And as long as we have livestock on our public lands, such hollow victories are the best we can hope to achieve.

I see no reason to accept such a limited vision of what the West can be. I envision a West free of the burden of livestock, ecologi-



cally intact enough to support grasslands, not just grass. I see native species restored to something like their former numbers, Bison again roaming the valleys and plains; a West where prairie dog towns stretch for miles and house hundreds of Black-footed Ferrets. I see a landscape stretching to the far horizon without fences, stock ponds or water pipelines, a place where wolves can roam for miles without radio collars tracking their every move. This will be a landscape big enough for wildfires to roam with equal abandon and freedom from human interference.

Such a vision offers infinitely more public benefits than does providing 2% of the forage consumed annually by livestock in the United States. Private lands can meet all U.S. meat demands. Yet few areas outside of the public lands of the West can provide the large biological preserves necessary if we, as a nation, wish to protect natural ecological processes and biological diversity. “Better livestock management” will only make our public lands better feedlots, not naturally functioning ecosystems.

Those environmentalists advocating better livestock management fail to realize that this usually means more fences, stock ponds, water pipelines, predator control, spraying, seeding, chaining, and burning—in short, more ecosystem manipulation. Livestock production requires the domestication of our native rangeland ecosystems. Furthermore, any forage that goes into the belly of a cow is that much less forage for native herbivores, from grasshoppers to Bison, which in turn support a host of predators and scavengers.

Fortunately, a few environmental groups

have recognized the dangers inherent to public lands livestock production. For example, the Oregon Natural Resources Council (ONRC) recently proposed a 6 million acre Oregon Desert Wilderness Bill, which proposes the termination of all livestock grazing in designated Wilderness Areas. Far more environmental groups, however, continue to publicly support public lands grazing as a legitimate use, though they suggest that grazing practices need some reform.

Confronting the livestock industry head on seems like a huge undertaking, but we should remember that the entire West has only 22,000 public land grazing permittees. Sierra Club alone has nearly 20 times that number of members. If the major environmental groups united in their efforts and channeled all the time and money they now spend on livestock related problems—lobbying for protection of riparian areas, working for reintroduction of the Gray Wolf and Grizzly Bear, monitoring individual grazing allotments and so on—toward terminating livestock grazing, most of the problems that now preoccupy them would be dramatically reduced.

The attraction to fighting for wolf recovery, or the creation of a specific Wilderness Area, or monitoring a particular grazing allotment, is that one may see tangible results sooner. Revamping grazing policies for the entire West seems like an unattainable goal, but it is the only real solution if we want to succeed with all these smaller objectives. For the public lands of the West, nothing would bring about more positive and long lasting ecological improvements than elimination of livestock grazing.

The Reinvention of the American Frontier

by Frank J. Popper and Deborah E. Popper

With extractive industries moving out of the West, more land is opening up for preservation.

In 1893 Frederick Jackson Turner declared America's frontier closed. It was a significant national moment. The University of Wisconsin (later Harvard) historian traced the course of nineteenth century westward expansion and concluded that the United States no longer had a vast area available to conquer, and that the fabled and formative western American cowboys-and-Indians frontier was gone. Americans could no more live as Daniel Boone legendarily had, leaving a homesite as overcrowded when he could see a neighbor's campfire across the valley. Turner's thesis was the most influential idea an American historian ever produced. The nation noted, for example, the growth of settlement along the Pacific coast and the ending of the Oklahoma land rushes. It essentially accepted Turner's argument, and the frontier faded from its awareness.

We would like to suggest an alternative understanding. A huge frontier survived throughout the twentieth century, but in a hidden form few Americans recognized. In the twenty-first century, an even larger frontier will appear in clear public view. The twenty-first century American frontier, more than the nineteenth and the twentieth century ones, will constitute a deliberate human creation, for it will spring primarily from preservation and conservation impulses. If it works, it could be environmentally magnificent. If it does not, it could be environmentally disastrous. In either case, this reinvented frontier will be impossible to overlook.

Turner's declaration came from a specific finding of the 1890 Census; that the national line west of which lived fewer than two people per square mile—the equivalent of Manhattan having no more than forty-six people—had disappeared. It had disappeared as a result of western economic growth induced, for instance, by the homesteading acts, resource strikes, and the rise of western cities. A century later, the declaration looks odd and premature. The concept of a single national frontier line

now seems a huge statistical abstraction, an artifact produced by the east-west movement of the white settlers.

By nineteenth century standards, a vast frontier remains today. The 1980 Census, the latest for which county-level data is available, shows 143 counties, all in western states, with fewer than two people per square mile. These counties are large, covering an area of 949,500 square miles, over a quarter of the United States, but they have a small total population of 572,000, representing one American in 396.

If one defines the frontier as having a slightly higher population density of less than six people per square mile (as nineteenth century investigators sometimes did), the twentieth century American frontier becomes truly impressive. The total population of the 394 western frontier counties with less than six people per square mile is 2.2 million, around 1 percent of the American population. Their area, 1.6 million square miles, covers 45 percent of the United States. These counties are almost entirely contiguous, and they come close to forming a nineteenth century style unified frontier zone. So the frontier never disappeared at all.

During the nineteenth century, the United States acquired land on the frontier and allocated it; much of it went to the federal government, remaining in the public domain, while other portions went to settlers, railroad companies, and other interested private parties. During the twentieth century, Americans primarily extracted natural resources from both public and private land on the frontier, and—secondarily, and often reluctantly—preserved its scenic, aesthetic, and historic settings. On the twenty-first century frontier, extraction and preservation will change places: preservation uses such as tourism, recreation and retirement will become primary; extractive activities such as ranching, farming, logging, and mining (including for oil) will become secondary.

Extraction will not disappear and in some places will flourish, but in general will contract to more economically and environmentally appropriate places. As the extraction-to-preservation shift proceeds, the western frontier will expand, reappear before American eyes, and once again fascinate them.

Across much of the rural West, extractive uses have long been in steep decline. Despite recurrent local booms such as the present one in gold, extraction accounts for an ever-smaller share of the West's total income. Any two large Nevada casinos together, for example, bring in more money than the state's (or most western states') entire cattle industry. Extraction throughout the West yields low and falling wages and is subject to wrenching boom-and-bust cycles whose bust sides are coming to predominate. Extraction frequently causes immense environmental damage and produces dwindling communities that cannot keep their young and so become disproportionately aged. Extraction requires increasingly questionable federal subsidies, and extractive industries are disproportionately dangerous for their employees.

These conditions chronically oppress large parts of the American countryside, but they have hit with special, accelerating force in the rural West: the region is already less populated, less economically diverse, more remote and arid, and often poorer and more ecologically vulnerable than the other suffering American rural places.

The results of the 1990 Census reveal continuing and perhaps intensifying population hemorrhages from much of the already lightly populated rural West. According to Calvin Beale, a demographer with the Department of Agriculture, early Census figures show that seven of ten counties that had the largest relative population losses—ranging from 21 to 32 percent between 1980 and 1990—were in the rural, extractive West. Their failing economic bases varied from mining (for example, Lake County, Colorado, 32 percent population loss, or Greenlee County, Arizona, 30 percent loss), through farming (Lynn County, Texas, 22 percent loss), to oil and natural gas (Converse County, Wyoming, 21 percent loss).

Beale's results applied only to counties with populations over 5000. If one also includes the many rural western counties with smaller populations, the number become even more striking. According to our figures, west of the 98th meridian, a traditional border of the West, fifty of Nebraska's fifty-two counties lost population. So did thirty-eight of North Dakota's western forty-one counties, and twenty-two of Oklahoma's twenty-three. In all three states, each set of western counties suffered a net population loss of 6 percent.

Long-standing western water transfers out of rural areas show much the same pattern: demographic and economic drainage of the frontier. The on-the-ground effects of the transfers are widely acknowledged. In a 1990 University of Arizona study, at least three-quarters of the leaders in both water gaining *and* losing communities in the state agreed that the latter would suffer in agricultural productivity, overall growth, ability to protect their way of life, flexibility in their land-use choices, and environmental quality.

The ongoing deregulation of the trucking, railroad, bus and telephone industries will further isolate many remote western places by making it still harder for the industries and places to afford each other. Cutbacks in medical, educational, and other public services will have comparable frontier-making impacts.

The shift from extraction to preservation is now well under way. A 1989 University of Idaho study showed that between 1970 and 1985 amenity-oriented California, Colorado, Idaho, Montana, and Wyoming counties with federally designated Wilderness tended to grow more than extraction-oriented rural counties without them. The growth rates of some of the wilderness counties—say, Eagle County in the Colorado Rockies or Valley County in the Idaho National Forests—approached those of fast-growth Sun Belt suburbs.

Most western states have historically fought the creation of National Parks within their borders, regarding them as barriers to extraction and abdications to the federal government. Several of the most conservative states have in the past shunned National Parks all together. They now show enthusiasm for them. In 1986, Nevada acquired its first park, Great Basin, bordering central Utah. Idaho is planning a series of parks in the northern Snake River plain, the Owyhee River Canyons region, and the present Sawtooth National Recreation Area. A bellweather Nebraska congressman has proposed the state's first park, along the Niobrara River valley in the Sand Hills, and the state's largest newspaper, the *Omaha World Herald*, endorsed the idea. In 1980, Alaska fiercely resisted the Alaska

The American Frontier, the Great Plains and the Buffalo Commons

The Great Plains—the area east of the Rockies and west of the 98th meridian, roughly the eastern third of the Lower 48 frontier—is where the American frontier is reemerging most clearly. White Americans only began to settle the Plains in the final decades of the nineteenth century, about a generation after they began settling the Pacific Coast. The settlers expected the shortgrass Plains to become a region of agricultural abundance.

Much of the region prospered, but large parts of the Plains have consistently proved resistant to stable settlement. The Dust Bowl of the 1930s was the most spectacular example of this economic and environmental miscalculation. Many Plains counties and towns had their highest populations around 1930 or 1920 or even 1890, and have been declining steadily ever since.

Portions of the region's agricultural and energy economies are now in near-depression. Soil erosion is high. The water table, especially atop the giant Ogallala Aquifer that underlies most of the southern Plains, is dropping. In the 1990 Census the majority of Plains counties in all ten Plains states lost population. The losses seem likely to continue. The depopulating areas constitute reemergent frontier of the Plains.

A new economy—a new set of preservation uses to replace the failing extractive ones—is struggling into life on the Plains frontier. We have elsewhere called this vision the Buffalo Commons. We estimate that it will take place mainly on about a quarter of the Plains land area, in the region's most rural counties which now have only 6 percent of its population. Possible Buffalo Commons counties appear in all Plains states, but cluster in the northern Plains and the Texas panhandle. In the Buffalo Commons the fences will come down, shortgrass will be replanted, and native species like buffalo, elk, antelope, deer and their predators will be restocked.

Practical initiatives to achieve the Buffalo Commons are now well under way. Many cattle ranches across the Plains are successfully switching to more profitable, more nutritious buffalo. The Nature Conservancy and similar national and state land-preservation organizations have in recent years shown an increasing interest in the Plains and bought more land there. Native Americans are seeking to invigorate their buffalo culture for agricultural, tourism and spiritual purposes. National and state park and wildlife agencies are considering Buffalo Commons measures. More such initiatives will undoubtedly occur as the Buffalo Commons begins to materialize.

Most Plains places and people will continue along the economic development paths they are already pursuing. Plains cities will keep growing, the region's prodigious wheat production will mostly remain, and energy extraction will often persist. But in the deep-rural, now-depopulating Plains, the Buffalo Commons offers a way to attain a self-sufficiency and stability never before available in the white period. The Buffalo Commons, America's farthest probe into its returning frontier, amounts to the nation's most advanced experiment in replacing extraction with preservation.

—Frank and Deborah Popper

National Interest Lands Conservation Act, which created ten new parks, but later embraced the joint US-Soviet proposal for a park on both sides of the Bering Strait. The American portion alone, now the Bering Land Bridge National Preserve, is 4400 square miles, almost the size of Connecticut.

Consider also the recent burgeoning of western environmentalism, which has com-

bined with public and private financial concerns to favor the preservation economy over the extractive one. The Bureau of Reclamation has stopped building the big, heavily subsidized dam and irrigation projects that have made so much western extraction possible. Throughout the West, the livestock and logging industries have come under mounting attack. Environmental and economic pressures

are driving the large parts of these industries that are mobile to shift their operations from public land in the West to private land in the South. By 1989, Florida, Kentucky and Tennessee each produced more cattle than Arizona, Idaho, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington or Wyoming. Endangered species laws may well force much of the logging industry from the National Forests in California, Oregon, and Washington to big corporate holdings between the Carolinas and Arkansas. Preservation uses will usually be the most plausible replacements on the land extraction will abandon.

During the twenty-first century, the American frontier will expand and become more visible. Large chunks of the rural West will be privately preserved—for instance, by ranchers who discover that they can do far better by renting their land to hunters for part of the year than by laboriously running cattle on it year-round. (This change is already happening, most noticeably in Montana and Texas, to the environmental and economic benefit of all concerned.) The Nature Conservancy and similar preservation organizations will make extensive land purchases.

Some private land will be deserted, and eventually move into public or quasi-public holdings. For instance, the environmentalist goal of creating buffer zones in Montana and Idaho to help insulate Yellowstone National Park from development pressures may well become a reality. In the twenty-first century, National Parks, National Forests, National Wildlife Refuges, and federally designated Wildernesses in these holdings, their state counterparts, and Indian reservations will all be larger and better buffered than they are today. The ecological restoration of land damaged by previous extractive uses will be big business; so will ecological tourism.

The emergence of the twenty-first century frontier will have important urban and political consequences as well. Ironically, by many measures the West is already America's most urban region; the bulk of the West consists of urban islands in a frontier sea. The expanding frontier will only reinforce this pattern, as western cities continue to grow in population. The urban areas will in fact provide the political impetus to protect the environment of the frontier. The urban West was distinctly cool toward the frontier West's anti-environmentalist Sagebrush Rebellion in the 1970s, and it went down to defeat. Similarly, we suspect that the frontier's nascent, apparently formidable wise-use movement will never become as strong as its predecessor, the Sagebrush Rebellion. The underlying political conditions are becoming continually less favorable to this sort of rear-guard anti-envi-

ronmentalism, for the West's urban areas keep growing.

Moreover, at least six western states—Kansas, Nebraska, New Mexico, Oregon, Utah, and Washington—have congressional districts that are now heavily frontier and will become more so in the coming years. All are today held by conservative Republicans, but may eventually be reapportioned out of existence. One can anticipate comparable political shifts at the state legislative level in nearly all western states, with happy results for environmentalists.

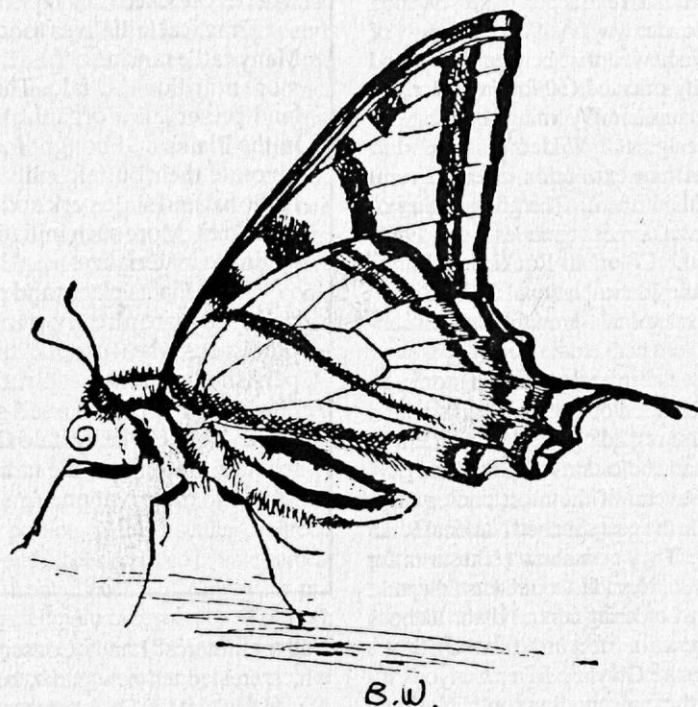
The return of the American frontier will have profound cultural effects. Unlike the nineteenth century frontier, the twenty-first century one will not be a place to conquer. Unlike the twentieth century frontier, it will not be a place to ignore. Unlike the nineteenth and twentieth century frontiers, it will be more a place of preservation than of extraction. Call it the kinder, gentler frontier.

The combined rise of preservation and decline of extraction will present a remarkable chance to undo the nation's past mistakes. It is not, perhaps, a chance we deserve, but it is no more than a chance; we also have to be willing to act to take advantage of it. If we

succeed, the results will be environmentally and economically spectacular, the world's first sustainable development frontier, a place where extraction and preservation coexist. If we are not so fortunate, the results will be horrendous, the historically familiar creation of yet another human-induced wasteland, a place where extraction has declined without preservation replacing it.

We are no longer a frontier nation, but we are still a nation with a frontier. And it will be a frontier that will expand far into the next century.

Frank Popper is in the urban studies department and Deborah Popper is in the geography department at Rutgers University. Their longer article above is reprinted with permission from The Amicus Journal (NRDC, 40 West 20th St., New York, NY 10011). The Poppers are the originators of the Buffalo Commons proposal for the Great Plains. Their shorter article above extends the Buffalo Commons approach to much of the rest of the rural West. Their work is the subject of Anne Matthew's new book, Where the Buffalo Roam (Grove, Weidenfeld, 1992).



Western Tiger Swallowtail

A Commentary on Gunning Down Bison

by George Wuerthner

More than 200 Bison have been shot this winter (by late January) as they wandered from Yellowstone National Park. I'm a hunter. I accept killing and death as part of life's cycles just as birth is a part. I'm also an ecologist with a more than passing awareness of the scientific explanation for how we "think" ecosystems work. And perhaps because of this training, I have a slightly better appreciation than most of how little we really know about Nature. I am less in awe of our own knowledge than I am of how wondrous Nature really is.

While I accept death, I cannot accept the present slaughter of Bison outside of Yellowstone National Park. I know the Bison will not go extinct as a species, but that is little comfort. The present "solution" to the Bison "problem" demonstrates both a failure to strive for coexistence and an unwillingness of some to accept wildness. Bison are not domestic cattle, yet that is how many expect them to behave.

It seems everyone who lives in Montana likes having America's icon just beyond our doorsteps. We like the money it brings to the state. But we are unwilling to accept what Yellowstone represents. This is seen again and again in the way we react to natural events. We demand that fires be controlled. We want Grizzlies to stay where they "belong." We can't accept Elk starving or Bison that do what Bison are supposed to do—wander. Yet unpredictable and uncontrollable dynamic changes are the very essence of an ecosystem. If ever we are successful in our continual attempts to domesticate our last wild places, and our last wild animals, we will have killed what makes the Greater Yellowstone Ecosystem resilient, beautiful, and unique.

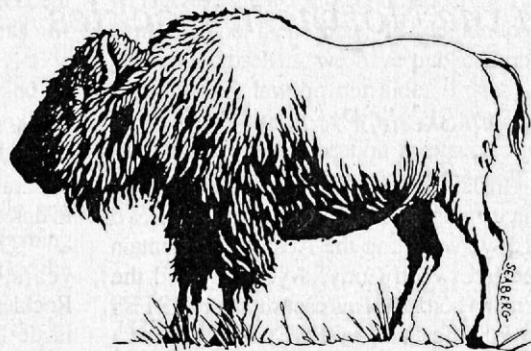
Some key points in this issue are not clearly articulated in the reports we read in the newspapers.

First, the reason given for killing these animals is that Bison can carry brucellosis, a disease that causes abortions in wild animals as well as domestic livestock. Concern about

livestock prompts the present "control" efforts. However, Bison are not the only animals to test positive for brucellosis, nor is Yellowstone the only place where the disease has been reported in wild animals. Elk, Grizzly Bears, Caribou, and even domestic dogs have all at one time or another tested positive for the disease. Furthermore, in the Yellowstone area, though a much smaller percentage of Elk test positive for brucellosis, due to their much greater numbers and distribution, they may actually pose a greater risk to the livestock industry than Bison, if there is any real risk. Even though they are carriers of the disease, we are not slaughtering Elk simply because they do not stay within some politically defined bounds.

Second, testing positive for brucellosis does not mean a Bison can transmit the disease. I would test positive for polio, since I was exposed to it as a child; but I don't have polio, nor can I give it to anyone. No definitive study of actual risk has been undertaken, in part because the livestock industry will not accept any level of risk to cows. All we know is that the bacteria carried by Bison will infect cattle under laboratory conditions. I can get AIDS under laboratory conditions too, but I won't get it from sitting near someone with the disease.

Third, the great fear of the Montana livestock industry is that it will lose its brucellosis free status. Such a loss will make it more difficult for livestock producers to transport and sell animals. Perhaps we ought to question whether it would be appropriate to condemn an entire state's livestock industry if the disease were reported from a few operations. It might be easier to change the rules



governing brucellosis certification, quarantine and testing procedures than it is to control Bison.

Fourth, notwithstanding widespread opinions to the contrary, Yellowstone Park in general is not overgrazed. Go look at Yellowstone yourself at the end of the summer growing season—you will see plenty of forage. In fact, it is some of the best rangeland in the West. The valleys are lush with vegetation. Wildlife, unlike domestic livestock, graze the northern range in winter when the plants are dormant. Removal of dead above-ground litter does not usually lead to range degradation. Bison are leaving the Park not due to a food shortage. At most only 10% of the available forage on the northern winter range is consumed in a typical winter, according to independent researchers. Yes, the shrubs are munched down—but that is because they are accessible in deep snow. Deep snow, not lack of food, is what poses a problem to animals in some winters. Bison leave the Park because life is easier where there is little snow, not because they are starving.

We can deal with Bison and the brucellosis risk if we are willing to make adjustments. Some will mean extra costs to individual land owners, yes. Perhaps those who believe they should not be required to make any concessions should not live next to a National Park.

There is no reason why Bison should not recolonize some of their former habitat. We accept deer, antelope and Elk. Why not Bison? We are killing the last sparks of wilderness with every Bison we shoot. It is this death—the death of wildness, of wild life, and of ecological processes—that I cannot accept.

Recolonization or Reintroduction:

Redefining the Wolf Controversy in the Northern Rockies

by Tom Skeeel, Predator Project

In late February, two Bureau of Land Management (BLM) scientists sighted two large wolves along the Absaroka Mountain Front (between Cody, Wyoming, and the Montana border). This past summer, US Fish and Wildlife Service (FWS) biologists met with biologists from the Beaverhead National Forest to verify the presence of Gray Wolves ten miles north of the continental divide in southwestern Montana. The biologists got responses to a tape recorded wolf howl and found two wolf scats. These discoveries put wolves within 50 miles due east of Yellowstone National Park, and, to the west, within 120 miles of Yellowstone National Park as the crow flies, or about 150 miles as the biological corridor lies.

Hearing this news, along with the unconfirmed reports of wolves in the Dubois, Wyoming area, one wonders how long it will take wolves to find their way back into Yellowstone. The confirmed death of a wolf in southern Idaho supports the idea that they are making a comeback in central Idaho. While in no way implying that wolf recovery in the Northern Rockies is progressing along just fine, these incidents do provide us with new reasons to question the conservation community's prevailing approach to wolf recovery in the region. Do we, the conservation community, need to continue to make our wolf recovery stance palatable to the livestock industry in order to have wolves back in places like the Greater Yellowstone Ecosystem and the Central Idaho Wildlands Complex?

Wolf advocates less willing to compromise have all along answered "no" to this question, adding a much needed, but seldom heard alternative to the whirlwind of rhetoric and deal-making which is engulfing the dialogue. That alternative is the idea of seeking full protection for the Gray Wolf in the Northern Rockies. The Predator Project believes now is the time to convince other wolf advocates that, by taking an uncompromising stance, we have less to lose and more to gain.

To understand why this is so, we need to look at what has happened to date.

Over the past five years, the Northern Rockies wolf recovery issue has been filled with bargains and biases. This has been the case especially with regard to reintroduction in Yellowstone National Park, which has become one of the country's best-known environmental controversies. Numerous groups jumped on the wolf advocacy bandwagon, most of them focusing on ways to allay the fears of local ranchers. As a result, the welfare of the livestock industry became the crucible into which all other ideas and arguments were molded. The essence of the Endangered Species Act, which calls for the recovery of imperiled species without political or economic interference, was all but forgotten. The focus became the financial hardship of the ranchers, not the biological viability of the wolf.

Unfortunately, the presumed "champions" of wolf recovery in the region, Defenders of Wildlife, the Wolf Fund, and the National Wildlife Federation, accepted wolf control as inevitable. A compensation fund was established to assuage ranchers' fears of economic losses. These concessions became the terms of discussion behind which the majority of the conservation community rallied.

Years later, we still don't know of any established, resident wolves in Yellowstone or Central Idaho. Our efforts to initiate a reintroduction project have thus far failed. And in the Northern Continental Divide Ecosystem, where wolves have returned on their own, our bargaining chips have gotten us at least nine dead wolves in the past 24 months, a population of no more than 50 wolves where once hundreds or thousands played and preyed, and \$100,000 of wolf advocates' support, sitting in a bank account, ready to pay off ranchers who lose some of their commodities to natu-



Brush Wolf

ral processes. This cannot be construed as even a partial victory.

During this time, most wolf advocates have spoken of the moral and ethical imperative we Americans have to return the wolf to its rightful home. An underlying assumption has been that we would be actively involved in that process. Now we are faced with or blessed with, depending on your view, the reality that wolves have in some places returned on their own and will likely do so in other places. The parameters for the discussion have been changed. No longer does reintroduction seem to be the only option for wolf recovery in Yellowstone and Central Idaho.

With this in mind I suggest we take a critical look at the idea of putting wolves back in these areas, and consider what it would take to *allow* wolves to return to these areas on their own. This is particularly important given that FWS has initiated an EIS on wolf reintroduction in Yellowstone, and will be seeking public comment some time this spring. The EIS provides the conservation community a chance to regroup and redefine our position on wolf recovery. The fundamental questions to address in this redefining process should be: 1) do the seemingly inevitable conditions of "experimental population" status (which allows for "greater management flexibility" in dealing with wolf-human property conflicts), aggressive control, and strict boundaries make a reintroduction program less than beneficial for wolves; and 2) what do we have to lose by taking the moral high ground and demanding full protection for the wolf as required by the ESA, and unmanipulated natural processes within healthy, intact ecosystems?

When considering these questions, three possible scenarios emerge. First, we could continue to accept control and compensation, in which case reintroduction may or may not happen. If we do put wolves in the Yellowstone Ecosystem or Central Idaho, most likely they will be subject to the economic whims of the livestock industry. This would mean an experimental, non-essential population designation, a control program, and an environmentalist-sponsored compensation program.

Second, we could do nothing, just stall for as long as it takes wolves to return on their own. The wolves would not be designated an experimental, non-essential population, and therefore would be subjected to less manipulation. This approach would likely find us with a federal or state compensation program, which would use the public's tax money—including a little from members of the livestock industry—to pay any compensation (as is the current situation in Montana).

Third, we could push for real protection

through the EIS process. By doing so, the worst that could happen is to end up with the first of the aforementioned scenarios. On the other hand, the best we could do is full protection, no experimental population status, no control, and a new paradigm about the needs and rights of endangered species and the impact of the livestock industry on natural ecosystems. This would not only be a huge victory for the wolf, but would set a strong precedent as Congress begins the process of reauthorizing the Endangered Species Act.

It's time to redefine our position and renew our conviction. We ought to take full advantage of the Yellowstone EIS to tell the government (federal and state land managing agencies and Congress alike), the public, and the livestock industry that with wolves coming back we want to see the type of protection the ESA mandates.

Do you really want wolves to be designated a "non-essential, experimental population?" Do you really want ranchers to be compensated for threatening the viability of an

Endangered species. Jasper Carlton of the Biodiversity Legal Foundation has said all along, "If not Yellowstone, where; if not now, when?"

The wolves naturally recolonizing their old haunts have given us the opportunity to take the moral high ground without risk of losing political or geographic ground. Wolves returning to the Northern Rockies on their own will receive greater protection under the ESA than if we put them there. In addition to the wolves themselves, we have public support and national law on our side. Instead of seeking a compromise where control is acceptable and compensation is expected, we should work for full protection of the wolf, its habits and its habitat.

To voice your opinion about wolf recovery in Yellowstone, contact the FWS at POB 25486, Denver Federal Center, Denver, CO 80225.

On Devotion to Trout and Dedication to Habitat

by Mollie Y. Matteson

Some would say that any biases are detrimental to good research and scientific judgement, but so long as humans, and not computers, are doing and using science, it is hardly possible to avoid a certain amount of emotion, opinion, and faith. And when tempered by reason, these are not necessarily bad. Bias not recognized, however, or bias ignored, is dangerous. Most readers of this publication would agree that the bias of those studying Coyote control or nematode poisons is a menace to long-term ecosystem health, and to humanity's ethical integrity. But what about scientists and managers favorably inclined to species under their purview? What about people working with endangered species? Can the positive attitudes of these persons be hazardous as well?

Consider a fish called the Yellowstone Cutthroat Trout. It is a subspecies of the West's major native trout, and it once swam the waters of the Yellowstone drainage as far east as the Tongue River in Montana. It also inhabited portions of the Snake River watershed in

Wyoming, Idaho, Nevada, Utah, and perhaps Washington. Today, its numbers are greatly reduced from historic levels by a combination of habitat degradation, introduction of non-native fishes, and over-fishing.

Livestock grazing is the major threat to the Yellowstone Cutthroat's habitat: Riparian areas are trampled, stream-side vegetation is devoured, water is diverted for irrigation—mostly to grow feed for cattle. Logging also damages trout waters by increasing sediment loads, hastening run-off, and removing vegetation that shades streams and holds banks together.

Competition with non-native fish endangers Cutthroat directly. Non-natives can be more adaptable to degraded waters. Even in relatively pristine streams and lakes, the exotics consume food that might otherwise go to the native fish, thereby reducing Cutthroat numbers. Some non-native fish, such as Brown Trout [native to Europe], are piscivorous and will prey on young Cutthroats.

Perhaps the most insidious threat to Yellowstone Cutthroat is hybridization. Rainbow Trout and the less common Golden Trout—natives of the Western US, but not the

Yellowstone and Snake watersheds—will spawn with Cutthroat, as will different subspecies of Cutthroat with each other. The result of both interspecies and inter-subspecies breeding is the dilution of the unique genetic make-up that distinguishes the Yellowstone strain and specifically adapts it to the waters in which it evolved.

There are few places where Yellowstone Cutthroat do not face one or more of these challenges. Even in Yellowstone Park, where livestock grazing and logging are not allowed, non-native fish have long been established. Outside the Park, public lands are subject to grazing, logging, and fish stocking; and private land owners may dewater, graze, log, and allow their lands to be sources of nonpoint pollution—all with near impunity. Because these problems are so difficult to correct, one option management agencies have turned to is placing Cutthroat in "sanctuaries"—such as relatively pristine stream segments cut off from upstream migration by high falls. In the steep mountainous country of the Yellowstone region, streams with natural fish barriers are fairly common, though many have lakes at their headwaters that now hold stocked fish or their

descendants. Some of these streams were stocked at one time. (Very often, these stocked fish are not Cutthroats.) Nevertheless, it is still possible to find places where introduced Yellowstone Cutthroat can be relatively isolated from the difficulties they now face in their native waters.

Oncorhynchus clarki bouvieri, the Yellowstone Cutthroat, is classified as a species of special concern in Idaho and Montana. Though considered a "game" fish, efforts to save this subspecies are motivated by more than mere interest in selling fishing licenses. One fish biologist told me that many anglers would just as soon catch a Rainbow or Brown Trout, which give more of a "fight" than the relatively mild-mannered Cutthroat. If it were up to these people, pure Yellowstone Cutthroat might eventually be found only where they are relatively secure today—primarily Yellowstone Park. However, many fisheries biologists, resource managers, and Cutthroat enthusiasts have a sincere interest in preserving biological diversity and an aesthetic appreciation for the animal, which sentiments impel more ambitious conservation policies.

For those who favor less consumption-oriented wildlife management, this sounds fairly enlightened. And it is. Yet, what I found after a summer working on fisheries projects for the Forest Service is that a very subtle, unrecognized bias clings to the way many of us—managers, biologists, sportspeople—view wildlife and wild places. Questions as seemingly esoteric as "what is beautiful" and "what is wild" are key to management policy and practices that, superficially, appear objective, rational, and scientifically-based.

One project I helped with was a survey of a stream being considered for Cutthroat introduction. Flowing in a Wilderness Area, the stream is divided into two distinct segments by a 60 foot water fall. Below the falls live Golden-Cutthroat hybrids and Brown Trout. Above the barrier, according to outfitters and locals who know the wilderness well, there are no fish. And unless stocking was attempted in the upper stream sometime in the past, it never had any piscine inhabitants.

I accompanied two fish biologists on the survey, one a Forest Service employee, the other a representative of Montana Fish, Wildlife and Parks. We wanted to confirm that the stream above the falls was indeed "barren" and determine whether it had habitat suitable for Cutthroat. We found a cold, clear stream with a good mix of riffles and pools, and enough spawning gravels to serve a modest fish population. All in all, it was "good trout water" according to the biologists.

As we waded through the limpid stream, and bushwhacked along its banks, we watched

for any sign of vertebrate life. A stint of electrofishing confirmed our belief that no fish lived here. Perhaps no one had ever bothered to bring up a bucket of trout from down below, something that happened to many mountain waters. Or perhaps someone had, but the plant did not take. One old-time resident—who lived downstream just outside the Wilderness boundary—believed all the fish had been swept away in a huge flood. My companions thought that unlikely. Fish are very resilient, they said; there will always be a few who find refuge in an eddy or deep pool.

For most of my life, I have been relatively neutral on the subject of fish. Fish were mostly just things I ate when my family went to the coast. Fishing never appealed much to me because I didn't tolerate the sight of animal suffering very well. Snagging them by the lips with a sharp piece of metal, bonking their heads on rocks, or tossing them on shore to writhe and gasp vainly for breath—all this has deterred me from taking up rod and reel. Though I can intellectualize about the pleasures of standing on a riverbank and laying just the right fly in just the right spot and successfully tempting that fat, shiny trout...given the real, graphic details of fish pain, I would just rather do something else.

All this is to say that I did not approach the fish introduction project with the same predilections and interests as those of my two companions—trained fish biologists and lifelong fishermen. However, in recent years I have discovered the pleasant diversion of fish watching, which has initiated development of more positive, appreciative feelings for these animals. And as I have for any species in trouble due to human greed, neglect or ignorance, I had sympathy for the Yellowstone Cutthroat before we began our survey. I was disappointed that our search revealed no sign of fish in the stream.

By the third day of the stream survey, the two biologists were sure that this was good trout water. Meanwhile, I had resolved that this naturally fishless stream segment should remain so. And thus I asked: "Why put fish here?"

My companions cited the need to conserve Yellowstone Cutthroat: It would give the fish a refuge from habitat degradation, hybridization and competition. And there were the recreational justifications: Hikers and horseback riders could catch fish out of a stream that now offered only a refreshing drink and scenic view.

I argued that few people made it this deep into the wilderness, and to access some stretches of stream required a stiff bushwhack. Considering the expense of the transplant, the recreational benefits did not seem to justify it. I acknowledged that trying to provide sanctu-

ary for pure strain Yellowstone Cutthroat had merit, but what would happen to the native inhabitants of the stream?

One biologist said, yes, it is true that the introduced fish might have some impact on the aquatic invertebrates, but it is highly unlikely that any species would be extirpated.

"But still," I said, "the fish might reduce the numbers of certain invertebrates. They will almost certainly change the dynamics of the stream community."

This did not impress the two men, since they knew, or believed, that they would not cause any outright extinctions. But even if not a single "bug" was negatively affected by the Cutthroat introduction, certain principles, certain ideas were at stake, I felt. I tried to bring this into the conversation by way of analogy: "Both of you love Elk hunting. You wouldn't like it if Elk populations were reduced to the point you couldn't hunt them any more. I might say, 'Oh that's all right, they're not going extinct,' but that probably would not satisfy you."

Finally, the reply: "Well, I just like seeing fish...Can't you imagine a few nice Cutthroats swimming around in that stream?"

It was then that I saw a little deeper into the heart of the wildlife managers and management agencies. While my philosophical concerns lay with the inviolability of a wilderness stream, and the integrity of a fishless aquatic community, these professional biologists—after the technical, practical arguments were set aside—liked fish.

Which, of course, is what you'd expect for a couple of people who've spent a good chunk of their adult lives studying fish. We might worry if they didn't like fish. But pure devotion to trout, or any other species, untempered by a healthy respect for natural processes and willingness to face the complex realities of true preservation, must result eventually in "specimen-ization." The animal or plant becomes a conversation piece, attractive, intriguing, but without function—in this case, without function in its native communities.

The state biologist—well-intentioned and experienced—seemed to want fish wherever they might survive. In this he represented his employer well, for though the state of Montana has generally been relatively progressive in its management of trout fisheries, fish still seem to be considered not quite like other wildlife. What other animal is still mass-produced in fish factories (hatcheries), then "planted" all around like crops of corn? Though stocking of all Montana trout streams has been banned since the 1970s, lakes are still stocked regularly, even those in Wilderness Areas. Non-native fish such as Rainbow Trout are

maintained throughout the state for the benefit of anglers. Exotic upland game birds such as pheasant and Hungarian Partridge also seem to fit into this category: non-natives managed for continued abundance, for the pleasure of the hunting and fishing public.

Even the average sportsman however, might think twice about certain fish stocking projects that seem to benefit mainly fish biologists themselves. I was told of one remote lake that was stocked with Golden Trout, even though no trail goes to the lake, just a steep bushwhack, and there isn't even assured access to the Forest Service land it sits on because a private landowner blocks entry to the drainage. I have to conclude that most of the benefits of stocking such out-of-the-way places are derived by biologists/managers who just "like the idea" of trout.

Wanting trout in naturally fishless streams is a bit like wishing for Sugar Maple trees in Colorado or Blue Spruce in Vermont. And even if the introduced species thrives, as have Mountain Goats in the Olympic Mountains (Washington) and the Beartooth Mountains (Montana and Wyoming), that doesn't make the introduction wise or right. The thought that "trout look nice in streams" is, in part, an outmoded, imported idea, as the idea that green lawns look nice in Arizona is out of step with the nature of the Sonoran Desert.

The Forest Service biologist, my boss and a bright, hardworking man strongly motivated to do good for the "critters" and their habitat, approached the possible Cutthroat introduction with more caution. For him, I believe the project was an opportunity to do something, in the face of his ineffectiveness at stopping the logging, roading, mining, livestock grazing and other activities responsible for the decline of wildlife populations. In terms of personal reward and tangible accomplishment, a fish introduction offered much more than another biological evaluation for a timber sale or new mine.

Because fish had never lived in this stream they called the waters "barren," but, of course, they were not. The chances that some unique, endemic invertebrate species dwelled here were probably not high. I really don't know. But regardless, the aquatic community had not evolved with fish, and introducing them would change it in some way. Neither these biologists nor anyone else really knows what the long-term effects are of placing fish in lakes and rivers that never knew fish, and never would (except, perhaps, over geologic time) without our intervention.

In addition to the biological ramifications of fish introduction, there are philosophical ones. The idea of introducing a non-native species—which Yellowstone Cutthroat is to certain stretches of water—is antithetical to the

concept of wilderness. We do not allow Gembok to be put here; we wouldn't want Blue Spruce planted on the hillsides. The beauty of wilderness to many people is as much the sanctity of the place—the sense that natural processes are occurring without human interference—as it is the actual appearance of craggy peaks, blue lakes, and forested mountainsides. Where native species are restored to wilderness, natural processes are being put back on track. Where exotics are brought in, intentionally or unintentionally, these processes are being put more off kilter.

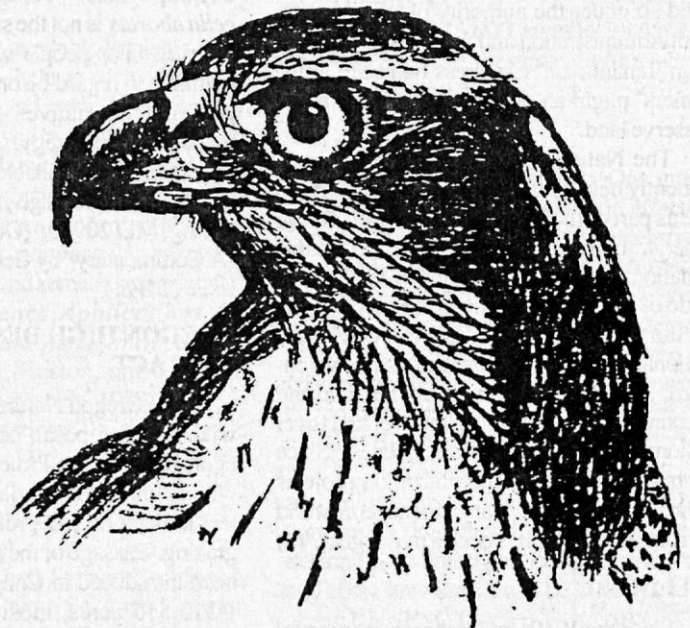
Wilderness has lessons for us that contradict the widespread belief that whatever Nature has made, humans can "enhance." We have only to allow wilderness to continue teaching. Wild, "barren" streams have as much to show us as streams teeming with fish. Perhaps some of what we might learn is patience, acceptance, and appreciation for the smaller, "uglier" critters.

And though it will be a great challenge to preserve the Cutthroat in many waters where it now clings to existence, we cannot use wilderness introduction as an excuse to ignore

habitat degradation. In fact, even if we used every potential Cutthroat refuge, even if we constructed artificial barriers on hundreds of streams, unless we preserve and restore native habitat, Yellowstone Cutthroat will survive only in small, isolated populations needing from us a perpetual commitment to monitoring and manipulation.

We must ask ourselves this: When Yellowstone Cutthroat inhabit only a few of their native rivers and lakes, and the majority of the world population exists under "protective custody" in isolated, high mountain streams, will we really have "saved" the species? What is a species that survives only at the expense of natural communities it was never a member of? Who can say that we have preserved the Yellowstone Cutthroat, when most of its native waters hold only hybrids, exotics, and the silt, sludge, and poisons of human enterprise.

Mollie Y. Matteson (POB 273, MT 59047) is a wildlife biologist and writer. Much of her work has focused on Gray Wolves in Montana.



Additional Notes on the Downtrodden

by Mary Byrd Davis

NATIONAL GRASSLANDS

Often overlooked in discussions of the US Forest Service's holdings are the National Grasslands. Comprising approximately 4 million acres, the 19 Grasslands are located in 11 states, most of them in or near the Great Plains: Colorado (Comanche and Pawnee National Grasslands), Idaho (Curlew), Kansas (Cimarron), Nebraska (Oglala), New Mexico (Kiowa), North Dakota (Cedar River, Little Missouri, Sheyenne), Oklahoma (Black Kettle and Rita Blanca, both also in Texas), Oregon (Crooked River), South Dakota (Buffalo Gap, Fort Pierre, and Grand River), Texas (Black Kettle and Rita Blanca, both also in Oklahoma; Caddo, Lyndon B. Johnson, and McClelland Creek), and Wyoming (Thunder Basin).

In the nineteenth and early twentieth centuries, homesteaders farmed what are now the National Grasslands. The federal government bought the areas from the homesteaders in the 1930s when the Depression and drought forced farmers to abandon their lands. It did so under the authority of the Resettlement Administration and the Bankhead-Jones Farm Tenant Act. Congress had seen in the farmers' plight an opportunity to restore and conserve land.

The National Grasslands are now permanently held by the Department of Agriculture as part of the National Forest system. "In general, the rules and regulations applicable to national forests as designated in Title 36, Code of Federal Regulations are used to govern the national grasslands." (1) As with the National Forests, 'multiple use' is the watchword. Grazing is a major use. The Land and Resource Management Plan for Crooked River National Grassland, for instance, states, "Since the beginning of the land utilization projects in the 1930s, improving range management and the forage resource has been a major goal." (2)

SELENIUM

Since the 1940s researchers have warned of the presence of seleniferous rocks in West-

ern states. Ranchers and government officials have largely ignored their warnings, even though selenium, in more than minute quantities, is toxic to most plants and to animals including people. A few plants, including the woody aster, thrive on selenium and metabolize elemental selenium, unusable for most plants, into water-soluble selenate that other plants can take up. These selenium indicator and converter plants are spreading thanks in part to the livestock industry. For further information on the selenium threat, see Tom Harris's "David Love," *High Country News*, 10 Feb. 1991, pp. 1, 8-12, and Harris's book, *Death in the Marsh*, published by Island Press (Box 7, Covelo, CA 95428), 1991.

BRUCELLOSIS

In March, D. J. Schubert, Director of Investigations for the Fund for Animals, released *Brucellosis: Its Impact on Bison, Cattle, and Humans in the Greater Yellowstone Ecosystem*, a report he compiled at the request of the General Accounting Office, which is studying the brucellosis issue. Analyzing the relevant literature, Schubert shows that transmission of brucellosis from wild bison to cattle is "virtually impossible." For one thing, bovine *Brucella abortus* is not the same as bison *Brucella abortus*. For people who will nevertheless continue to regard bison as a threat, Schubert presents alternatives to the current lethal management strategy. The report, which is documented, is available for \$8 from the Fund for Animals, 850 Sligo Ave, Suite LL 2, Silver Spring, MD 20910. (On brucellosis, see also "A Commentary" by George Wuerthner in this issue of *WE*.)

OREGON HIGH DESERT PROTECTION ACT

The Oregon Natural Resource Council's wilderness proposal, now known as the Oregon High Desert Protection Act, is the first widely publicized wilderness proposal to tackle head-on the problem of public lands grazing. Passage of the act, which has not yet been introduced in Congress, would transfer 1,313,516 acres, most of which livestock graze, from the Bureau of Land Management (BLM) to the National Park Service or the US

Fish and Wildlife Service. It would also mean the phase-out of domestic livestock grazing on public lands within Oregon's established National Parks, National Preserves, National Monuments, National Wildlife Refuges, Wilderness Areas, and Wild and Scenic Rivers, including those that the act transfers from the BLM. As a result of these provisions, livestock would eventually be removed from a total of nearly 6 million acres. Ranchers now grazing on these acres could choose one of three options, ranging from quitting immediately and being paid fair market value for their grazing permits to grazing for ten years free of charge and receiving no severance payment. Since the federal government spends far more administering grazing permits than it receives in grazing fees, the phase-out would save the government an estimated \$3.7 million in direct subsidies per year, which could be used for compensation to holders of grazing permits and for land acquisition.

The Oregon Natural Resources Council is establishing a group of members to make appeals on projects related to grazing, such as fencing and the application of herbicides. For further information contact the Council at Yeon Building, Suite 1050, 522 SW Fifth Avenue, Portland, Oregon 97204 (503-223-9001).

PARTICIPATING IN LIVESTOCK GRAZING DECISIONS

Leslie Gustrom and Jim Powers of Prescott National Forest Friends (PNFF) and Public Lands Action Network (PLAN) have compiled a citizens' handbook to *Participating in Livestock Grazing Decisions on the National Forests*. It tells activists how to get started, sets forth the legal framework governing grazing decisions, and points out opportunities for public involvement. Appendices include a bibliography and copies of relevant Forest Service regulations. Contact Leslie Gustrom, 1025 Clubhouse Drive, Prescott, AZ 86303.

How Not To Be Cowed, reviewed in our book review section, tells how to participate in grazing decisions on BLM lands. *Waste of the West*, also reviewed in this issue, offers many ideas on how to get involved.

Canadian Welfare Ranchers

In Canada livestock graze on public lands, primarily in the provinces of British Columbia, Alberta, Saskatchewan, and Manitoba. Public lands grazing is not a major issue for environmentalists in British Columbia and in Manitoba, although, given the severity of other environmental problems and the scarcity of paid environmental positions in Canada, the relative lack of attention does not prove that grazing in these provinces is without problems. In Alberta and in Saskatchewan grazing issues are on the front burner.

Grazing in Saskatchewan takes place on federal (PFRA) pastures, on community pastures owned by the provinces and leased to groups of farmers, on private lands, and in forest preserves, Ed Begin, executive director of the Saskatchewan Wildlife Federation reports. He thinks that overgrazing is most prevalent in the forest preserves, as it is hard to know when the cattle are put in and taken out. "Furthermore, we think we see heavier grazing on public lands than on private lands." The Federation is trying to change the philosophy of farmers and to bring specific problems to attention. As partners in the North American Waterfowl Management Plan, it is using Plan funds to prevent overgrazing and wind and water erosion, in particular through encouraging the rotation of cattle. For further information contact the Federation, Box 788, Moose Jaw, Saskatchewan S6H 4P5, Canada (306-692-8812).

In Alberta, overgrazing also occurs; and holders of grazing leases are reaping windfall profits by allowing oil and gas drilling on their leased lands. According to Dianne Pachel of the Alberta Wilderness Association, the overriding problem at the present, however, is the threat of privatization. Over 70% of the province is public land, and most of the lands in a natural condition in the settled part of the province are prairie or aspen parkland. For decades farmers, ranchers, and private companies have held grazing leases on these lands. A few years ago the provincial government wanted to sell the lands to the leaseholders. This plan was stopped. However, a year ago the Alberta Cattle Commission recommended that the leased lands be transferred from the Forestry, Lands, and Wildlife Department to the Department of Agriculture. This would mean that more than one million acres would become single-use land, more likely than previously to be cultivated and sold. The Alberta Wilderness Association is fighting the transfer. For more information, contact the Association at Box 6398, Station D, Calgary, Alberta T2P 2E1, Canada (403-283-2025).

OVERGRAZING SLIDE SHOW

"The Eating of the West" displays the devastation of Western public lands by the livestock industry. The show consists of over 100 slides from National Forests, National Wildlife Refuges, and BLM lands. It comes with a written script and is rented at cost, \$10. Free copies of a 48-page tabloid on grazing are available. Orders should include the name and phone number of a contact person, the date the show is needed (as well as alternatives), and a street address. Order from Ranching Task Force, POB 41652, Tucson, AZ 85717.

CRYPTOGAMIC CRUSTS

Cryptogamic crusts, delicate layers of algae, fungi, mosses, and lichens, are key elements of desert ecosystems across the world. They help prevent wind and soil erosion, increase the retention and infiltration of water,

make nitrogen more available to plants, and, in certain situations, help vascular plants to establish themselves and grow. Unfortunately they are easily destroyed by cows and off-road vehicles. Kimball Harper and James Marble discuss the function of cryptogamic crusts and list numerous references for further information, in "A role for nonvascular plants in management of arid and semiarid rangelands," in *Vegetation Science Applications for Rangeland Analysis and Management*, ed. P.T. Tueller (Dordrecht, Boston, and London: Kluwer Academic Publishers, 1988), pp. 135-69. Other helpful articles on cryptogamic crusts include Samuel Rushworth's and Jack Brotherson's "Cryptogamic Soil Crusts in the Deserts of North America," *The American Biology Teacher*, Vol. 44, no. 8, pp. 472-75; Jeffrey Johansen's and Samuel Rushworth's "Cryptogamic Soil Crusts: Seasonal Variation in Algal Populations in the Tintic Mountains, Juab County, Utah," in *Great Basin Natural-*

ist, Vol 45 (1985), pp. 14-21; and Jane Belknap's "Microbiotic Crusts," *Park Science*, Vol. 10, no. 3, summer 1990, reprinted in *Wildflower*, autumn 1991.

GRAZING ON PUBLIC LANDS IN THE EASTERN U.S.

Grazing on public lands is not a strictly Western problem, although, as the following notes suggest, grazing on National Forests in the East is not always quite what it is in the West. The following National Forests in the Eastern United States allow some grazing: (3)

ALABAMA

Conecuh National Forest (total acreage approximately 83,000 acres): Permit requests for 1992 cover 2700 acres for 60 AUM; farmers' interest in grazing cattle in the Forest has decreased sharply over the last five years, because prices they receive for their cattle are down.

ARKANSAS

Ouachita (1,600,000 acres): In 1991, 1689 head of cattle grazed, for a total of 11,853 AUM; 416,629 acres have been designated suitable for grazing, but many allotments are not used.

Ozark (1,200,000 acres), St. Francis (21,000 acres): Currently on the Ozark and St. Francis Forests combined, 70 permittees graze some 2000 cows, scattered throughout a total of 9100 acres from April to September.

FLORIDA

Apalachicola (560,000 acres): 627 head of cattle now graze; the Forest has official capacity for 1298 animals.

Osceola (157,000 acres): 864 head of cattle now graze; the Forest has official capacity for 2270 animals.

GEORGIA

Oconee (115,000 acres): About 1600 acres are available for grazing. Annually approximately 450-500 cattle graze; only one allotment is not in use.

ILLINOIS

Shawnee (253,000 acres): One grazing permit for a few dozen acres is in effect; the Forest Service has attempted to reforest areas previously grazed.

KENTUCKY

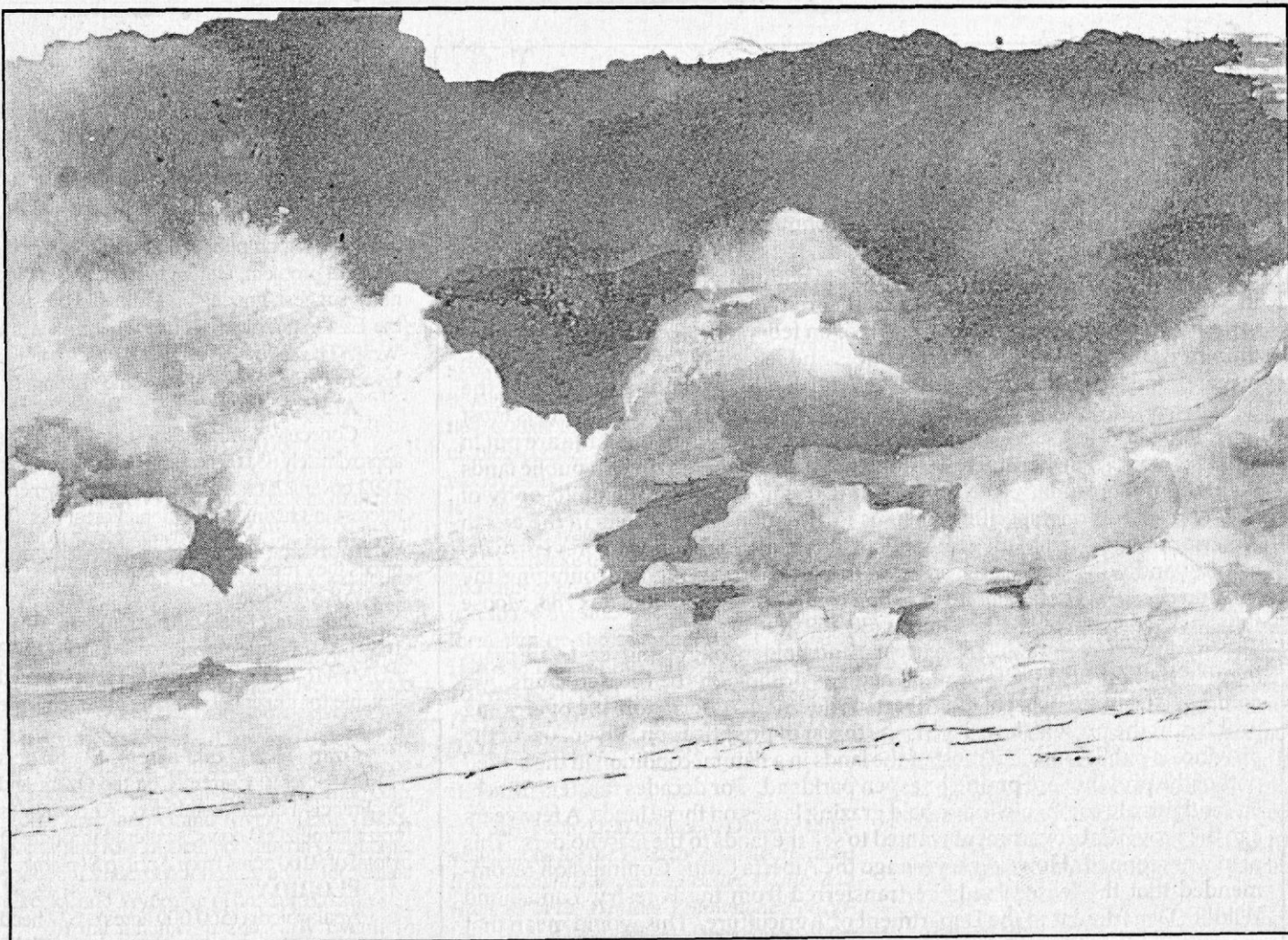
Daniel Boone (527,000 acres): 2 grazing allotments with about 100 AUM are on land acquired as pasture and used to demonstrate "good" range management practices.

LOUISIANA

Kisatchie (600,000 acres): 98,293 acres are being grazed for 15,216 AUMs; but "grazing is dwindling" because of a lack of demand. The Forest Service spokesman "does not know how long it will be with us."

MINNESOTA

Superior (2,000,000 acres): One permit



covers several hundred acres for approximately 60 AUM.

MISSOURI

Mark Twain (1,500,000 acres): Grazing cattle are moved frequently within a total of 23,200 acres, between mid-April and mid-October; there are 1.7 AUM per acre.

NEW YORK

Finger Lakes National Forest (13,232 acres): Livestock graze 4777 acres that were pasture before the area became a National Forest. (See Finger Lakes article last issue.)

NORTH CAROLINA

Pisgah National Forest (500,000 acres): Goats are used on Roan Mountain balds "to help maintain plants in a natural state."

OHIO

Wayne (180,000 acres): 3 grazing allotments cover about 230 acres for 534 AUM. The grazing occurs on land that was pasture when the Forest Service acquired it.

SOUTH CAROLINA

Sumter (360,000 acres), Francis Marion (250,000 acres): In Sumter and Francis Marion Forests 3 or 4 animals graze land acquired from farmers who were given lifetime grazing rights when the Forest Service bought

the land from them.

VERMONT

Green Mountain (290,000 acres): A couple of old, "grandfathered-in" special use permits involve less than 50 acres.

VIRGINIA

George Washington (955,000 acres): Livestock graze approximately 250 acres on the South Fork of the Shenandoah River. A potentially rich habitat that is suppressed by grazing, the acres are the closest part of the Forest to Shenandoah National Park and would play a role in any linkage between the Forest and Park.

Jefferson (680,000 acres): Cattle graze 14,000 acres for a total of 6,400 AUMs.

WEST VIRGINIA

Monongahela (850,000 acres): Livestock graze 6100 acres for approximately 8500 AUMs; most of these acres were acquired as pastureland through purchase or exchange.

ORGANIZATIONS

Organizations working on the grazing issue include the Grazing Task Force, POB 5784, Tucson, AZ 85703; Public Lands Action Network, POB 5631, Santa Fe, NM 87502

(505-984-2718); Natural Resources Defense Council, 1350 New York Ave., NW, Suite 300, Washington, DC 20005 (202-783-7800); Rest the West, POB 10065, Portland, Or 97210 (503-645-6293); Southern Utah Wilderness Alliance, 1471 South 1100 East, Salt Lake City, UT 84105 (801-486-3161).

(1)"Administration of Lands under Title III of the Bankhead-Jones Farm Tenant Act by the Forest Service" in US Forest Service, Land and Resource Management Plan, Crooked River National Grassland, Part II, p. G-4. This volume reprints Title III of the Bankhead-Jones Farm Tenant Act and implementing regulations.

(2)Ibid, pp. 1-4.

(3) With one exception, *Wild Earth* obtained the information on grazing in the East through phone conversations with US Forest Service staff at the forests in question. The exception is George Washington National Forest, for which Robert Mueller and Steve Krichbaum were our sources, since we could not obtain assistance from the Forest's staff. Figures on Forest size are approximations of the amount of land that the Forest Service owns.

THE WHEELED LOCUSTS

by Howard Wilshire

INTRODUCTION

A recent (1990) bibliography of scientific literature related to off-road vehicles has 807 entries, of which 75% (610) deal with environmental impacts, 16% with management of recreational uses, and 8% with recovery and restoration of lands damaged by this use. There are now 24 bibliographies devoted to the subject of off-road vehicles (ORVs). In addition there are hundreds of popular articles, and the subject is treated in a number of textbooks on biology, geology, and environmental law.

It can no longer be denied that vehicular use of natural terrain is severely damaging to soil, vegetation, and wild animals. The land damages also are harmful to humans. Although ORV users sometimes form coalitions with graziers and miners to protect their access to public lands, ORV use generally is incompatible with grazing, and mining interests commonly associate ORVs with trespass and vandalism. When this is thrown in with the sociological response of most passive recreationists to off-roaders — a desire to be as far away from them as possible — it might seem difficult to understand why they are tolerated on public land, especially the fragile arid lands where the visual impacts of vehicles will persist for decades to centuries. The answer lies in weak management of public lands, failure to implement laws and regulations, inadequate laws, and judicial deference to broad discretionary management prerogatives of federal agencies.

The following account focuses on the areas of my direct experience, namely, scientific study of vehicular impacts on California's arid lands, and involvement in the public and legal debates on this land use issue. The California State Off-Highway Vehicle Program, the first of its kind, provides an example of failure of a well-intentioned program, and a basis for vigorous opposition to State and Federal ORV programs.

IMPACTS OF OFF-ROAD VEHICLES

Physical and biological effects of off-road vehicles include reduction of soil stability, ac-

celerated erosion, pollution of air and water, and destruction of vegetation, wild animals, and wildlife habitat. The capability of modern ORVs to damage the environment varies according to vehicle design and operation, but it is not possible to drive vehicles on natural terrain that has a soil cover without causing damage, no matter how careful the vehicle operator. As David Sheridan, author of a Council on Environmental Quality report on ORVs, observed, "Even St. Francis of Assisi couldn't ride a motorcycle up a hill without damaging it." It is true that hikers and equestrians also damage the natural landscape, but motorized vehicles have a much greater capability to cover ground. The least surface disturbance is caused when vehicles are driven in a straight line on a dry surface. Under these conditions, typical medium-sized motorcycles impact 1 acre in 20 miles, and typical 4-wheel drive vehicles and 3-wheel ORVs with balloon tires impact 1 acre in about 6 miles. By comparison, a typical hiker impacts one acre in about 40 miles. Measurements have not been made for modern large motorcycles and 4-wheel ATVs, which have become popular. The degree of impact is greatly exacerbated by the capability, especially of motorcycles, to negotiate steep, difficult terrain — precisely the land most susceptible to soil degradation and ensuing accelerated erosion. This is the land most desired by many off-roaders because it is challenging. The contradiction here is a key issue for which there is no solution (except banning the vehicles from such lands) within the broad resource-maintenance mandate the law imposes on federal agencies.

Common soil types are compacted by vehicular traffic. As few as 10 passes of a motorcycle is sufficient to cause maximum compaction effects. Consequences of compaction are reduced infiltration of rainwater, accelerated runoff and erosion, extension of the diurnal temperature range in the soil, and impairment of biotic activity.

Vehicular impacts on vegetation range from complete denudation of large staging areas to selective kill-off of the most sensitive plants. At the bottom end of the scale, a single pass of an ORV is sufficient to destroy the delicate algal and lichen mats (cryptogamic

crusts) that stabilize large areas of western U.S. arid soils. At the opposite end, many dozens of passes are needed to finally kill the resilient creosote shrub. Large shrubs and trees to 15-20 feet high have been destroyed by root exposure caused by adjacent ORV traffic; at one locality 10-foot junipers were destroyed by direct impact (at a cost to the vehicles as indicated by windshield glass and other debris). The effects on habitat of selective destruction of small and brittle shrubs, grasses, and annual plants have not been thoroughly studied.

Naturalist Robert Stebbins has observed that during winter and daytime hours in hot weather in the desert, most animals (with the exception of the birds and larger mammals) seek shelter below ground or beneath or within objects resting on the surface. Included are mice, kangaroo rats, ground squirrels, lizards, snakes, the desert tortoise, amphibians, insects, spiders, and other arthropods. At such times, the biomass of all these sequestered animals, including eggs in developmental stages, might approach 80 to 90 percent of the total, and perhaps 75 percent of the biomass would be located between the surface and a depth of one foot. Their shelters and burrows are fragile. How much life expires beneath the wheels of ORVs is not known, but the figure must be staggering.

Among the many vulnerable species, the desert tortoise (*Gopherus agassizii*) has drawn much attention. The Mojave population was listed as Threatened in 1990 because a combination of threats to its existence—grazing, disease, ORVs, urbanization, target shooting, and other human activities—had severely reduced tortoise numbers. A study of small mammal populations in the start area of the 1974 Barstow-Vegas race (the last of the free-for-all extravaganzas) was made before and after the event, with a follow-up study one year later. Major reduction in numbers of mammals was measured immediately after the race, which was consistent with observation of disoriented kangaroo rats (*Dipodomys deserti*, *D. merriami*) with bleeding ears on the surface in daytime immediately after the race. Densities of small mammals in the start area one year later were found to be as much as 8

times lower than in nearby control areas. This indicated a significant reduction of habitat quality.

Other studies have documented the deleterious effects of ORV noise on desert animals. For example, the sensitive hearing systems of kangaroo rats can be impaired for weeks by exposure to motorcycle noise, thus making them vulnerable to predators. Couch's spadefoot toad (*Scaphiopus couchi*) can burrow to depths of 20 inches, thereby escaping the environmental extremes of the desert surface. This animal emerges from its burrow with the first summer thunderstorms and individuals gather at pools where mating occurs. The timing of emergence during thunderstorms is of critical importance to reproductive success, because the supply of body moisture is insufficient for the animals to return to deep burrows in the absence of rainwater. The trigger that identifies approaching rain apparently is the sound of thunder, a sound simulated closely enough by dune buggies to encourage emergence and certain death. A study of bird behavior in Afton Canyon showed that most birds left the area on Friday afternoons when ORVs began to arrive. Surprisingly they did not return as soon as the weekend fun-seekers left, but waited until the following Thursday. Thus, the 2-day presence of ORVs was sufficient to drive off much of the bird population for 5 days.

Habitat impairment has dual consequences in desert areas with cryptogamic crusts. These algal and lichen mats not only serve critical biological functions such as fixing nutrients in the soil and moisture retention, but also stabilize otherwise barren soils between shrubs over huge areas of the arid Southwestern U.S. where larger vegetation is very sparse. Cryptogamic crusts bind the soil with myriad algal filaments that extend only a few centimeters into loose, sandy soil. Mature lichen crusts have very rough surfaces with individual mounds that rise as much as 5 cm above the surface of the ground. This roughness serves to break up the near-surface flow of air and reduce its velocity, thus reducing its erosive power. It does not take an expert to see the intricate interconnectedness of the living and inorganic parts of this system. One has only to look — but at a speed much lower than an ORV travels.

Denudation in ORV staging areas results in accelerated wind erosion, at times producing dust plumes visible from space. Even narrow trails, aligned in the direction of the wind, yield dust that is spread far beyond the area of immediate disturbance. The dust itself exacerbates respiratory ailments in humans and domestic animals, and may have a deleterious effect on wildlife. More serious consequences

may arise from spread of diseases endemic in arid land soils, such as valley fever.

One of the most conspicuous consequences of ORV use of hilly land is gully erosion by water erosion of denuded slopes. Measured effects in soils on moderate slopes show 10 to 20-fold increases in sediment yield and runoff. On steep slopes, the entire soil mantle commonly has been eroded away. Once this happens, the ORVs move to adjacent slopes and start the process again. On steep slopes with soft soils, the vehicles themselves are responsible for major erosional effects. A single motorcycle traversing such slopes may displace (erode) as much as 40 tons of soil per mile. Use of slopes with more resilient soils commonly results in gully erosion of adjacent unimpacted areas to which runoff from the trails is diverted, or scouring and enlargement of downstream parts of the drainage system.

RECOVERY AND RESTORATION

Natural recovery of lands used by recreational ORVs has not been well documented by controlled studies, but some predictions can be made from studies of recovery after other types of disturbances, and from a growing body of knowledge about processes and rates of soil formation in arid lands. The Wahmonie townsite, on the Nevada Test Site, was established and abandoned in 1928 in response to a mining boom. Disturbances on the site consist of an unused, bladed street system, a tent site disturbed mainly by trampling, the main street that was used as a through road until 1961, and a modern dirt road used at the time of the study (1979). Study of the disturbed and adjacent undisturbed areas indicate that soil compaction will not be ameliorated for a century or more. Longer times will be required for vegetative recovery, if it is even possible. Studies of recovery from soil compaction in 5 abandoned mining towns in Death Valley National Monument indicated complete recovery (75 years after abandonment) at only one site. Straight line extrapolation indicated 80 to 140 years for recovery of the other sites.

Research by Doug Prose on tank maneuver impacts in Mojave Desert areas used by General Patton's troops in 1942-43, and used again in 1964 by the Desert Strike operation, shows that even single passes of tanks caused soil impacts that persist today. Remnant impacts of the maneuvers remain visible over extensive areas of the 11.5 million acre Desert Training Center because ancient patinated surfaces were disturbed, exposing light colored soil, and because growth of annual plants remains impaired. Prose's studies show that while greater numbers of annuals may be present in single tank tracks than outside, the plants are stunted because of soil compaction

and provide much less cover than plants in equal areas of undisturbed land. In addition, Prose's data show that the species composition of the annuals is different inside from outside the tracks. The tracks, being depressions in the surface, collect a thin layer of loose material blown or washed across the gently sloping surfaces. Plants that survive are those with lateral root extensions rather than vertical because of the difficulty of root penetration into the underlying compacted soil. Although the tanks used in the 1964 maneuvers are larger and heavier than those used in 1942-43, they exert lower compressive stresses, and consequently cause less soil compaction. The trade-off, however, is that the newer tanks impact a greater surface area per unit distance traveled: driven in a straight line on a dry, firm surface, tanks used in 1942-44 impact one acre in 3.0 miles; those used in 1964 impact one acre in 2.2 miles. A single pass of either type of tank damaged but did not kill mature shrubs, but the delicate algal and lichen mats have not recovered in single tracks of either type of tank. These studies also revealed that soil compaction remains in the subsurface even where the visible signs of traffic have been locally obliterated.

Because the terrain at all of the study sites is gentle, erosion is not a major problem. On steeper terrain where soil loss from erosion is significant, much longer periods of time will be required for recovery. Where soil has been completely stripped from steep slopes underlain by hard bedrock, millennia will be required for regeneration of the soil by weathering. Many of the Mojave Desert's soils were formed under climatic conditions that no longer exist. They are "fossils" of the past and cannot be restored [except over millennia, if suitable climate returns—sci. ed.].

Studies of assisted recovery, or reclamation, of sites disturbed by ORVs and military maneuvers are few. It would be relatively easy to eliminate soil compaction in areas where the disturbances are geometrically regular; for example, the street systems in abandoned mining towns. However, the random nature of ORV (and most military) impacts is such that standard reclamation efforts to correct soil compaction would do more harm than good. In addition, restoration of the native vegetative community is notoriously difficult and expensive in arid lands. "Reclamation" requirements imposed by the Bureau of Land Management, for example, on the promoters of the Barstow to Vegas motorcycle race, who illegally graded a six mile stretch of the East Mojave National Scenic Area, are exercises in futility: the road berms were to have been removed, the surface scarified to eliminate compaction, and the disturbed zone reseeded

by broadcasting seeds of the native plants. What has transpired is that the berms were not completely removed, so crossing drainages are still impeded, the surface "scratching" did not correct the compaction, and the seeds did not prosper, as is generally the case with this revegetation method used in arid lands. Probably the only way to successfully restore desert vegetation is to hire experts, plant seedlings, protect them from animal harvesting, and irri-

Human Causes of Accelerated Wind Erosion

Natural erosion is a major contributor to dust storms, but perhaps 85% or more of natural desert surfaces are wind stable. In these areas, bare rock outcrop, desert pavement, and vegetation anchor the soil. Humans have undermined the desert's natural stability by farming, modifying river channels, constructing cities, driving off-road vehicles, mining, grazing livestock, and constructing roads and utility corridors. Howard G. Wilshire analyzes the harsh effect of these activities in *Human Causes of Accelerated Wind Erosion in California's Deserts*. The report, which is documented through references to studies of erosion and through numerous photographs, is available from DPC Publications, POB 4294, Palm Springs, CA 92263.

gate until the vegetation is established. If the responsible parties were required to pay for such an operation, it would doubtless have a salutary effect.

Other careless reclamation procedures include the U.S. Forest Service's actions in stabilizing severely eroded land in the Hungry Valley ORV area of southern California, where closure was brought about by discovery that the area contained one of only three small remnants of a once-widespread native plant community. The Forest Service seeded the eroded areas with an exotic grass (*Red Brome*) which has eliminated the native community in surrounding lands. The agencies also have used as a stabilizing agent straw containing seeds of exotic plants.

MANAGEMENT ISSUES

An awareness of the national scope and magnitude of the ORV problem is expressed by the President's Executive Order of 1972 (E.O. 11644). This Order called on federal agencies to adopt policies to protect public resources, promote the safety of all users, and minimize conflicts with other land uses. In 1977, this order was amended (E.O. 11989) with a focus on resource issues to require immediate closure of lands to ORVs when they have caused or are likely to cause "considerable" adverse effects.

Federal land management in California: The practical effect of implementing E.O. 11644 was to legalize existing ORV use areas on U.S. Forest Service (FS) and Bureau of Land Management (BLM) lands. The only effective planning prior to site designation was done on lands under military jurisdiction. Thus, the inventory and site selection procedures necessary to assure protection of resources were bypassed, and in general whatever land had been occupied by custom was designated for continued unrestricted ORV use. The lack of inventory and site selection criteria resulted in widespread relegation to ORV use of lands that have very sensitive soils, flora, and fauna; in some instances it was known or later discovered that rare or endangered plant and animal communities existed in such areas. In addition, both the FS and the BLM considered all lands under their jurisdiction as open to ORV use (either without restriction or with restriction to existing roads and trails) unless they were specifically designated as closed. This policy, plus inadequate enforcement of restrictions, invited essentially unlimited expansion of ORV use. In the California Desert Conservation Area now, half a million acres are designated by BLM as Open Areas, and perhaps as much is used in trespass; this is in addition to hundreds of miles of trails and roads designated as open.

The areas actively used for largely unrestricted vehicular play (Open Areas) were not chosen with a view to protecting adjoining lands from adverse effects. The land so used is commonly steep terrain, with complex relations between natural drainages and boundaries of the use areas. Thus, control of off-site effects—such as flooding, siltation, and erosion—would be difficult and costly, even if the federal government had a policy of protecting adjoining lands.

The lack of comprehensive planning in designating many ORV Open Areas further violated the provision in E.O. 11644 for protecting the safety of all users of the public lands. The consequences of this failure are strikingly illustrated at BLM's Clear Creek

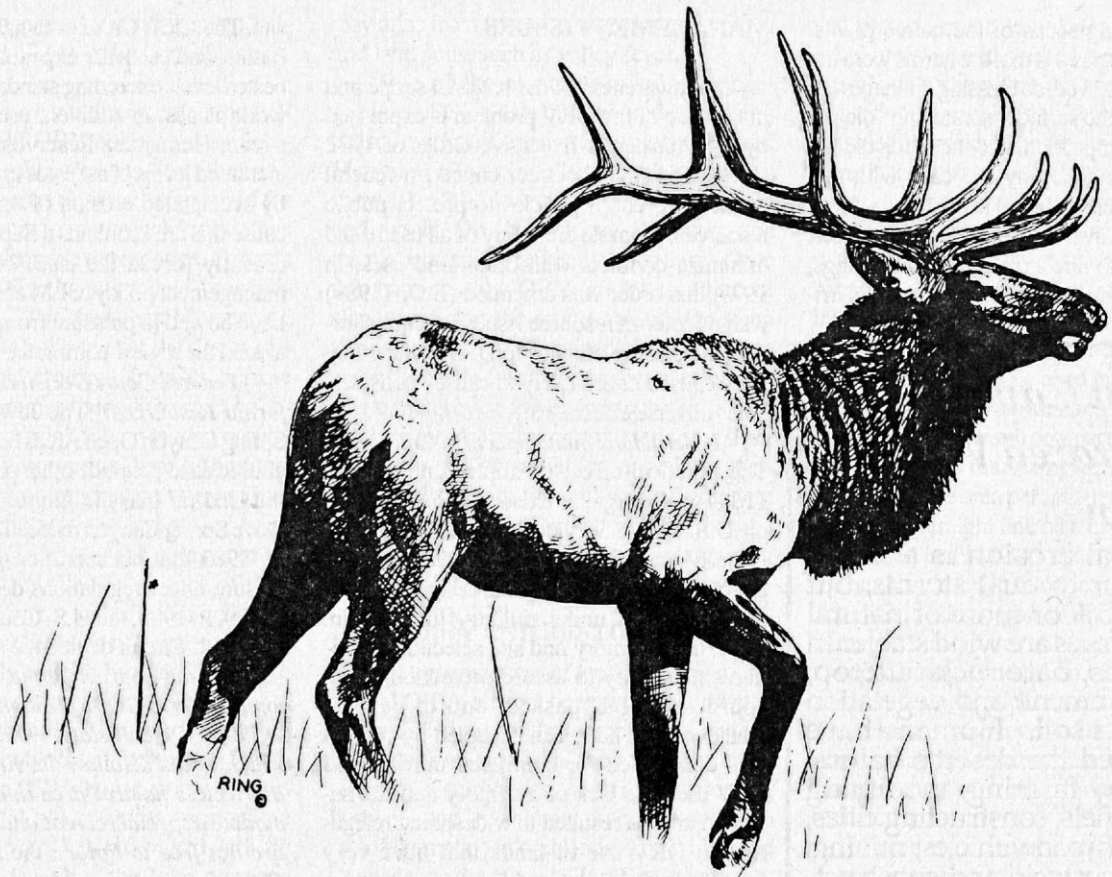
site. The Clear Creek area has soils rich in asbestos, and users are exposed to dust with asbestos levels exceeding standards for industrial work places. In addition, users of the downstream Hernandez Reservoir are exposed to increased levels of asbestos in the water caused by accelerated erosion of the ORV site. Because this area contains a Superfund site, EPA recently forced the issue of review of the management policy. BLM and EPA, however, have bowed to pressure from the user groups to load the review committee with ORV users.

Federal Court Decisions Affecting California Resources: The Jawbone and Dove Spring Canyon Open Areas have been so badly abused as to preclude other productive uses of the land far into the future. Deterioration of Dove Spring Canyon reached such proportions by 1983 that conservation groups sued for closure under regulations derived from E.O. 11989. In 1985, the U.S. Court of Appeals for the Ninth Circuit denied the suit, stating that:

We can appreciate the earnestness and force of Sierra Club's position, and if we could write on a clean slate, would prefer a view which would disallow the virtual sacrifice of a priceless natural area in order to accommodate a special recreational activity. But we are not free to ignore the mandate which Congress wrote into the Act. Sierra Club's interpretation of the regulation would inevitably result in the total prohibition of ORV use because it is doubtful that any discrete area could withstand unrestricted ORV use without considerable effects. However appealing might be such a resolution of the environmental dilemma, Congress has found that ORV use, damaging as it may be, is to be provided "where appropriate."

BLM's position in this matter was that while the damages sustained by the area are severe, Dove Spring Canyon itself constitutes only 0.025 percent of BLM-administered lands in the California Desert Conservation Area (CDCA), and therefore the damages are not "considerable" in the context of the management unit as a whole. This method of assessing damage could designate BLM's national jurisdiction or any other arbitrary area as the "management unit"; 0.025% of BLM's national jurisdiction would be 118,500 acres, or the equivalent of nearly 40 Dove Spring Canyons. And, of course, this approach ignores the indirect impacts, which, like those of mining, probably affect 5 times the area of the direct impacts.

Again in 1985, the U.S. Court of Appeals for the Ninth Circuit ruled against the Sierra Club's argument that the BLM violated the Federal Land Management Policy Act, as well as numerous other statutes, E.O.s, and regulations in renewing the Barstow to Vegas



motorcycle race. The facts and finding in the case are illustrative of the Court's attitude toward resource protection. The Court noted that:

Section 302(b) of FLPMA requires the BLM to "take any action necessary to prevent unnecessary or undue degradation of the (public) lands." Sierra Club argues that designation of the Barstow to Vegas course has resulted in "severe, and in some cases, irreversible damage" which is, therefore, "undue." Sierra Club also contends that "by no stretch of the imagination" can race course designation be characterized as necessary or appropriate.

In addressing this argument, the Court concluded:

Sierra Club's proposed interpretation of this regulation would result in the prohibition of ORV use because it is doubtful that any area could withstand such use without degradation.

Despite the court "victories" by BLM, the agency nevertheless terminated the Barstow to Vegas race in 1990 for the second time. The reason for this quite clearly is not a new-found concern for the environment, but the fact that current legislation (Desert Protection bill, H.R. 2929) calls for giving to the National Park Service (NPS) some of the turf now controlled by BLM, and changing how it manages what remains under its jurisdiction in the Califor-

nia desert. The Barstow to Vegas race was a prominent symbol of the BLM's disregard for the environment, and had to be temporarily dumped to foster a positive Bureau image. If the BLM wins this legislative battle by defeating or significantly amending the Desert Protection bill, the Barstow to Vegas race will be back.

As if a reminder were needed of the quality of the federal lower courts, a decision was handed down in Los Angeles just before Thanksgiving (1991) allowing 10 members of the "Sahara Club" to make a Barstow-Vegas protest ride in exercise of their First Amendment rights. Thus, the environment takes it on the chin whether BLM wins or loses in court!

State Off-Highway Vehicle (OHV) Program: California's OHV program provides sites for vehicular recreation that are ostensibly chosen to minimize environmental damage. Like the federal program, the practical effect of the state program has been legalization, in this case through purchase, of existing ORV sites. The principal sites, State Vehicular Recreation Areas (SVRAS), were acquired without adequate assessment of either the natural values present or the difficulty of containing the damages within the area of use. No consideration was given to the problems of rehabilitation if and when the SVRAS are no longer used for vehicular recreation, al-

though this is now required by the 1987 reauthorization of the program.

Inadequate assessment has resulted in selection of sites with important natural values, and with drainage/SVRA boundary relationships that make protection of adjoining properties difficult. Among the more serious problems in existing SVRAS are uncontrolled or poorly controlled erosion and inadequate protection of adjoining properties from excessive runoff, which causes off-site erosion; siltation; and inadequate boundary control and thus trespass. Because many areas have essentially no traffic controls and unskilled youthful drivers are operating powerful machines, "recreation" becomes mayhem.

Total income to the fund from inception through fiscal year 1989/90 is about \$195 million, of which more than 80% represents gas tax transfers and interest earned on that money. In FY 89/90, registration and SVRA user fees accounted for less than 10% of all revenues. About 40% of total revenues have been used to buy and maintain the SVRAS, 40% as grants to local and federal agencies for purchase and maintenance of ORV areas, and 20% for program administration. The state has acquired only 7 SVRAS, and only one in the last several years, so the program has shifted largely to one of grants to the federal govern-

ment. The reason for this is at least in part the strong opposition that arises from neighbors-to-be every time an SVRA site is proposed, and the fact that federal agencies already control large areas and are willing to accept state money to use them as vehicular recreation areas.

That millions of dollars of state tax revenues are given to the federal government to foster ORV use seems not to be widely appreciated. This policy results in subsidizing the favored part of an already imbalanced recreational program: in response to the state ORV Commission's policy for operation and maintenance grants, the California State Director of BLM wrote that "Currently almost 30% of the Bureau's recreation budget in California is spent on off-road vehicle use (planning, management, operations, and maintenance). The expenditure is significant considering that OHV related visits to public lands account for only 12% of the total recreational use." The BLM budget as given is a gross underestimate because it includes only a tiny fraction of the true costs of maintenance and rehabilitation.

There are now more than 90 federal, state, private, and local government ORV facilities in California, not including State Parks in which ORV use is allowed, crosscountry race courses, and probably at least as many unsanctioned (that is, illegal) areas in habitual use.

In addition, the ORV interests have exerted strong pressure on the FS and BLM to provide land for a state-wide ORV trail system. This particular enterprise is already projected through numerous Wilderness Study Areas, and legislation was recently enacted that allows unregistered vehicles with unlicensed operators to use public roads and highways as connecting links between segments of the trail system.

Money will continue to flow into the OHV Fund indefinitely, with growth-inducing effects on ORV recreation. The program enjoyed a windfall benefit when state gas taxes were increased in 1990. Yet, despite the large sums of money invested, the environmental problems have not been solved — indeed, they are growing bigger.

CONCLUSIONS

Even though long-term environmental damages from off-road vehicular recreation have been well-documented, and presidential orders have been issued with the intent of curbing the abuses of public lands, half a million acres in the California Desert Conservation Area are dedicated to this use, and unsanctioned use takes place in perhaps as large an area. BLM recently halted (for the second time) the big crosscountry motorcycle races; but whether illegal running of these

events, which occurred in the years following denial of a permit in 1975, will be prevented remains to be seen. Small illegal protest rides in 1990 and 1991 were effectively identified by BLM, but prosecution of violators has not yet been achieved. Already a big increase, from 200 to 500, in participation in a "non-competitive" ride has been permitted by BLM for Thanksgiving weekend, 1991. This can only mean that BLM still has not learned from its failure to control big ORV events.

The extensive recreational vehicle open areas (where vehicle operators are permitted to do anything the vehicle is capable of doing) are treated as sacrifice areas. Such a management policy is inconsistent with multiple use/sustained yield management criteria of the Federal Land Management and Policy Act, and has no viable scientific basis: the severe damages inflicted on these lands cannot be restricted to the designated areas of use. The federal courts' decisions show that the only avenue for judicial relief is to change the law, and make much more specific the management mandate regarding ORVs. Not only has this not happened, but legislation (H.R. 2950) promises to greatly exacerbate the problem by allocating a portion of federal gas tax revenues "...for the purposes of maintaining [motorized] recreational trails." This language, in the general transportation bill, sunsets in 6 years, and the money (\$180 million) was authorized but not appropriated. Hence, appropriation will have to be justified annually. Since the federal government has done practically nothing in the way of rehabilitating land damaged by ORVs or enforcing its own regulations, a strong case could be made to spend all funds allocated under H.R. 2950 and subsequent reauthorizations, if they occur, solely for the purposes of enforcement and rehabilitation. The bill, however, specifically limits expenditures for "Environmental protection and safety education programs and enforcement" to 5%. Other provisions limit state administrative costs to 7%, and otherwise are aimed primarily at acquisition and development of ORV facilities. This is the same scam perpetrated on California, and will have the sure effect of enlarging the legacy of degraded lands we pass to the future.

The California ORV program was instituted (in 1972) with cooperation of environmental groups on the presumption that provision of legal areas of use would give leverage to curb illegal use, and areas could be picked and managed to reduce adverse effects. What has actually happened is creation of an open-ended land acquisition program for a single use and the granting of substantial subsidies to the federal government for the same destructive land use. Illegal use has not been

curbed, areas have not been selected to minimize impacts, and, with a few exceptions, the lands are poorly managed. The lesson here is that any mention of state ORV programs should be seen as a foot in the door. If the past is a fair indicator, nothing good for the environment will come from such enterprises.

Howard Wilshire is a scientist with the USGS. His efforts to expose the damage ORVs are doing to the California desert have not always been appreciated by the agency that employs him, nor by the BLM.

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An ORVer View of Public Lands

by Rod Mondt

In May the pavement in Death Valley, California is so fiery that you wear thick-soled boots just to protect your feet from burning. The true desert rats settle in to enjoy the slow spell, the summer siesta season, in one of the hottest places on Earth. Death Valley National Monument is a winter park and in late spring the National Park Service (NPS) closes or restricts access to many of the backcountry roads. Like winter closures in many of the summer parks (parks that experience crowds during summer, but not winter), this closure affords a needed respite from wheeled tourists. Even in the "high use season," Monument policy limits vehicles to established roads.

Nonetheless, one of the required tasks of rangers in Death Valley National Monument is the raking of ORV tracks found in the salt pan, the dunes, or in tertiary mud flows of Twenty Mule Team Canyon. The reasoning is that, if tracks are present, the next guy who comes along has an excuse to follow the lead of the earlier vehicle and soon there is a new ORV trail. Raking tracks is a miserably hot job and those who partake quickly become bitter and contemptuous. It's easy to understand, then, why rangers are elated when they receive reports of vehicles stuck in the salt at Badwater. They hasten to the scene for fear the "evil doers" might escape, depriving them of the chance to administer a little "Death Valley Justice."

Badwater is the lowest terrestrial point in North America. It lies at the edge of a vast shimmering salt flat that stretches across the valley floor and is celebrated as one of the hottest places in the world. Working in National Parks and Monuments can produce a lifetime of first rate memories. One of my best was the late May afternoon I spent lolling in the air-conditioned cab of a government pickup watching healthy, young marines dig their truck out of the muck some 100 yards off Badwater's paved parking surface. These particular marines had just been released from Twenty Nine Palms and were out to discover the desert. What they really discovered was a lesson in desert geomorphology. Salt flats are underlain with ground water and the salt is but a thin crust over a slushy understory of mud, water, partially precipitated salts, other minerals, and anything else that happens to be carried along in the evaporation process. Spending hours digging, winching and then raking out their tracks, the marines learned a lesson they will never forget. Unfortunately the

marines at Badwater were among a small minority of ORVers who actually pay in hard sweat for their environmental degradation. The majority ride outside of NPS jurisdiction on land administered by the Bureau of Land Management (BLM) and the United States Forest Service (USFS), where the damage is accepted as a legitimate use of the public lands.

B TO V STOPPED??

After many years conservationists and arid land scientists have finally prevailed: the Barstow to Las Vegas off-road vehicle race has been stopped again in favor of the Mojave Desert ecology and the Threatened Mojave population of the desert tortoise. However the American Motorcycle Association (AMA) has applied for and may well receive authorization from the Bureau of Land Management to run another B to V in the fall of 1992. At least one federal judge must feel the "clubbers" have a case; during the 1991 Thanksgiving Day weekend he granted a temporary restraining order against the B to V closure and allowed "Super Hunky" and nine other "Sahara Clubbers" to ride the course legally in a first amendment type protest of the closure. The BLM may well succumb to the pressure of the "Sahara Club," their dirt biking lawyers, and the AMA. The BLM, like the Forest Service and other "multiple use" agencies, has interpreted multiple use mandates to mean that they are required to recognize ORV use as an appropriate form of "recreation" on the public lands.

ORV POLICIES RANGE WIDELY

The vast majority of the public lands in the United States are managed by the Forest Service (FS, 187.5 million acres), BLM (337 million acres), Fish and Wildlife Service (FWS, 90 million acres) and NPS (76 million acres). The remaining public lands are the charge of a variety of federal, state, county, and municipal agencies. The management of off-road vehicles varies, depending on the agency, the manager, and how rules and policies are interpreted and enforced. Management techniques run the gamut from an outright ban, to wide open areas where drivers are allowed to take their vehicles anywhere they will go. As a general rule the multiple use agencies—BLM and FS—acknowledge ORVs as a legitimate form of recreation, while the preservation agencies—FWS and

NPS—are less likely to recognize use as compatible with management directives. However, one Forest Service unit, the Hoosier National Forest in Indiana, has a ban on ORV use.

The BLM generally ranks its lands on a scale from completely closed, as in Wilderness, to completely open, as in some sand dune systems of the Southwest. The classifications are allegedly based on soil science, concerns about flora and fauna, user needs, and potential conflicts. Use is supposed to be monitored and adjusted where necessary to prevent "undue damage to the resource." Needless to say interpretation of the term "undue damage" is highly subjective.

The Forest Service uses a dualistic system whereby areas are either "open unless designated closed," or "closed unless designated open." The latter allows vehicles only on roads, trails, and byways declared "open." The Forest Service bases the decision to designate areas as "open" or "closed" on criteria similar to those employed by the BLM.

ORV policies on federal land managed by the National Park Service and US Fish and Wildlife Service are less complicated. Both agencies rely on the Code of Federal Regulations which states, "The use of motor vehicles off established roads and parking areas is prohibited, except on routes designated as open for that use." In Parks and Monuments the NPS does not allow off-road driving. In NPS Recreation Areas and Seashores ORV use is limited to areas designated by the superintendent. The FWS restricts ORV use to areas where they will not disturb wildlife.

The BLM, FS, NPS and other federal agencies are mandated to include public comment in the designation process. Unfortunately the same is not true for all state lands. Like the federal lands, state lands have a wide variety of regulations. Indiana has completely forbidden ORV use on state land for 20 years. But most state land agencies allow off-road driving in specific areas set aside for such use, commonly called "sacrifice areas." In states that don't provide "play areas" ORVs are either not allowed on other state lands or limited to trails. In some cases these trails are exclusively for motorized use; in other cases they're also open to mountain bikes, hiking, and equestrian use. If trails are heavily used by ORVs, however, others tend to abandon them and by default they become a motorized vehicle network. Many states are following California's lead in establishing "Greensticker" licensing fees and user taxes on gasoline and ORV accessories. The monies from

FS Serves ORVers in KY

In Kentucky the US Forest Service bulldozed 15 miles of the Sheltoewe Trace hiking trail to make an 8-foot wide lane for off-road vehicles. Discovery of the devastation prompted Appalachia—Science in the Public Interest (ASPI) to create a Forest Project to campaign against the use of ORVs on public land in the state. Destruction by ORVs is particularly heavy in Kentucky, because ORVs are not allowed to operate in neighboring Indiana's Hoosier National Forest. The celebrated Land Between the Lakes and Red River Gorge are among the places impacted. ASPI director Al Fritsch charges that the state of Kentucky and the US Forest Service are encouraging ORVers from Indiana and Ohio to come to Kentucky.

ASPI's Forest Project is documenting and publicizing the tremendous erosion on portions of the Sheltoewe Trace and nearby lands, and in Laurel County, Kentucky, described as one of the world's most eroded areas. The *Lexington Herald*, the *Louisville Courier Journal*, and numerous smaller papers have printed stories on ASPI's charges. The press paid particular attention to a display ASPI has developed for Kentucky's Bicentennial. One part of the display presents the state's official promotional photographs; another presents ASPI photographer Steve Fleming's photos of the devastation in Kentucky forests. The display, which has already been shown at Western Kentucky University and the University of Kentucky, will tour the state.

Project members collected 900 signatures on a petition, which their lobbyist delivered to the governor, to the supervisor of the Daniel Boone National Forest, and to members of the Kentucky Congressional delegation in Washington. Several of the delegation, including Senator Mitch McConnell, have responded positively. Other facets of the project include training sessions for activists, production of a satiric videotape, and a report that will present an economic and political review of FS policies in Kentucky and neighboring states. The videotape and the report are scheduled to be released this fall.

For further information contact ASPI, Route 5, Box 423, Livingston, KY 40445 (606-453-2105).

—Mary Byrd Davis

these taxes are to be used for establishing "environmentally sensitive" trails, mitigating previous damage, enforcing regulations, and otherwise managing off-road driving. On the surface, ideas like these seem feasible; but in reality they give agencies in charge of public land the incentive to manage for ORVs and they magnify the influence of ORV groups.

The agencies have reacted to the funding "carrot" like state game and fish departments reacted to the Dingle/Johnson Act. The land manager points out that the ORV industry and user groups are funding projects. ORVers become like hunters and fishers when they are, in effect, paying a fee to use the land. Agencies like to manage, and gas tax dollars increase budgets, increased budgets mean more managers, and more managers mean more dollars. Greensticker programs create a vicious circle wherein ORVers create "new demands" and the agencies use this increase in "demand" to justify more management, which demands more funding and so on. Meanwhile the ORV industry has established groups like the National Off-Highway Vehicle Conservation Council (NOHVCC) to lobby for legislation that benefits the industry. Last year wilderness foe

Senator Steve Symms (R-ID) introduced and Congress passed the "Symms National Recreational Trails Act" (SNRTA). The legislation will provide funding from existing gas taxes to maintain and develop motorized (30%) and non-motorized (30%) trails on public land. The other 40% of the money will be used to establish "innovative corridor sharing." Research has shown that areas where ORV use becomes significant are effectively closed to others. In effect, then, this bill may provide 70% of the funding to benefit ORV use. The legislation is the product of input from the Idaho based "Blue Ribbon Coalition" and motorcycle industry associations. Save for the "mandatory helmet" rider attached by Senator John Chafee (R-RI), the ORV groups are ecstatic over the bill.

In most states, to use vehicles on roadways, the vehicle and driver must be licensed. Some states have restricted off-road driving in similar ways: ORV operators must be licensed, wear a helmet, have a license on the vehicle, and stay in specific areas. ORV groups have reacted to such regulations like the "Hells Angels" did to helmet laws and have lobbied hard to overturn them. A number of counties and cities throughout the

country have implemented much more stringent restrictions on ORVs than those of federal or state agencies. The reason is simple. The public does not want a noisy, smelly, obnoxious, and dangerous cult of two stroke punks in their back yards.

ORV FIGHTING TIPS:

(1) Agencies like consistency. It is easier to manage jurisdictions that abut another agency's land if the rules in one area correspond to the rules in the other. With that in mind, work to adjust the regulations, based on the most restrictive, so as to form consistent policy across jurisdictional boundaries.

(2) On Forest Service lands, work to secure a "closed unless designated open" policy. Each National Forest should be made to monitor use. Federal agencies are mandated to mitigate any activity that causes resource damage.

(3) Attempt to implement conclusive language into any FS or BLM planning documents when they come up for renewal. Demand and review all environmental impact analyses and monitoring done in a region affected by ORV use. The agencies are mandated to monitor ORV use. Demand to see the reports. Agency personnel will resist because it limits their "professional judgement." Be persistent!

(4) Work to tighten local and county ordinances. Start where you have the greatest support.

(5) Become involved in the "Greensticker" funding process at the state and national level. Demand more dollars for the majority users, backpackers and hikers, and less for ORVers.

(6) Educate yourself, the public, and the land managers. It's shameful but true; in most cases the well read volunteer activist will know more about ORV problems than the paid land managers.

(7) Expose the selfish motives and elitism of the AMA, industry backed groups like the NOHVCC, and other ORV interest groups.

(8) Expose the environmental and cultural effects of ORV use. Science is completely on the side of strict control or outright closure. The "right" to use public lands is the only effective ORV argument. It must be dealt with if we are to severely limit or completely eliminate ORVs from the public lands.

(9) If you have a local problem, form coalitions with other groups that are affected by ORV use. Contact the National Off Road Vehicle Task Force (NORVTF, PO Box 5784, Tucson, AZ, 85703) for contacts in your region or for more information.

(10) Finally, as much as this may rile some, use all possible allies. Drive the wedges deeper. Equestrian users and ranchers tend to hate ORVs, since ORVers scare livestock, cut fences, leave gates open, etc. Line up on this issue with these interest groups. If your stomach can't handle it, find someone in your group with a stronger stomach.

Rod Mondt coordinates NORVTF and serves in the North American Wilderness Recovery Strategy clearinghouse.

ORV Swarms Spread

National Off-Road Vehicle Task Force
POB 5784, Tucson, AZ 85703

by Rod Mondt

BAJA BLUES

To those of us in Arizona, Sonora, Mexico is the land below the line, the land between our state and the Gulf of California. The coastal fishing town of Puerto Peñasco (Rocky Point) sits just sixty miles south of the international border, and astride the littoral sands of the Gulf of California. Nearby are the great dunes of the Grand Desierto. Arizonans are now afforded convenient access to Peñasco along Mexico's highway 8. This easy access opened the town to tourists, land speculators, fishermen, and an assortment of gringos and gringo toys.

Today the highway that parallels the trading trails walked by native peoples brings in masses of tourists. According to William Hornaday's classic on the Pinacate Desert *Campfires on Desert and Lava*, 85 years ago the scientist Godfrey Sykes left his *campaneros* camped at the base of Pinacate Peak and, with "aneroid" in hand, tramped south across the great dune fields. When he arrived at the Gulf, he calibrated his instrument, turned and walked back across the dunes to his camp. For Sykes it was just another 43 mile stroll across some of the most arid country in the world. Most of the Americans who visit the dunes today would tell you walking across the dunes is foolish, and the real adventure is to cruise them in the saddle of a trusted machine. There are no roads to speak of, and the ancient Indian trading paths can still be seen across parts of the desert terrain. However, the last leg of Syke's journey is far less pristine today than it was for Godfrey; the trail through the dunes is lost under the track and spore of an increasingly ubiquitous outsider in this desert community. The off-road vehicle club has found the dunes and the quiet desert is disturbed by the flatulent sputter of two-stroke engines.

Every weekend hordes of Norte Americanos invade the beaches and dunes of Puerto Peñasco. They are destroying not only

the tranquillity, but a large part of the desert dune ecosystem. Like most communities faced with an invading force, Peñasco was forced to do battle or surrender. This small village chose to capitulate and became willing collaborators with the new mob. Mexico needs pesos and they see many millions in the chrome 4x4's, mag wheeled vans, and slick motor homes pulling stacks of ATVs. The plants, animals, and native people are paying a lasting price for the tainted pesos.

The off-road vehicle, or ORV, is a recent desert invader, but unlike other non-natives the ORV doesn't just occupy disturbed lands; it creates them. The Desierto Dunes are home to creosote, bursage, mesquite, sand verbena, dune primrose, prickly poppy, long-lobed four o'clock, and 68 other species of vascular plants. The effect of ORV traffic on desert plant and animal communities is well documented. If this attack continues unchecked, these dunes, like those south of Glamis, California, will become denuded, oil dappled playgrounds for the growing crowd of American "off-road vehicle enthusiasts."

Baja, Mexico, California's neighbor to the south, has long been known to ORVers as the home of the Baja 1000. Today it is being exploited by California based ORVers. Like the rest of Mexico, Baja is trading its resource base for dollars. Rules concerning ORV use, if they exist at all, are lax or ignored.

Unfortunately, a new rogue may soon be on the loose south of the border. After being arrested in the California Desert for violating the BLM closure on the Barstow to Vegas race in 1990 Rick Sieman (Super Hunky), co-founder of the Sahara Club⁽¹⁾ and long time off-road bully boy, decided to head for Baja. It seems he can no longer tolerate the heavy hand of American bureaucracy. He told the judge at his sentencing that he would "have to move to Baja, Mexico, where some freedom for the use of the land still exists." Of course where this pudgy hero goes, his partners in crime are likely to follow, which will mean increased destruction of the Baja landscape. No longer the quaint villages of the past, Baja villages now are viewed merely as down shift obstacles to a full throttle attack on the trails, arroyos, vegetation, and animal life of Baja.

In their new book on Baja, photographers Terry and Suzi Moore⁽²⁾ provide battle photos: cacti festooned with surveyor ribbon, graffiti, pulverized fields, vehicles careening madly down desert tracks, and, like a scene out of the Wild Ones, rows of rental ATVs parked "butt in first" along the village square.

OTHER SITES IN THEIR SIGHTS

What do Mammoth, California; Daytona, Florida; Moorestown, Michigan; and French Camp, Mississippi have in common? To the ecologist similarities are not immediately obvious, but to the reader of *Dirt Bike Magazine* these names and eight others conjure up images of 500cc bikes, spectator lined tracks, skin tight plastic panties and the whine of machines. These towns are home to what the *Dirt Bike* staff calls "America's top 12 Events." Environmentalists who follow these sordid events are painfully aware that the dirt bike phenomenon is a growing plague. This most elitist form of recreation on public lands is permeating the entire country. Like adolescents eager to practice "Big Time Wrestling" anyone with enough money for a bike and gas can aspire to the racing circuit. But where the wrestling aficionado might use his front yard as a practice mat and worship the steroid biceps of a "Randy Savage," the upcoming dirt biker worships that throbbing power between his knees, and craves the untouched virgin landscapes.

Most of the races and the attendant practice areas are located in rural lands, lands that could otherwise provide for the restoration of wildlife habitat. Today's dirt bikers enjoy what the magazine calls "family racing vacations." The motorcycle industry and affiliated clubs like the American Motorcycle Association (AMA) are touting the races and their vacation atmosphere as booms to local economies; and in many rural areas local Chambers of Commerce are buying the hype. The Mojave Desert communities of Barstow and Baker, California, were up in arms over the closure of the B to V race in 1990. According to the person I spoke with at the Parker, Arizona Chamber of Commerce, "the Parker 400 brings in 30,000 people, packs the motels for two or three days, fills the resorts two

months in advance, and enhances gas, beer and sundry sales." The Commerce person made Parker sound like the Monaco of the Lower Colorado, and it's not even listed in the "top twelve events."

In recent years not all has been right with the Parker ORV race (sic). First the United States Fish and Wildlife Service added the Mojave population of the desert tortoise (*Xerobates agassizii*) to its list of Threatened and Endangered species. Because of this the BLM closed the California Desert portion of the Parker 400. The chamber was not happy. But then the BLM and a southern California ORV group came up with an idea to save the race. The BLM authorized ORVers to continue if they moved the entire course across the river into Arizona, home of the not yet listed Sonoran population of the desert tortoise. The BLM even offered race organizers an extra thirty miles of desert road in addition to the miles they removed from the California portion of the race. The organizers, the chamber of commerce, and the BLM were all happy. Even though the BLM "hopes to run in California again in the future," they felt this race had the "potential to be the best one ever." Among the people who weren't just pleased as punch were Arizona environmentalists, most of whom are too busy to adequately address the effects of ORV races on the local bighorn population and the rest of the low desert fauna and flora. There is a lesson in all of this: wildlands advocates in neighboring landscapes, outside prime tortoise habitat, should take preemptive steps, for the mechanized locust has reached its gregarious stage and is starting to swarm.⁽³⁾

In recent years the good old boys in the off-road fraternity have helped demolish the trade balance in order to add one more machine to an invasion force that some have referred to as "Japan's Revenge." The newest member of the force is called the "all terrain vehicle" (ATV); and as with dirt bikes, dune buggies and four wheel drives, it is diffusing like a wine stain on the table cloth of America's last open spaces. The Blackwater 100 in Davis, West Virginia; the Oregon Sandfest in Coos Bay; the Flat River Grand Prix, Flat River, Missouri; The Little Sahara "Snake" Weekend in Oklahoma (which "attracts thousands of riders on Easter weekend"); the Leon Dube Memorial Trail Ride in Allenstown, New Hampshire and others are known as "ATV happenings."

THE "WISE USE" PLAGUE

The off-road industry has been busy of late as one of the writhing snakes in the Medusa of the new "Wise Use movement." The industry backed "Blue Ribbon Coalition," one

of many "Wise Use" monikers, has been working hard to forge alliances with local economic development commissions, miners, timber interests, and even their erstwhile enemies the public lands ranchers. *Dirt Rider*, *Dirt Bike*, and *3 & 4 Wheel Action* have been filled with editorials and advertisements touting every land abuser from the "Sahara Club" to the AMA to "Coalition" director Clark Collins. The "National Off-Highway Vehicle Conservation Council" (NOHVCC) and its industry backers, the "Blue Ribbon Coalition" and its "Wise Use" backers and the AMA are the modern equivalent to the 19th century snake oil salesmen. They're offering a product that they guarantee will help alleviate all the ailments in the rural economy. But like last century, the tonic they push is poison to an ailing environment.

The ORVers' chosen form of recreation is the only sanctioned recreation activity on the public lands that offers a short-term, adrenalin rush thrill to a very small minority while the rest suffer the long term costs. ORV use effectively cordons off large areas of land as vehicular playgrounds. While the ORVers are hard at play, their advocates are lobbying and winning new concessions from the politicians⁽⁴⁾. This group of macho, rough and tumble boys, have convinced influential politicians that only a fool would walk the barren desert sands, ski the white wastelands of a winterized Yellowstone National Park⁽⁵⁾, or canoe the waters of Missouri's Black River. They are busy trying to convince others that to "lock out" off-roaders is "elitist" and UN-AMERICAN; the true American rides his bike, ATV, or dune buggy into the last frontiers in search of freedom.

Reportedly, Godfrey Sykes awoke the morning after his hike beaming, flushed with the exercise, looking forward to another day, another opportunity to discover the desert. Somehow I don't think Godfrey would be happy with the current trend.

ENDNOTES

1. The "Sahara Club" is an organization

started by Louis McKey (AKA, "The Phantom Duck") and Rick Sieman. Both individuals have long been off road terrorists, and are presently publishing a newsletter that extols the virtues of violence against anyone they perceive as standing in the way of their "right" to use the deserts and mountains as their personal race tracks.

2. Terry and Suzi Moore along with author Doug Peacock have recently completed *Baja!* available from Little, Brown and Company, at your local book store or by mail order from, Books of the Big Outside, POB 5141, Dept. WE, Tucson, AZ 85703 or call (602) 628-9610.

3. The March 1992 issue of *Dirt Rider* reports things are not looking good in the ORVers' fight to reopen the Barstow to Las Vegas ORV race. The magazine has called for a replacement race and they have decided the "Fallon to Lovelock Hare and Hound" is the best candidate in northern Nevada. The "Wells to Wendover" is also recommended; "it runs across miles of virgin terrain and three mountain ranges."

4. Senator Steve Symms (R-ID) recently introduced and congress passed the "Symms National Recreation Trails Act" See "ORVer View," this issue.

5. We have heard that in recent winters Yellowstone National Park has been invaded by some 60,000 snowmobiles. More information about this invasion is sorely needed. Contact: NORVTF, POB 5784, Tucson, AZ 85703



Suddenly alive,
Raven brings me back,
lulled by the water, duck talk,
mountains reaching
into my heart,
the bridge of dreams,
the snow covered life.
Raven's voice pulls me back,
awake, tells me;
You Pay Attention
If you want to hear the story
 put your hands in water
If you want to hear the story
 watch where the wind carries us.

—Gary Lawless, from *Sitka Spring* (1991, by Gary Lawless with art by Li Ching; Blackberry Books, RR 1 Box 228, Nobleboro, ME 04555)

VICTORY ON MILL MOUNTAIN!

The U.S. Forest Service is keeping it a secret but they recently dropped the Mill Mountain Timber Sale on the George Washington National Forest. This sale would have roaded a critical area adjacent to the Rich Hole Wilderness and threatened a rare mountain pond on Pond Ridge. Dropping the sale is associated with the recent designation of 10,826 acres of Mill Mountain as officially roadless.

We first learned about Pond Ridge from Brenda Vest in 1988 before our First Eastern Big Wilderness Conference. On Sept. 10 of that year Crickett Hammond and Brenda arranged a field trip to the Pond with 6th District Congressman Jim Olin. Loggers eager for the kill were also present, as was a reluctant ranger. Trees had already been marked for cutting to the Pond's very edge. The trip ended on a sour note with only minimal commitment by Mr. Olin and the Forest Service to protect it. It was important to gain at least temporary protection from the imminent timber sale until such time as the area might be designated a roadless or a Wilderness Study Area.

We continued to press the issue in numerous letters, demonstrations and field trips. Olin demonstrated a complete insensitivity to ecological issues and a growing hostility toward any more Wilderness. The Forest Service maintained an attitude that can only be called vindictive duplicity. Although local Virginians for Wilderness/Earth First! activists were most instrumental in protecting Mill Mountain and Pond Ridge in particular, they were kept in the dark as plans for the area unfolded. Only recently did they learn that the Mill Mountain Sale had been dropped.

All who supported the effort to save Mill Mountain, particularly Crickett and Brenda, deserve credit for the rescue of a variety of species, including the salamanders, invertebrates and aquatic plants of Pond Ridge and the black bear who use its mud wallows. However, such areas are never truly safe, as experienced activists know. Full Wilderness designation would bring us closest to that goal. The Mill Mountain Roadless Area is still at the mercy of the evolving Forest Plan. Among the draft alternatives of that plan only Alternative 3, the Wilderness/Corridor alternative or some similar Wilderness designation can assure permanent protection. We must continue our vigilance to assure Mill Mountain remains inviolate and takes its place in an expanded

Wilderness/Corridor System for the entire Appalachians and beyond.

Please contact the Supervisor of the George Washington National Forest (POB 233, Harrisonburg, VA 22801) and ask that Alternative 3 be chosen as the Forest Management Plan.

—Bob Mueller, *Virginians for Wilderness*

RARE ORCHID PROTECTED UNDER ESA FOLLOWING THREAT OF LAW SUIT

Ute ladies' tresses (*Spiranthes diluvialis*), a wild orchid found only in a few riparian areas in Colorado, Utah and Nevada, has been added to the U.S. Fish and Wildlife Service's Threatened species list. The final decision to federally protect this rare orchid appeared in the Federal Register on January 17—only a few days before the Biodiversity Legal Foundation planned to file suit in Federal District Court to force the listing. The BLF had filed a formal 60 day notice of intent to file suit against the Fish and Wildlife Service (FWS) on 19 November 1991, following a one year monitoring process that disclosed bureaucratic footdragging in the listing of the imperiled plant.

Spiranthes diluvialis, a unique hybrid of mountain and plains orchids that came together during the latest Ice Age, grows in mesic (moderately wet) to wet alluvial meadows. Its flowers have 3 to 15 small, white or ivory-colored blossoms clustered into a spike arrangement at the top of the stem.

The ESA listing of Ute ladies' tresses was opposed by the Washington office of the U.S. Forest Service, some members of the Utah congressional delegation and attorneys representing the Coors Brewery in Golden Colorado. The reason for such a formidable coalition of development interests against such a small delicate orchid may be the plant's vulnerability to summer livestock grazing and water projects and the plant's presence along Clear Creek in Jefferson County, Colorado, on land owned by the Coors Brewery.

The BLF will closely monitor recovery efforts for this rare plant and its riparian/wetland ecosystems. "Ute ladies' tresses" is now treated as the species common name in recognition that its historic range coincides with the ancestral home of the Ute Indian tribe.

—Jasper Carlton, *Biodiversity Legal Foundation*

AMPHIBIANS IN SERIOUS DECLINE IN WESTERN STATES, LEGAL ACTION ANTICIPATED

Substantial scientific evidence exists to indicate that many species of amphibians are declining in the Western states as well as in other areas of North America. Leopard Frogs, Boreal Toads, Spotted Frogs and Tiger Salamanders are experiencing serious population decline in various locations. Many biologists believe that declines in amphibian populations could be signaling advanced degradation in the environment.

Amphibians may be the best vertebrates to use as biological indicators of several types of environmental degradation. Their skin is permeable to airborne gases, they live both on land and in water at different stages of life, and they are fairly high in the food chain. In many ecosystems amphibians constitute a major component of total biomass, and their loss could lead to significant disruptions in the ecology in many areas. Even in seemingly pristine habitats many amphibians are disappearing rapidly. These declines have been particularly serious since the late 1970s.

The introduction of exotic predators (usually bullfrogs or fish) and the destruction of natural habitats, especially of riparian/wetland ecosystems in the arid West, are probably contributing factors in the decline of many species. The Great Basin has been particularly hard hit as a result of massive water projects. However, the causes of most of the declines are not fully known.

The field data necessary to ascertain changes in amphibian populations, and to determine the underlying causes, are seriously inadequate. Under the Bush administration research on environmental degradation and loss of biodiversity is woefully underfunded. Unfortunately, mainstream environmental groups have been reluctant to become strong advocates for "uncharismatic" species.

The Biodiversity Legal Foundation recommends that ecosystem research projects be initiated by state and federal agencies which focus on specific indicator taxa, such as amphibians in the Western states. Comprehensive studies of the functioning of entire ecosystems also are urgently needed.

The U.S. Fish and Wildlife Service has been dragging its feet in the listing and protection of rare and biologically endangered amphibians under the Endangered Species Act. The Biodiversity Legal Foundation is now

considering litigation in federal court to compel FWS to list the Spotted Frog (*Rana pretiosa*), the Western Boreal Toad (*Bufo boreas boreas*), and Amargosa Toad (*Bufo nelsoni*).

The BLF needs current and historical information on the status, distribution and threats to the following species: Amargosa Toad, a lowland species; Red-legged Frog (*Rana aurora*), a lowland species; Cascades Frog (*Rana cascadae*), a montane species; Foothill Yellow-legged Frog (*Rana boylei*), a lowland species, probably already extinct in southern California; Northern Leopard Frog (*Rana pipiens*), a montane species; Lowland Leopard Frog (*Rana vavpainsis*); Mountain Yellow-legged Frog (*Rana muscosa*); Wood Frog (*Rana sylvatica*); Vegas Valley Leopard Frog (*Rana onca*), a lowland species that may be extinct; Tailed Frog (*Ascaohus truei*), a forest species that may still be abundant in unlogged areas; Olympic Salamander (*Rhyacotriton olympicus*), a forest species that may still be abundant in unlogged areas; and the Tiger Salamander (*Ambystoma tigrinum*), usually a montane species in the west. Information collected will be used to develop and implement administrative, legal and public education programs on behalf of the species and their ecosystems. Please send information to: Biodiversity Legal Foundation, POB 18327, Boulder, CO 80308-8327. Thank you.

-Jasper Carlton

KEYSTONE TREE OF ANCIENT CACTUS FORESTS COOKS US STEAKS

Ironwood or "palo fierro" (*Olneya tesota*) is a legume tree unique to the Sonoran Desert. Ranging from southern Arizona and southeastern California through Baja California and Sonora, Mexico, it plays a major role in the nitrogen and water dynamics of desert washes. Along the Sea of Cortez coast, the *palo fierro* replaces Mesquite and Palo Verde as the largest and most ecologically important tree along watercourses. The Ironwood may also be the longest-living tree in the North American deserts, attaining ages of at least 800 years. Its durable wood — second only to Lignum-vitae in density and weight — may persist on the desert floor for over a millennium.

It is worth considering Ironwood the "old growth" tree of ancient cactus forests. Giant cacti like Saguaro, Organpipe, Cardon and Echo all begin their lives in the shade of this "nurse plant." Desert wildflowers and climbing vines are more abundant in the shadow of Ironwoods than they are on barren desert soil.

Several of the hundred-some plants at risk in the Sonoran Desert as a whole are strongly associated with Ironwood habitat. They include two kinds of Night-blooming Cereus and the Acuna Cactus, as well as certain vines such as the Tumamoc Globe-berry. Although Ironwood itself is not an endangered species, it provides critical microhabitats for numerous threatened plant species that are much more restricted in their range. Over the last two decades, large Ironwood trees have been depleted. This is likely to reduce the capacity for cacti and other restricted species to regenerate for the next 500 - 1000 years.

Animals also depend upon this keystone species. Countless invertebrates depend on Ironwood foliage, flowers, trunks, snags and mulch for forage or microhabitat. Several birds roost or nest preferentially in Ironwoods, and use the corridors they form along desert washes during migrations. Reptiles such as the Desert Iguana — endemic to the Sonoran Desert — use crevices in dead trunks for cover. Some mammals eat its foliage and seeds.

The biological diversity associated with Ironwood habitats is at risk. There are several major threats. Sonoran cattle ranchers have converted hundreds of thousands of acres of cactus-Ironwood forest to pasture lands seeded with the exotic buffelgrass. All rare native species within these converted rangelands have been negatively impacted by this aggressive species, and it has spread into adjacent parks and protected zones.

Since 1985 charcoal production has also accelerated Ironwood depletion. Most of Sonora's charcoal is sold as "carbon de mesquite," famous for its aroma favored in steakhouses. However, Ironwood is a substantial "bycatch" of Mesquite cutters, just as dolphins are caught by tuna fishermen. Charcoal producers actually prefer Ironwood to Mesquite, because its pieces stay solid and don't deteriorate into dust. With either, however, about 60% of the potential energy of the wood is lost when converted into charcoal in crude, unlined, earthen ovens. While tree growth rates in Sonora are among the slowest in Mexico, Sonora produces nearly 70% of the Republic's charcoal. The bulk of it is exported to Arizona and California, where it may grill steaks produced on Sonoran buffelgrass. Nonetheless, steakhouses across the U.S. now use it. This charcoal goes for only \$25 a cubic meter, 20 to 100 times less revenue than it would bring Mexicans were the same wood used for arts and crafts.

The most well-known use of Ironwood — that of carving animal figurines — was also initiated and driven by American consumer demand. The first carvings were done in 1961 by Jose Astorga for American visitors to the

Seri Indian villages along the Sea of Cortez. The Seri, or "Kunkaak," are the last hunter-gatherer culture in North America to subsist entirely off wild resources, but the fisheries that they depended upon for centuries began to collapse a few decades ago. Astorga and his fellow Seri turned to hand-crafting animal carvings for tourists as one of their last means to remain in their homeland and make a living for their families. By 1968, modern carving and finishing techniques were introduced. By 1971, nearly one-fifth of the Seri were involved in making and selling carvings.

Soon, their non-Indian neighbors began to mimic their carving and were strong competitors for both wood and customers by 1975. As the non-Indians turned to machine-crafting the figurines, they could produce far more carvings than the Seri, and quickly depleted local dead wood reserves. Although cutting live Ironwood is against the law in Sonora, woodcutters clandestinely girdle live trees, then come back a few months later when the trees are dead. The demand for Ironwood is now so great, that it is cut clear up to the U.S. border. Ironwood now sells for higher prices (\$250 U.S. per metric ton) than any other commodity wood in the history of Mexico.

More non-Indians now market their carvings as "Indian crafts" in the U.S. than there are Seri Indians left in the world — 750 or so. Fewer Seri carve today than in 1979, when their income from carvings peaked at about \$250,000 per year. Although the Seri can survive if other carving materials are substituted for Ironwood, all carvers — Indian and non-Indian alike — will soon be adversely affected by the scarcity of wood driving prices too high for consumers to absorb. By their own accounts, "there are only two or three years of harvestable Ironwood left" within 50 kilometers of their workshops.

The candid opinions of Ironwood cutters, carvers, middlemen, and retailers have convinced us that the carving industry is approaching economic collapse. Rather than waiting until 1500-2000 people are suddenly displaced as a result of depleted wood supplies, we wish to initiate the redirection of Ironwood management and use before it is too late. There may be ways to help both Indian and non-Indian carvers discover economic options based on sustainable resource use, to protect the remaining uncut habitats, and to help previously cut areas recover more rapidly.

In the meantime, we encourage Americans to boycott mesquite steakhouses and charcoal outlets, and to alert arts and crafts shops selling carvings of Ironwood depletion. In the autumn of 1991, the Desert Botanical Garden and Conservation International convened the first meeting of an Ironwood task

force in Puerto Penasco, Sonora. Participants included researchers and activists from SARH, UNAM, CICESE, Prescott College, Arizona State University, Drylands Institute Southwest, plus Native and Nature. The task force will coordinate internships, research and development, and conservation actions through 1993. For updates, write Ironwood, DBG, 1201 No. Galvin Parkway, Phoenix, AZ 85008.

—Compiled by Eric Mellink, Gary Nabhan and Humberto Suzan.

THE EIDER SANCTION: ENDANGERED SEA DUCKS NEGLECTED IN ALASKA; LITIGATION THREATENED

The Bush administration is going out of its way to convince the public that there will be no ecological cost to additional oil development projects in Alaska's North Slope area. The administration's bias in favor of unrelenting resource exploitation at the expense of natural diversity is becoming alarmingly apparent in Alaska.

Evidence is growing that many native species are in serious trouble, particularly in northern and western Alaska. Steller's Sea

Lions are now a Threatened species, Walrus young are in decline, and many populations of marine birds and mammals are becoming rare. The Emperor Goose, Black Brandt, White-fronted Goose, Cackling Canada Goose, Red-legged Kittiwake, and Thick-billed Murre have all declined in numbers. The Biodiversity Legal Foundation has identified over 90 plant and animal species in Alaska that may be biologically threatened or endangered. Only 10 of these are presently listed and protected under the Endangered Species Act (ESA).

Two species of arctic marine ducks may be the most endangered of all. The Steller's and Spectacled Eiders, once abundant in Alaska, are small ducks that winter and breed at northern latitudes far away from most human populations. Their breeding areas are the Yukon Delta in western Alaska, the Arctic Coastal Plain of northern Alaska, and eastern Siberia. Both species have experienced dramatic declines in numbers in recent years, and much of their habitat is now threatened by expanding energy exploration and development.

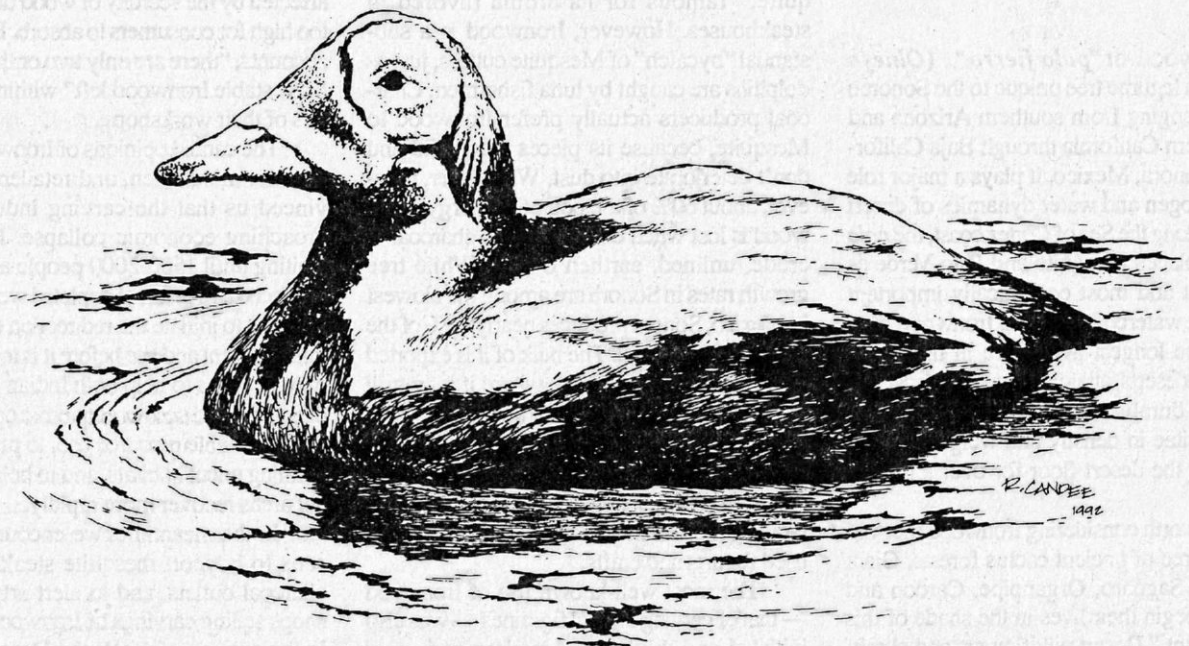
The best scientific data available clearly indicate that the Spectacled Eider (*Somateria fischeri*) is biologically endangered in Alaska. A species may be classified for protection as

"endangered" under the ESA when it is in danger of extinction within the foreseeable future throughout all or a significant portion of its range.

The US Fish and Wildlife Service documented a decline of about 90% over a 30-year period on the Yukon Delta segment of the Spectacled Eider's range. The Yukon-Kuskokwim Delta has historically supported the majority of the world's nesting population of Spectacled Eiders. Ironically, an eider is featured on the Fish and Wildlife Service's 1992 national duck stamp. Meanwhile the numbers of Spectacled and Steller's Eiders plummet and they remain unprotected under the ESA due to bureaucratic foot-dragging.

A thorough review of biological data indicates that the Steller's Eider (*Polysticta stelleri*) is also biologically endangered in the United States. The Steller's Eider is the sole member of the genus *Polysticta*.

The Steller's Eider population has declined 75-85% during the past 40 years. Steller's Eiders should probably now be considered functionally extirpated—no longer breeding—on the Yukon-Kuskokwim Delta, and threatened with extirpation on the North Slope. If the Alaskan segment of the breeding range is essential to its long-term viability, extinction may be near.



Although the Yukon Delta may have historically been the southern extreme of the Steller's Eider's breeding range, it is biologically imperative that the Arctic Coastal Plain subpopulation be preserved. Preservation of each subpopulation is important in ensuring the survival of genetic adaptations of birds from different breeding areas. Such genetic and geographic diversity increases the long-term chances of species survival in the face of environmental change.

There is no up-to-date biological information on nesting Steller's Eiders in eastern Siberia. Recent reports from Russian biologists suggest that the number of eiders breeding in Siberia has declined in this century, with Steller's Eider now rare there. ESA listing of the Steller's Eider could stimulate a cooperative international effort to recover this species.

The specific reasons for Spectacled and Steller's Eider declines are unknown. Possible contributing factors include habitat change, over-harvest, weather, and ecosystem contamination. Contamination from oil spills may have affected eider survival. Some of these factors may be the result of the cumulative impact of human activities in the Alaskan Arctic. As shipping continues to expand in the North Pacific and energy production spreads across the ecologically sensitive Coastal Plain, dozens of marine life forms will be threatened.

In addition, the subsistence take (harvest) of both Spectacled and Steller's Eiders is unknown. The Fish and Wildlife Service has failed to adequately monitor the annual subsistence harvests of either species by Native Americans. These eiders are not being afforded protection under the Migratory Bird Treaty Act.

A petition to add the Spectacled and Steller's Eiders to the list of Threatened and Endangered species was submitted to the Fish and Wildlife Service in 1990 by James King of Juneau, Alaska. King has 35 years of experience tracking waterfowl in Alaska for the Fish and Wildlife Service. FWS is required by law to accept or reject such a petition within one year, but to date (1-92) has not done so. The state of Alaska and large oil companies active in the state view Endangered species as possible roadblocks to their development plans, which may help to explain this delay.

On 3 January 1992, the Biodiversity Legal Foundation, a non-profit, environmental organization headquartered in Boulder, Colorado, filed a formal 60-day notice of intent to file suit against the Interior Department for its failure to list and protect the Spectacled and Steller's Eiders in Alaska under the Endangered Species Act. The ESA listing of these two eiders would result in increased funding for research to tease apart which factors are

most responsible for their decline. It would also give agency officials legal authority to better monitor and control the direct, human-caused mortality of these eiders and to protect the marine ecosystems and nesting areas upon which they depend.

Unless the FWS acts immediately to list the Spectacled and Steller's Eiders as Threatened or Endangered species, the BLF plans to exercise its right to bring an action in federal district court to compel the FWS to meet its statutory obligations under the Endangered Species Act. Additional legal actions are anticipated for other Alaskan species in 1992 if the Fish and Wildlife Service continues to abrogate its responsibility to protect Endangered species and their ecosystems in the state.

While FWS procrastinates in the collection of data necessary to determine the impacts of present human activities in the Alaskan Arctic, the petroleum industry is rapidly moving ahead, with support from the State Government of Alaska and its congressional cronies. Most of this development is taking place in areas critical, not only to eiders, but a vast array of native species in Alaska. If present trends continue, the ultimate casualty may be ecosystem collapse in this country's last truly wild lands.

You may wish to write to John Turner, Director, US Fish and Wildlife Service, 18th and C Streets NW, Washington, DC 20240, and members of your congressional delegation, telling them your views on possible ESA listing for the Steller's and Spectacled Eiders. Please support legal efforts by sending a financial contribution to the Biodiversity Legal Foundation, POB 18327, Boulder, CO 80308-8327. Thank you.

-Jasper Carlton

MT GRAHAM UPDATE

We learned in late December that the University of Arizona had commissioned the consulting firm of Booz-Allen and Hamilton to evaluate the viability of the observatory project slated for the top of southern Arizona's Mount Graham. [See Mount Graham articles in previous WE issues.] The report recommended that the project continue. The report, which cost over \$40,000 and was meant to boost the credibility of the project sponsors, was based on interviews only with the inner circle of the project. Moreover, 12 pages of it were censored. We are seeking to obtain the missing pages via a Freedom of Information Act request.

On February 10, the Apache Survival Coalition filed a brief with the district court in Phoenix declaring Title VI of the Arizona-Idaho Conservation Act as unconstitutional.

This motion for partial summary judgment is based on a separation-of-powers argument. The case will be heard on April 24. The Apache Survival Coalition, Coalition for the Preservation of Mount Graham, and Scientists for the Preservation of Mount Graham will send a delegation to Italy and Germany in March to urge the European partners to withdraw from the project. Work is still under way to provide legislative relief from the project, but Washington slugs move slowly. Friends of Mount Graham appreciate the hospitality of Save America's Forests in providing office space.

—Roger Featherstone

WILD IN ITALY

In Italy the dualistic split between spirit and matter has deep roots. Nature has been considered a mere materialistic entity, without soul, something to tame for man's exclusive benefit.

Long ago, the Old Continent's peoples started to abandon wild Nature physically and spiritually for a cultural pattern that pushed whole generations to tame the wilderness. In the last two centuries this tendency has reached its apex. No wonder, then, that today we are facing the worst environmental crisis ever: degraded woods, polluted rivers, acid rains, native plants and animals disappearing due to habitat destruction.

In the last few decades, many groups have begun fighting to force the government to adopt sustainable environmental practices, and to establish new national and regional parks, natural reserves, and wildlife refuges. Unfortunately, the approach remains utilitarian. Ecological protection is accepted so far as it doesn't go against the consumeristic/technological cultural patterns.

Even in the national parks the so-called "active conservation" permits intensive use of the environment. New roads, ski-lifts, and electric lines are built to satisfy tourists.

Today, little remains of Italy's original wilderness, although sites protected by their inaccessibility and ruggedness have kept or restored some wilderness. The Italian Wilderness Association wants to preserve these places, where the brown bear, gray wolf, marten, and black woodpecker still survive.

The Italian Wilderness Association was established in 1985 by Franco Zunino, naturalist and bear expert of the Abruzzo National Park. Since then the association has fought to prevent further alteration of wild areas and worked to spread the wilderness concept in Italy.

The wilderness concept, here in Italy, is very new. Nevertheless, the association has been able to prevent further damage to many



- ITALIAN WILDLANDS
ACTIVISTS ARE TRYING
TO SAVE.....**
- 1 VAL GRANDE AREA.
 - 2 IL FOSSO DEL CAMPANNO.
 - 3 SERRA LONGA in Abruzzo.
 - 4 CAMPANIA AREA & MT. CESIMA.
 - 5 MAJELLA MTR. & BARDONNEY VALLEY in Grand Paradiso Nat. Park
 - 6 VENETO AREA in DOLOMITI BELLUNESI NAT. PARK.
 - 7 ALPE DI SERRA.
 - 8 PECCIA RIVER
 - 9 CAIRO MOUNT
 - 10 CAIULERA MOUNT
 - 11 RIO 'IS CANARIUS
 - 12 MONTINA VALLEY
 - 13 PADAN VALLEY IN PO WATERSHED



wild areas, particularly in the Serra Longa's area on the Marsica Mountains. This area, about 10,000 hectares, is part of the Abruzzo region's high land. Free of roads and destructive human activities, the Serra Longa is characterized by wide pastures and beech/oak forests inhabited by the "Marsican" bear, peregrine falcon, wolf, and eagle.

A few years ago ENEL (the electric energy authority) planned two dams in the Val Grande/Piedmonte region of the Alps. This 30,000 hectare area of valleys and steep mountains is the wildest part of Italy. Its roughness saved it from industrial tourism and agricultural development. The dams were stopped and recently, thanks to the Wilderness Association, the whole Val Grande watershed was designated by the Environmental Ministry a "Special Natural Reserve." In 1988, an accord of the Municipality Authority, the Forest Service, and the Ghezzi Foundation designated Italy's first Wilderness Area, a very little one, about 700 hectares (1750 acres). Called "Fosso del Capanno," it lies along the Romagna/Toscana region's border; of great importance is its closeness with the natural reserve of the Casentinesi's forests.

Last year, in collaboration with the Municipality Authority and local hunters (a rare case of collaboration between environmentalists and hunters in Italy) a second Wilderness Area, about 1000 hectares (2500 acres) at the foot of the Cesima Mount in the Campania Region.

The Association is also working to protect the Highland of Femminamorta on Majella Mountain, and Bardonne Valley in the Grand Paradiso National Park. The spreading of the wilderness concept has inspired the Veneto region to unite ten areas, about 19,000 hectares (47,500 acres), of pristine wilderness, in the Dolomiti Bellunesi National Park. Projects to institute new wilderness areas are on the way in Alpe di Serra, Peccia River, Cairo Mount, Camulera Mount, Rio "Is Canarius," and Montina Valley.

Also, the association gave its support to a couple of campaigns in North America. It helped a coalition of groups defending Mount Graham in Arizona and Canadian groups defending Kitlope Valley, British Columbia.

Yes, these acts are very important for preserving what remains wild in Italy; but for the sake of the wilderness we ought to consider these just the first steps in the process of healing our rapport with Mother Nature. Here in the Old Continent, the future of the wilderness depends on our capacity to relearn to be inhabitants of our Life-place with the humility to consider ourselves part of a vaster community of Living Beings.

— Giuseppe Moretti

Giuseppe Moretti is an organic farmer in the Padan Valley, Po River Watershed, Italy. He serves on the Italian Wilderness Association's directive council, and is part of the Italian Bioregional Movement.

ROAD THREATENS VULTURES AND SALAMANDERS IN PYRENEES

Construction of a highway linking France to Spain through the Valley of the Aspe would be disastrous to wildlife. The 60-kilometer valley is inhabited by the largest population of Brown Bears in the Pyrenees, 15 of the remaining 20; and it provides habitat for the Griffon Vulture, Egyptian Vulture, Pyrenean River Salamander, and other rare species. With its human inhabitants few in number and engaged in small-scale agriculture, the Valley of the Aspe is one of the last undisturbed valleys in the Pyrenees.

Despite the fact that many of the birds living in the valley are protected by the European directive on the protection of birds and that no environmental impact statement on the project as a whole has been made, the European Economic Community is helping to finance the highway as part of a mega-project stretching from Bordeaux in France to Valencia in Spain.

Let the French Ambassador to the United States know your views: The French Embassy, 4101 Reservoir Road NW, Washington, DC 20036.

For further information and a petition to sign, contact Youth and Environment Europe, c/o JNM-office, Kortrijksepoortstraat 140, B-9000 Gent, Belgium (tel: [32]-91-23-47-81; fax: [32]-91-23-28-05).

JAMES BAY UPDATE

Winter is a quiet time here in upstate New York, when concerns run to whether there will be enough snow for skiing. However, while we become semi-dormant, momentum from years of operating without checks carries Hydro-Quebec toward completion of the James Bay II development on the Great Whale River in northern Quebec. For those who missed our previous articles on the subject, "James Bay II" is the second phase in a series of massive dams in the James Bay and Hudson Bay region being built by Hydro-Quebec, a crown utility corporation. The first phase, completed in 1983, flooded 11,335 square kilometers on LaGrande River at a cost of about \$16 billion to produce 10,282 megawatts of electricity. The Great Whale project would flood an additional 3143 square kilometers to

produce 3060 megawatts.

Cree Indians and Inuit, the people who have lived in the James Bay region for countless generations, opposed the original construction, though they were eventually forced to negotiate an agreement allowing the dams to be built. Since then, they have seen the effects of the project on the land and people — including destruction of habitat for shore-dwelling animals such as beaver, introduction into the food chain of large amounts of mercury, and disruption of traditional lifestyles based on hunting and trapping. Despite claims by Hydro-Quebec of "benefits" enjoyed by the Cree as a result of the hydropower development, they oppose the new plan with more vigor than ever.

In 1975 the Cree and Inuit signed the James Bay and Northern Quebec Agreement, which gives the native peoples an advisory role in future development of the region. "With the exception of one week, the Cree people have been in court perpetually since the treaty was signed, fighting to have that treaty honored by the Province of Quebec and the Government of Canada." (PROTECT newsletter, 1-92) At this writing (3-92), hearings on the scope of an environmental review of James Bay II development are under way in Montreal. Hydro-Quebec's assessment is expected to take 2 years; however, under Canadian law, construction can begin at any time. Already, clearcut logging is taking place in the Nottaway-Broadback and Rupert River watersheds, south of James Bay — areas slated for future flooding.

New York State, bowing to the outraged voices of citizens, has decided to review its proposed contract for 1000 megawatts from the Great Whale project (about 1/3 of the total output). Draft reports on the economic and environmental impact on New York of canceling the contract are to be released in April. These studies do **not** address the impact in Canada of building the dams. A bill that recently passed in the New York State Assembly, and now goes to the State Senate, would require the state to conduct an environmental review of contracts with Hydro-Quebec. Bill A. 2162-B, sponsored by William Hoyt of Buffalo, "...provides that such studies must cover cumulative impacts upon the site and region affected by the generating source of such electricity..." New York's power purchase decision is due by 30 November 1992, coinciding with the end of Hydro-Quebec's self-imposed building moratorium.

Thanks to efforts by the Grand Council of the Cree, this project is receiving worldwide attention. The International Water Tribunal in Amsterdam is studying the issue, with a report due in June. In the US and Canada, grassroots

opposition to Hydro-Quebec's plans is growing. A cry for energy conservation, not exploitation, is increasingly heard. Halting James Bay II development would set a precedent for aboriginal rights and environmental responsibility.

In New York or Vermont, which both have contracts pending with HQ, concerned citizens are writing their US representatives and Governors Cuomo and Dean. Canadians are writing their government officials.

—by Ellen Beberman

Editor's Note: GOOD NEWS! At press time we learned of New York State's decision to withdraw from the proposed \$17 billion contract between NY utilities and Hydro-Quebec. As NY's was to be the largest single export contract, this decision deals a severe blow to the provincial utility and its plans to further degrade the James Bay wilderness.

BACKGROUND TO ASSAULT ON WETLANDS PROTECTION

Current laws and regulations to protect wetlands came from a growing realization on the federal level in the 1970s and 80s that wetlands are critical to ecology and human beings and have been disappearing at an alarming rate. Since 87% of wetland loss between 1954 and 1974 was due to agricultural drainage (primarily as a result of federal agricultural assistance programs), the government prohibited, through section 1221 ("Swampbuster" provisions) of the Food Security Act of 1985, financial assistance in federal programs to any farmer who drains additional wetlands. Monitoring of the Swampbuster provisions is the responsibility of the US Dept. of Agriculture's Soil Conservation Service (SCS), which used its own rules in defining what constituted a wetland.

In addition, section 404 of the Clean Water Act (CWA) of 1972 (up for renewal in 1992) prohibits filling in any wetland unless a permit is first granted by the Army Corps of Engineers. Since the rules for defining wetlands differed somewhat between the four government agencies responsible for delineating them (the SCS, the Corps, the EPA, and US Dept. of Interior's Fish and Wildlife Service - FWS), it was decided that a unified, interagency manual for dealing with wetlands should be drawn up to assist the Corps in discharging its section 404 duties. The result was the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands. The Manual defined as a wetland any area that met three criteria: it must be composed of hydric (water-holding) soils, display wetland hydrology (i.e. be saturated or inundated for at

least seven consecutive days during the growing season), and be covered with a preponderance of hydrophytic vegetation (essentially, plants that can grow while their roots are in water or water-logged soil). If an area of proposed development was found to be a wetland, the Corps could either refuse the permit outright, or grant it while requiring the developer to 1) build elsewhere if possible, and if not, to 2) design the development so as to only insignificantly affect the site's functions and values if possible, and if not, to 3) mitigate the project's destructive effects by protecting, restoring, or "creating" wetlands elsewhere. (Efforts at creating fully functional wetlands have almost universally failed.)

Even though the Corps has granted permits for all but about 4% of the 10,000-14,000 applications per year it has received, developers have complained loudly because of the long delays in delineation decisions (no doubt partly as a result of a shortage of personnel and resources, but, some maintain, also due to a purposeful effort on the part of at least some regional offices of the Corps to rile developers up). Developers have also complained about inconsistencies among different Corps offices on how rigorously they adhere to the Manual's technical criteria, so that the same type of area might be delineated as wetland in one Corps district while escaping such classification in another.

A host of federal programs seek to protect wetlands, but none has so affected development as the Corps's use of the Federal Manual in enforcing section 404 of the CWA. As a result, the agricultural and development lobbies have launched a nation-wide attack on this aspect of federal wetlands protection. This attack is two-pronged: legislative and administrative. The legislative effort has been in the form of Congressional bills typified by HR 1330, introduced by Representative Hayes (D-LA) and now with 172 cosponsors. This bill would essentially gut 404 protection for wetlands by defining wetlands in such a way as to eliminate at least 50% of actual wetlands and by dividing the remainder into three categories—A (pristine), B (good), and C (somewhat degraded)—and providing only fair protection for type A wetlands, poor protection for type B, and no protection for type C wetlands. No consideration is given to the restoration potential of type C areas, to the functions they serve, or to the effects of their destruction on ecologically associated type A and B wetlands. HR 1330 would remove the EPA from the permitting process, leaving it to the Army Corps of Engineers with its dismal record of insensitivity to habitat welfare. Additionally, the bill places an undue burden on taxpayers for protecting the public good by

requiring the government to pay full market value for any type A wetland owned by thwarted developers and speculators.

The administrative attack on wetlands protection is more insidious: enter backstage right the President's Council on Competitiveness, headed by Dan Quayle and with members including Dick Thornburgh (US Attorney General), Nicholas Brady (Treasury Secretary), Robert Mosbacher (Commerce Secretary), Richard Darman (Office of Management and Budget Director), and Michael Boskin (Council of Economic Advisers Chair). The job of this obscure government agency is to ensure that the regulations and rulings of such duly mandated federal agencies as the EPA do not discomfit the nation's polluters and developers. The President has directed that all new regulations, strategy statements, policy manuals, and press releases be subjected to the "Quayle committee's" review. Moreover, when the oil refineries, power plants, chemical industry, and regulated others don't like an EPA regulation or aren't prepared to meet a deadline, they complain to their boy Dan, and he takes care of the situation for them. Thus have the development interests presented their case to the Quayle committee; and thus has it proposed revisions to the Federal Wetlands Manual that would replace tried-and-true technical criteria for delineating wetlands with politically-motivated criteria that would define out of existence a significant portion of the nation's remaining wetlands (of 250 million original acres, approximately 100 million survive).

The revisions would increase the number of days of inundation or saturation needed to make an area a wetland, as well as change the definition of the growing season (reducing it), constrict what is meant by "saturated," change the parameters of hydrophytic vegetation so as to delete species from the list, and place undue burden of proof of decreased wetland function and value upon the protecting agency instead of the agent of destruction. This bastardized Manual would help George Bush fulfill his much-vaunted campaign promise of "no net loss of wetlands," since the areas destroyed as a result of these Manual changes would no longer be defined as wetlands!

During a public comment period about these proposed changes, which closed January 15, EPA received more than 70,000 comments. Over half of the responses were negative, and the comments from people with technical expertise were overwhelmingly negative. The EPA's chief wetlands ecologist, William Sipple, recently resigned over the "bad science" he deems engendered the revisions. According to the National Audubon Society's Clark Williams, the Bush administration now

seems to be in a holding pattern. It is unwilling to rescind its revisions and politically unable to go forward. Williams thinks that the administration may postpone action until after the November election.

Environmentalists are now turning their attention to Congress. In contrast to HR 1330 are two bills that would require the National Academy of Sciences to study wetlands identification and delineation and thus to make possible a scientific basis for any revisions to the Manual: HR 4255, sponsored by Edwards (D-CA) and HR 3578, sponsored by Brown (D-CA) and Scheuer (D-NY).

Meanwhile, there is profound confusion within the Corps and the other agencies that delineate wetlands, and the universal reaction within these agencies to the administration's proposed changes is that they will make field delineations much more difficult and confusing. Hence, the developers' lamentations that the current (1989) manual is too complicated and confusing are revealed as nothing more than a smokescreen: their real concern is that as much wetland habitat as possible be opened up for destruction.

—John Katko

Friends of Wetlands, POB 2016, Elyria, OH 44036

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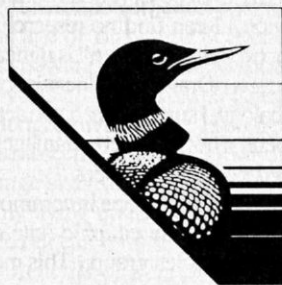
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BENIGN NEGLECT MANAGEMENT:

AN OLD MODEL FOR RESTORING HEALTH TO THE SOUTHERN APPALACHIAN NATIONAL FORESTS

by Robert Zahner

CHANGING CONCEPTS OF FOREST HEALTH

Today I firmly believe that "nature knows best." I did not believe this for most of my 40 years of teaching and research in the fields of forest ecology, forest soils, and silviculture. The entire concept of the forestry profession is that of manipulation of forests to "improve" on nature. In professional forestry, "forest health" has always meant simply the health of a commercial tree crop.

I spent over three decades conducting research on accelerating the growth, and thereby improving the "health," of commercially important tree species, generally at the expense of all other biota in the forest. I taught university courses replete with techniques for achieving "healthy" growth of favored species, including the use of soil amendments, pesticides, genetically improved planting stock, mechanical site preparation, wetland drainage, and above all, silvicultural methods designed to convert forests into crops. Thus the "restoration" of a degraded forest, or its return to health, was synonymous with conversion to a productive (for humans) forest.

It took a world in crisis, an awareness of the unfolding global environmental disasters of the 1970s and 80s, for me and at least some other professional foresters to get beyond the trees into the real forest. My conversion to a preservationist came with the realization that with its immense political power and economic greed, the timber industry was convincing the Forest Service to set outrageous national timber targets. I was finally brought around when this national policy forced excessive road-building and clearcutting on the National Forests of the Southern Appalachians, my home bioregion. The nimby factor really works!

During the 1980s decade I developed and

taught silviculture certification courses for the Forest Service. The National Forest Management Act directed that these courses were to update silviculture for multiple uses, but the personnel who attended were rewarded only for producing commercial timber. Forestry instructors rationalized clearcutting in every manner imaginable, claiming that it accommodated biodiversity, recreation, and watershed values, to satisfy multiple-uses. Policies went from bad to worse under the Reagan Administration, and it has taken a mighty outcry from the combined grassroots and mainstream environmental groups, together with pressure from hard science and conservation biologists, to bring about the current bureaucratic admission that perhaps "New Perspectives" are needed.

Today, at last, the buzzword for forest health is ecosystem health. Aldo Leopold's land ethic has finally made it into today's forestry jargon. I understand that Chief Dale Robertson hands out copies of Leopold's *Sand County Almanac* at important gatherings, and insists that the Forest Service is now committed to preserving *all biotic values* of forest ecosystems. Leopold in the 1930s equated land health with land ethics. Does the Forest Service now have a "new" version of this old ethic, or is this just another hoax to appease the public? The type of management I propose in this paper is a test of this question.

FORESTRY ETHICS: NEW HOPE FOR FOREST HEALTH

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, *Sand County Almanac*.

If the forestry profession is sincere in its shift from multiple "uses" to multiple "values," and the latter include all aspects of Leopold's ethic, then forest managers must discontinue policies that violate the integrity, stability, and beauty of biotic systems. I don't think

Leopold's "beauty" refers only to visual beauty as registered by humans, but also to the spiritual beauty of a functioning ecosystem. This is something humans (*some* humans) may sense intuitively, but it cannot be managed for. Only nature can create this kind of beauty. Leopold put it this way, "Anyone who does not sense the value of beauty in his bones cannot learn that value through any process of logic."

This leaves us with Leopold's "integrity" and "stability." Can a forest be managed for these intangibles? I believe Leopold had in mind for integrity, "keeping all the parts." and I believe for stability he meant maintenance of the "web of life." Biological science has its own definitions of these terms. For example, *stability* generally means the ability to return to an equilibrium, or resilience created by variability; while *integrity* (sometimes termed *complexity*) often refers to the number of species in an ecosystem, the relative abundance of each, and the degree of connectivity of the food chains. Management policies professing to restore or maintain the health of forest ecosystems must provide for the attainment of integrity and stability.

As I discussed above, traditional wisdom in forest management dictates that we can, by meddling and tinkering with forest communities, improve on nature. But the very word "improve" gives away our motives, that we are manipulating natural systems for ourselves, not for the intrinsic values of the systems. Today's most credible state-of-the-art silvicultural practices often mimic nature, but, despite claims to the contrary, they do not result in natural ecosystems.

In the Southern Appalachians, a clearcut and burn technique, for example, does not substitute for a natural lightning wildfire, yet this is a common assertion. The silvicultural treatment destroys all three of Leopold's criteria in the existing ecosystem and creates a simplified community. The lightning fire modifies the existing ecosystem, sometimes strongly, but integrity, stability, and beauty are preserved in the resulting natural community. Naturally occurring fires in these moist mountains burn small acreages, leaving a mosaic of lightly burned and unburned forest mixed with the dead debris of hot spots in sum, a desirable natural type of disturbance.

A major activity of the Forest Service is the putative restoration of damaged, or "unhealthy," forests. In the Southern Appalachians, the Forest Service recognizes two types of such forests: (1) a major insect, disease, or physical problem is present; or (2) the stocking level for a potential tree crop is below an arbitrary operable quantity. In both types, the cause of the problem is often natural, as drought leading to forest decline, extensive

crown breakage by ice storms, lightning fire, or simply shallow soil on south-facing slopes. In both types, the problem may be human-caused, as the introduction of the Balsam Woolly Adelgid, air pollution, human fire, fire exclusion, or past over-cutting of timber. In all cases, Forest Service regulations decree that the problem be "corrected" by management.

THE BENIGN NEGLECT OPTION

Restoration ecology is generally defined as an attempt to compensate for human-caused degradation of natural systems. Techniques applied in restoration range from highly intensive mechanical means to completely passive natural means. Managers can make a valid decision to focus on any level of restoration activity, but the choice should be based on proven results. For most restoration needs on the National Forests of the Southern Appalachians, I advocate the choice of *benign neglect* management, where the decision is to let nature heal herself.*

Where *ecosystem* health is the primary concern in forest restoration, as it should be, benign neglect gives all biota an opportunity to recover their respective places in the community. Native deciduous forests in the Southern Appalachians, even those deemed in need of restoration, are complex, ever evolving systems, with much diversity of species and food chains. By contrast, technical reclamation of forests perceived as "unproductive" favors commodity species, both animals and trees. The resulting technically managed forest is a spoon-fed system, not a stable, integral, or "beautiful" ecosystem.

I concede that technical restoration is desirable in special cases where nature indeed does need a helping hand. Reclamation of strip-mine tailings and eradication of introduced exotics like the gypsy moth require active management techniques. However, the most serious human-caused threats to forest health, atmospheric pollution and global climate change, come from outside the forest and cannot be mitigated by technical treatment in the forest. It is imperative that all components of a forest ecosystem be saved if it is to respond naturally to these stresses.

Benign neglect has a proven track record for restoration of natural forest ecosystems, whereas more technical methods do not. The Southern Appalachian National Forests were established on lands so badly abused that the only management alternative was restoration. The magnitude of the job was so great and the acreage so vast that the only viable technique for restoration was benign neglect. Therefore, between the early decades of this century and the present, nature was allowed to heal herself. The only active management imposed on

hundreds of thousands of acres was fire suppression. The result today is obvious as we look across, or walk through, the forest landscape: large functioning mature ecosystems. Of course, Southern Appalachian forests can never be restored to their primeval condition because major species (e.g., American Chestnut, Passenger Pigeon, Eastern Cougar, and Red Wolf) have been extirpated. But nature alone has clearly returned most of these forests to an acceptable condition of integrity, stability, and beauty.

A FOCUS ON OAK DECLINE

Many tens of thousands of acres of oak woodlands in the Southern Appalachians are affected by the condition that pathologists term "oak decline." It is generally acknowledged that the current episode of oak decline was triggered by recurring drought years in the 1980s, perhaps abetted by regional atmospheric pollution. This phenomenon provides an opportunity to show the appropriateness of benign neglect for the restoration of these oak ecosystems. "Declining health" is a portrayal used by the Forest Service, but in reality oak decline is a naturally recurring response of Southern Appalachian oak ecosystems to natural weather cycles, possibly requisite for the perpetuation of this community type. The dead and dying mature trees of susceptible oak create diverse niches for other oak species and provide substrate for numerous food chains.

In Forest Service timber sales that involve oak decline, the current preferred silvicultural alternative is rehabilitation by clearcutting. The rationale is that young stands of sprout regeneration are created, and that tree health is improved in the regenerated stands simply by clearcutting the present declining stands. Environmental assessments always include, and always reject, a "no action" alternative. It is argued that, should the oak decline continue or intensify, species composition would change to favor species other than oak, and that age-class distributions would become imbalanced, with higher proportions in older age classes. My own observations contradict this assumption. I can find no research evidence to support that "no action" is unhealthy for the *ecosystem*. Drawing on the wisdom of restoration ecology, I suggest that a "no action" alternative, benign neglect, has advantages not yet considered by forest planners.

Oak Climax. Oak decline is common on sites where oaks are the edaphic (site controlled) "climax" species group. This means that oak species have naturally perpetuated themselves on these sites for an indefinite period in the past, and will continue to do so in the future. In the Southern Appalachian Mountains, oak climax has the following

characteristics: south- and west-facing aspects on upper slopes and ridges, with rocky, moderately shallow to very shallow soils over bedrock, at best marginal sites for commercial trees. Oak species composition is White Oak, Chestnut Oak, Black Oak, and Scarlet Oak. Associated tree species are Pignut Hickory, Mockernut Hickory, Red Maple, Black Gum, Black Cherry, Black Locust, Sassafras, White Pine, Pitch Pine, and Virginia Pine. Note that none of these species, excepting Red Maple, is shade tolerant, yet this forest type perpetuates itself as an edaphic climax association.

Oak climax regenerates itself because the canopy is sparse on these sites, providing sufficient light for seedlings of all species to survive and grow to advance reproduction and to mid-story levels. As canopy gaps occur, the more opportunistic species in the understory or mid-story, such as White Pine or Black Cherry, may temporarily fill overstory gaps, but the more persistent oaks and hickories eventually work their way up and dominate the overstory.

Oak Decline. Oak decline is currently recognized as a complex syndrome of long-term predisposing factors, such as poor sites and possibly chronic air pollution, combined with natural short-term inciting factors like drought and ice damage, that together weaken oak trees so they are vulnerable to attack by the Two-lined Chestnut Borer and the Armillaria Root Fungus. Oak decline in the Southern Appalachians has been a recurring concern to foresters since the turn of this century. Decline episodes have always been associated with drought cycles, when mortality has been greatest, but the symptoms have disappeared from oak decline stands with the return of normal weather. Natural events have resulted in the return, albeit gradually, of normal health to these ecosystems.

Black Oak and Scarlet Oak are most affected by oak decline; White Oak and Chestnut Oak least affected. The two most susceptible species are biologically the shortest-lived of all Eastern oak species, reaching senescence between 100 and 150 years on average sites, and earlier on poor sites. The average age of Black and Scarlet Oak trees on sites showing most severe oak decline is 80 to 100 years. White Oak and Chestnut Oak are the longest-lived of the Eastern oaks, reaching senescence between 250 and 300 years on average sites, and later on poor sites, commonly living up to 450 years on rock-dominated ridges.

Benefits of Benign Neglect. With the above as background information, I propose that forest planners give serious consideration to a "no action" management alternative for forests showing symptoms of oak decline. The advantages of benign neglect management are

as follows:

(1) **Economic.** Since oak decline stands are generally on sites of low productivity, their regeneration for timber products is of marginal or below-marginal economic value. In many cases, such stands do not support a commercial harvest at 80 years of age, and regeneration by clearcutting of the present stands is an economic loss. The regenerated stands, on inherently poor sites, will not show vigorous growth; they will develop slowly and at best replace themselves with marginal commercial timber. Benign neglect maintains the same marginal stand without an 80-year time lag, and without costly management activities.

(2) **Oak Continuity.** Since oak species in oak decline stands are climax and replace themselves indefinitely, the death of senescent Black and Scarlet Oaks speeds up the canopy replacement by younger individuals of the same species and especially of White and Chestnut Oaks. Old-growth climax oak stands are predominantly White Oak and Chestnut Oak, implying that the oak decline syndrome advances succession toward old-growth.

(3) **Mast Production.** Oak stands in decline contain many upper canopy oak trees of sufficient health to produce acorn crops, albeit not bumper crops. Benign neglect preserves the potential for the immediate recovery of better mast crops as the surviving canopy trees respond to ensuing, improved weather conditions, and to the growing space provided by trees in decline. The shift toward more White Oak and Chestnut Oak mast is desirable to advance the community toward climax, but some younger Black Oak and Scarlet Oak will eventually make their way into the upper canopy to produce acorns. Benign neglect therefore provides uninterrupted annual acorn crops, whereas clearcutting to regenerate a new stand creates at least a 40- to 60-year hiatus in mast production.

(4) **Old Growth.** Oak stands in decline contain trees in all stages of health, from mature healthy to senescent, standing dead, and in many cases fallen dead trees. Although such stands may not presently be classed as "old growth," the oak decline syndrome itself has created stands that are good candidates for the restoration of old growth. Some oak stands in decline are in fact old growth, although due to site restrictions tree size may not indicate such. Over time, benign neglect creates vital old-growth forests where oak decline today is presumed unhealthy.

(5) **Genetic Diversity.** Oak sprouts that follow clearcutting regenerate vegetatively the genetic composition of the previous stand. Benign neglect permits continued genetic evolution into the future through seedling development from current and future acorn

production. Such genetic diversity is essential for adaptation to expected (and unexpected) future environmental changes.

(6) **Species Diversity.** The biota in shortest supply on oak decline sites are those associated with the interior of mature oak forests. A full aggregate of these forest-interior biota are required for the continued evolution of edaphic ecosystems under the expected future stresses of air pollution and climate warming. Since air pollution is an added modern predisposing stress in the oak decline syndrome, and significant climate changes are anticipated over the next 100 years, maximum biological diversity must be maintained at all genetic, species, and community levels to insure the survival of these oak climax ecosystems.

CONCLUSION

There are no long-term studies that support clearcutting of oak decline stands as the preferred alternative to restore health and mast production. Clearcutting destroys the biological integrity and stability of oak climax ecosystems. The long-term, uneven-aged climax forest created by a "no action"—benign neglect—alternative permits natural processes to evolve genetically healthy ecosystems at a minimum of management time and costs. Therefore, it is not necessary to assume or to rationalize the necessity for management alternatives other than benign neglect to restore health to forests exhibiting symptoms of oak decline.

EPILOGUE

By reason of excessive Forest Service timber targets, benign neglect alternatives for restoration of forest health will be slow in gaining acceptance in Forest Plans. Agency bureaucrats publicly avow the ideology of Leopold's land ethic, while privately sanctioning ever greater commercial timber harvest. It is obvious that the present National Forest planning process is incompatible with a forest ethic. Top-down lip service for a "gentler forestry" will accomplish little at the ranger district level until we have top-down elimination of the timber target policy.

I know of a dozen examples in National Forest compartments undergoing planning for timber sales where a few mature oak trees were showing signs of die-back in an otherwise healthy forest, and this condition was used to prescribe clearcutting as a restoration treatment. The silviculturists admitted they were under pressure to meet high timber targets and used "restoration" as a pretense to cut more volume. The sales were all below-cost, 75% pulpwood and the remainder poor quality logs, with a great many large wildlife cavity trees felled and not utilized. To add the ultimate insult, some of the Forest Service prescriptions

rationalized that the sites were unfit for oak, and should be converted to pine plantations!

I have requested the forest planners on the Nantahala and Pisgah National forests in North Carolina, who are currently revising the Forest Plan, to include a benign neglect alternative for the restoration of damaged forests. Its application, however appealing, depends on district level rewards for ethical ecosystem management instead of getting out the cut.

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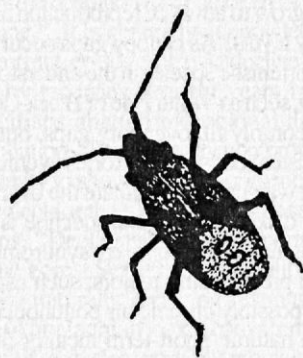
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*Science Editor's note: The same may not be the best option for some forest types, for example, Longleaf Pine or Ponderosa Pine stands where fire has been excluded. Thinning followed by prescribed fire may be necessary in such cases. Benign neglect has allowed Longleaf Pine forests to recover from turn of the century logging. But it will not allow recovery on sites where the ground cover has been destroyed by mechanical site preparation or where fire is excluded.—RN



Biodiversity

The Forest Crisis:

Failures of the Environmental Movement

by Carl Ross

This spring's forest legislative battle in Congress will be one of the most important in the history of the environmental movement. Proposals to protect the ancient forests are being considered by both the House and the Senate. This is the culmination of years of consensus building for a "limited" ancient forest protection package by the large national environmental groups. However, it is important to remember that the entire national ancient forest campaign was set in motion years ago by grassroots activists in the Pacific Northwest. They desired then, and still do, much greater protection for the ancient forests than is being offered in any of the ancient forest bills in Congress. There is great concern among those knowledgeable about the ancient forest ecosystems that if compromise legislation is passed, it will give away so much area of ancient forests for continued logging that the remnants will not survive as viable ecosystems.

ROOTS OF THE CURRENT CRISIS

The response by the timber industry and their politicians in Congress to the Ancient Forest protection bills has been to introduce a series of anti-environmental, pro-timber bills that would speed the clearcutting of all National Forests across America. But the menacing implications of these timber bills go even further. Buried in these bills are exemptions for the Forest Service and other federal agencies from complying with the environmental laws of the land, including the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). This would enshrine into law the disregard these agencies have long displayed for environmental protection.

Current laws, such as the National Forest Management Act (NFMA), have not protected our federal forests. This has led environmentalists to seek indirect legal strat-

egies to defend the forests. For example, a single species, the Spotted Owl, has been used as a shield to protect an entire ecosystem. Now that the industry has finally lost in court its right to destroy the Northwest Ancient Forests (because doing so could cause extinction for the owl), the timber interests want to rewrite the laws, including the ESA, to again allow unlimited access to public forestlands.

The battle shaping up in the 102nd Congress is the culmination of a conflict that has been escalating for years between private interests extracting "natural resources" from public lands with taxpayer subsidies, and the environmental protection movement. The outcome of this contest will affect the complexion of America's environmental future. It is a test of the will of the Congress and the American people that will show whether we have the wisdom to change before it is too late.

The first wave of the environmental movement, in the 1960s, achieved significant successes but failed to establish a new envi-

ronmentally sound economy. One major achievement was to reduce direct point source pollution by industry of water, ground and air through Clean Water and Clean Air Acts and other nationwide laws. Another was to protect small areas from human encroachment with "Wilderness" designation, through the Wilderness Act.

The first wave did protect America from the worst pollution of completely unregulated industry (such as the pervasive toxic nightmare of Eastern Europe). However, these laws did not stop the continuing assault on nature in general. In the past 25 years, natural ecosystems have been exploited on a greater scale than ever before.

The environmental movement has not yet succeeded in transforming our nation into an efficient recycling economy. Our nation still runs according to the old, outmoded industrial plan.

SACRIFICE OF NATIONAL FORESTS

The National Forests are the sacrificial lamb of the first wave of environmental pro-

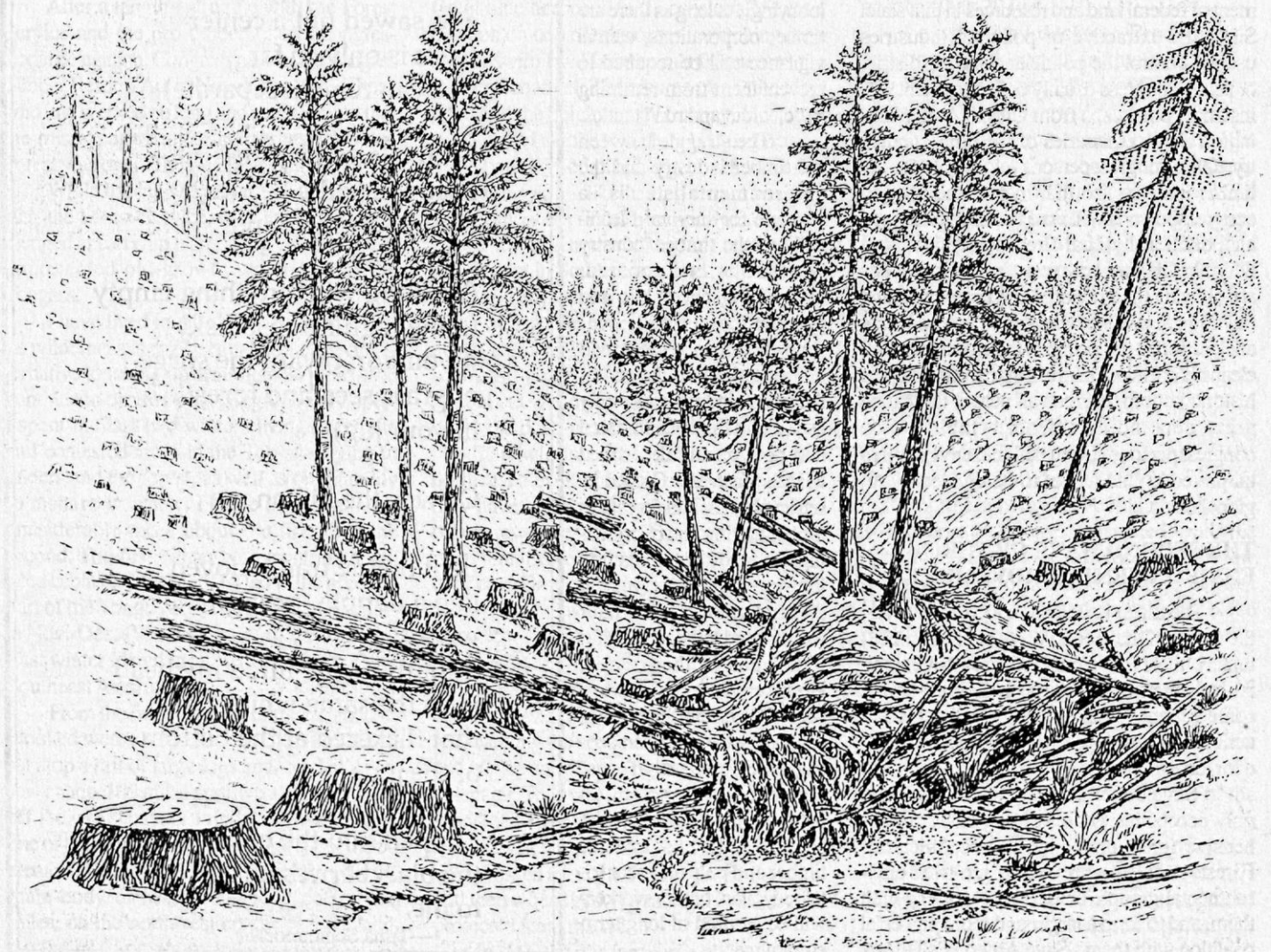
tection of the 1960s. Small Wilderness Areas were set aside, but in return, the large environmental groups agreed, explicitly or implicitly, not to contest the exploitation of the vast majority of our public lands. The National Forest Management Act of 1976 (NFMA) contained a veneer of environmentally sound language. However, the substance of NFMA was designed to hand over our public forests, including the virgin forests of the Northwest, to the timber industry. This agreement in Congress was made with the approval of many environmental groups. Ned Fritz, well-known forest protection crusader, was one of the few who foresaw the damage to be caused by NFMA, and lobbied vigorously in Washington against its shortcomings.

Much of the wood and pulp from the Pacific Northwest is shipped overseas. Our nation's timber supply has been flooded with lumber from the National Forests, making ecologically sound growing of timber on private lands less profitable. The current government subsidized destruction of our National

Forests is thus harmful to small woodlot owners, as well as to ecosystems.

The status quo cannot last. Either we will succeed in establishing a new environmentally sound economy, with protected and recovering natural ecosystems throughout our nation, or the timber industry will soon clearcut America's remaining native forests. Halfway measures, which "compromise" away more of the remaining scraps of nature, only prolong the agonizing destruction of our forests. Native plant and animal populations are crashing in nearly every forest in the U.S.. In order to remain healthy, forests must extend, unfragmented, over large areas. A forest ecosystem is the fish in the rivers flowing to the oceans, the migratory birds traveling between continents, the predators who roam over vast areas.

Forests are dying not only because of timber industry clearcutting. Forest lakes and streams are being polluted by acid rain. Thoughtless hunting and overfishing have skewed wildlife populations, with many animal species exterminated and selected "game"



species artificially stocked. Policies of total fire suppression have had the effect of increasing catastrophic fires. Suburban sprawl is chewing up forests. The forest issue cannot be separated from all the other environmental ills causing forest decline.

LIMITS ON THE POLITICAL POWER OF ENVIRONMENTAL GROUPS

Many environmental groups and leaders still believe in the incremental approach to forest protection. They believe they can get a little protected in Congress this year, a little next year, and so on. They do not tell their members that they gain these small-scale Wilderness designations in Congress at the expense of large-scale forest destruction elsewhere. The mainstream environmental groups have such a wide environmental agenda that they may trade losses in forest protection for favors from congressmen on other environmental legislation.

Most congresspersons defer to the wishes of another state's delegation in the management of federal land and resources in that state. Since the extractive or polluting industries usually control the politicians in their district or state, Congress usually defers to them. For instance, politicians from Oregon and Washington act as emissaries of the timber industry. Ohio congresspersons might vote for the timber interests, so that in turn the Oregon congresspersons will vote to allow continued air pollution by coal-fired power plants in Ohio. In this way, both sets of congresspersons are obeying their regional corporate polluters, thwarting the will of the American people for ancient forest protection in the Northwest, and clean air in Ohio. In an effort to overcome this historic pattern, citizens all across the nation are demanding from their own congresspersons strong national environmental protection, so as not to be divided by regional deals.

THE SECOND WAVE OF THE ENVIRONMENTAL MOVEMENT

The forest issue will be a crucible to test the mettle of the second wave of environmentalism, the New Conservation Movement. Already the siren song of partial protection of some ancient forests is luring many dedicated activists toward separate agreements for their own local forests.

Save America's Forests believes the only acceptable goal is strong and comprehensive forest protection. Save America's Forests does not seek to displace other environmental groups, but to share strategy with them, and to form a larger and more powerful coalition with them. Save America's Forests

welcomes all businesses, groups, and individuals who want to join this national effort for a new ecological America.

It is important to remember that "compromises" that promise to protect special forest areas but do not stop our overuse and waste of forests will inevitably force increased timber cut levels in other regions. Only a comprehensive change in forest policies—reducing cutting on public forests, lowering exports, increasing recycling, insuring only environmentally less harmful methods of cutting, and restoring natural forests—will save our forests.

Passage of forest protection legislation is only the beginning. Decades and centuries of forest replanting, replenishing and nurturing will be needed to repair the damage. The commitment and money for this forest rehabilitation will have to be squeezed out of Congress with intense environmental lobbying. As long as there are timber corporations, eternal vigilance will be required to prevent them from returning to "clearcut and run" tactics.

The struggle between the timber industry and the environmentalists is a struggle for survival. Ironically, if the timber industry wins, it is doomed; clearcutting our public and private forests will, over time, result in widespread deforestation and the end of the timber industry, as surely as it did in the once forested and now mostly desertified Middle East. As Greece irretrievably lost its forests to timber cutting and overgrazing, so too will our natural life systems perish. Ancient civilizations depleted their forests, and left dry and lifeless lands in their wake. However, if the second wave of environmentalists succeeds in establishing an ecologically-based forest economy, with selection cutting and a reduction of the amount of forests used for timber and pulp and near total recycling, timber workers will be assured of long term employment.

Congress will consider various forest protection bills this year. Concerned citizens are contacting Congress in person and by phone or letter. They are expressing support for nationwide ecosystem protection legislation.

Save America's Forests supports H.R. 1969, *The Forest Biodiversity and Clearcutting Prohibition Act*, as a first step toward healthy forests.

Carl Ross is Co-Director of Save America's Forests.

GATHERING

long vines of color slowly
splashed
up my fingers
as I crowded into the blackberries

(When your knife has broken
into the milk jug
and sawed out a center
there is only so far
you can remain separate)

I came into the forest
headed for the berries,
the hill on my mind

(Walking with anything empty
to the high ridge is risky
if you don't want the surge
of grass seed and forest
in your jug)

Or was the hill on me

Bent on the trail I moved
like a dapple through the
woods
until the ridge lifted my head
with the same white glare
that flickered at the bottom
of the jug.

I tipped into the blackberries;
the blackberries turned in
to me.

—Trina Schimmoeller

The Threatened Island World of Tokeen

by Russ Christensen

The Tongass National Forest of Southeast Alaska is home to the greatest concentration of brown bears and bald eagles in the world, myriads of salmon spawning streams, as well as spectacular wilderness. When President Teddy Roosevelt signed the bill establishing the Tongass National Forest in 1909 he thought the great temperate rain forest had been saved for future generations of Americans. He was wrong.

After a lengthy struggle with the Forest Service and the pro-timber Alaska congressional delegation, Congress passed the Tongass Timber Reform Act in November 1990. Those who had worked so long and hard thought that the mismanagement of our largest National Forest was over. They were wrong.

While the ink was drying on the Reform Act, the Forest Service, with little hesitation, plunged ahead with plans to log virtually every unprotected old-growth watershed in the Tongass.

I have lived in Alaska for a dozen years. Its wilderness is my spiritual home. As an alternative to taking up arms against those who continue to destroy our "geography of hope," I spent the last two winters living in remote and contested areas in the Tongass trying to understand the forest, as well as our inability to manage it wisely. I came away knowing considerably more about the first than the second. The first winter was spent in an isolated cabin on Chichagof Island in the northern part of the Tongass. (See "Kadashan journal" in Nov.-Dec. 1991 issue of *Alaska's Wildlife*.) Last winter I lived in a floathouse in southern Southeast Alaska.

From the front window of the floathouse, I looked west across a small inlet. The house sat atop a raft of large logs anchored in a narrow channel 85 miles northwest of Ketchikan, off the west coast of Prince of Wales Island, one of the more remote and sparsely populated areas of the Tongass. Across the inlet was the main body of Marble Island. Another two miles, on the northwest corner of the island, lay the moldering remains of old Tokeen —

at one time the largest marble quarrying operation in Alaska.

The float was a popular place. Mink swam from shore to prow around the logs and under the house in search of a toothsome morsel. Otters hunted for fish beneath the float, and climbed on top of the logs to eat their catch. Ducks paddled about, periodically dipping their faces into the water to look for fish. They would often dive under one side of the float and come up on the other in their search for a meal. A marbled murrelet, a sea bird that propels itself with its wings when underwater, spent a few weeks hanging about. Great blue herons would occasionally take a position on one of the corners, watching for a fish to swim by. Harbor seals frequented the inlet and channel. The air was clean, the view good and the neighbors interesting. One cold, starlit night I awoke to wolves howling nearby.

It was a good place to get back to a more basic lifestyle — like having to bail water or shovel snow out of the boat nearly every time I used it. Which was often, for it rains and snows a lot in Southeast Alaska, and the boat was the only way to get around. I brought water from a stream across the inlet. I traveled down to new Tokeen, seven miles to the southeast — the nearest settlement, population three. I cut wood and split it on shore, loaded it into the boat, unloaded in onto the float.

The winds usually came out of the northeast across Tokeen Bay, even though it may have blowing from a different direction only a few miles away. The surrounding arc of mountains to the north served as a giant deflector. On stormy days — when the world felt more alive, when the float strained against its cables — I would sit in front of the window and watch the wind gusting across the surface of the water in the lee of the house — fairy squalls. Farther out in the inlet, where the wind was blowing the crests off the waves, seagulls and eagles were enjoying the high speed, turbulent air. They weren't flying from one place to another. They simply came out of a sheltered area, played for a while — soaring, diving and being tossed about; the sheer joy of flying — and then when tired, retreated to a tree or rock protected from the wind.

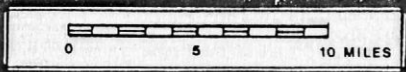
In 1909 the first ten blocks of marble were

shipped south from Tokeen. Most were sent to Tacoma, Washington where they were sawed, shaped, polished and worked into columns, tile molding, and balustrades for decorative use in buildings during the West Coast building boom. The operation was finally abandoned in the 1930s, because of the diminished demand for ornamental stone.

To get from my winter quarters near old Tokeen down to new Tokeen, the shortest and most direct route was through Brockman Pass, an L-shaped alleyway between the northern tip of Orr and Spanberg Islands. Rocky outcroppings pinch the pass, in two places, to no more than 20 feet.

I always saw ducks in Brockman — mergansers, goldeneyes and mallards. I often saw several of the small flock of Canada geese that wintered in the area. And in late March, a bear that had just come out of hibernation. The pass was sheltered from the wind, particularly one small cove on the Orr Island side, and had several areas where beach rye and sedges grew. It was still pristine — a half mile of tree-lined serenity. I always enjoyed going through it. Almost always.

There is a tidal range in the area of 16 feet during the winter, from -3 to +13 feet. The shallow northern end of Brockman Pass goes dry on a 3 foot tide, usually twice each day. I spent a rather anxious hour there one evening in early March on my way back to the floathouse. When I arrived the pass was dry at the northern narrows. I could not drag the 16 foot boat and motor. So I waited, while the light dwindled and the tide rose. I dug a few clams with one of the oars I always carried. With about three inches of water I was able to push and pull the boat over the barnacle covered rocks of the narrows. I then led the boat through the second shallow area and rowed through the third — in rapidly failing light. The sky was covered with dark clouds and the sun had officially set nearly an hour before. By the time I started the motor on the outside of the pass, I could no longer distinguish the dark green islands from the surrounding water. I was able to negotiate the three miles home only because I knew the route well and recognized the silhouettes of the islands against the darkening sky.



Wrangell

ZAREMBO ISLAND

Bushy Island
Shrubby Island

PRINCE OF WALES ISLAND

KOSCIUSKO ISLAND

TOKEEN BAY
TOKEEN
Marble Island

Somberg Island

New Tokean

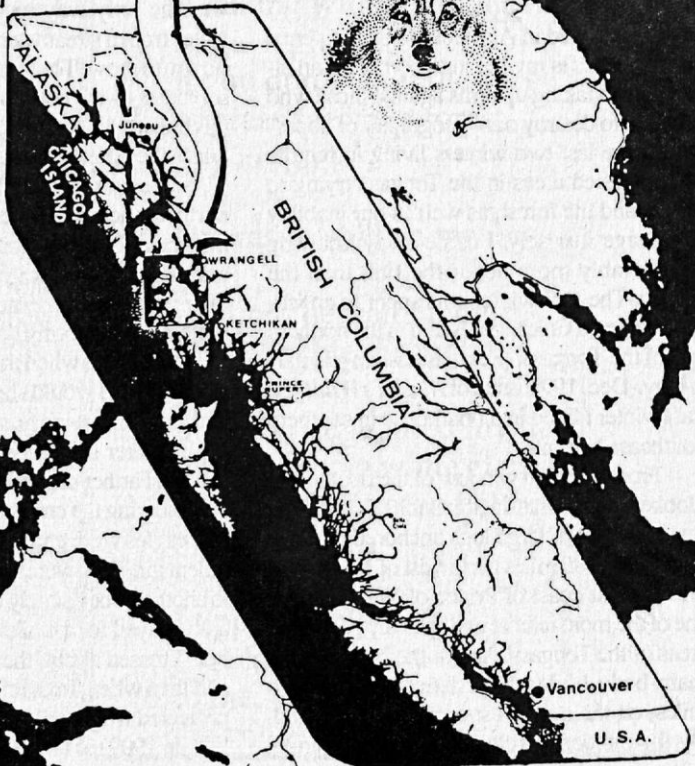
Tuxekan Island

Heceta Island

San Fernando Island



AREA SHOWN



U.S.A.

When the quarrying operation at old Tokeen was finally closed down, the manager and his family moved to a sheltered cove eight miles to the southeast, on El Capitan Island — the site of the present Tokeen. They brought three of the buildings, started a mink farm, and raised foxes on the small islands to the west. The post office and store continued, in its new location, to serve the local trappers, miners, loggers and fishermen. The place for mink and fox food grew into a fish buying and cold storage facility serving the boats that worked the west coast of Prince of Wales Island. However, after the son who ran the operation died, the rest of the family found it tough going. Within a couple of years the cold storage operation was put up for sale.

Sylvia Geraghty bought it. She has been there for 17 years and is the resident historian and conservation activist. Tokeen continues to serve as the community center and unofficial post office for the few scattered residents of the area.

One of the smaller islands northeast of El Capitan Island is tiny Graveyard Island. Apparently it served as the cemetery for the area in the early part of the century. I was able to locate the weathered remains of only six graves among the trees and underbrush. Less than twenty years ago, two dozen grave sites could be identified. Time and the elements have taken their toll. Most of those buried there are believed to have been from the Heenya group of Tlingit Indians who inhabited the area for several hundred years prior to the arrival of whites.

Logging began in the 1960s on many of the larger islands and continues on a small scale today. Recent clearcuts stand out as hillside scars, while older clearcuts appear as dark green patches of uniform-aged, densely-spaced, second growth hemlock and spruce, where the closed canopy shades out most other plant life — commercial forests that support few animals or birds. They are in contrast to the salt and pepper appearance of “old growth,” where Alaska and Western red cedars, as well as weathered snags and young trees, add to the biological diversity and productivity as wildlife habitat. The old-growth forest is home to healthy populations of deer, bear, wolves, beaver, otter, marten, mink, and bald eagles, as well as smaller birds that nest and seek winter shelter in the cavities of standing dead snags. Old growth, with its moss-draped giants and luxuriant understory, is the archetypal forest primeval.

Many of the smaller islands and beach fringes have so far been spared the axe and chainsaw. However, with the Forest Service's recent approval of large timber sales in the area, they and the remaining old growth on the

larger islands are threatened.

Sea Otter Sound, at the southern end of El Capitan Passage, is a considerable body of water that opens out onto the Gulf of Alaska. Near the center of the sound is a small island with what appears at first to be a white sand beach. On closer inspection, however, one finds that it is gray sand with white shell particles. Here one can find large Pacific mussels and abalone, which thrive in the heavy seas from the gulf. It is an idyllic spot — on a calm, clear, warm day. An unusual and delightful find in an area where most of the shores are steep, forbidding, jagged rock.

There are over 100 islands, large and small, named and unnamed, between that

sandy beach in Sea Otter Sound and Tokeen Bay, where I spent the winter. Two large islands dominate: Marble and Orr. However, it is the many small, forested islands and narrow channels that give the area its unique character and intimate feeling, that facilitate the inter-island travel of deer, bear, wolves, otter and mink. It is a world of water, wind, rock and wood; where one's activities are dictated more by the season and the weather than by calendars and clocks. It is a world threatened by the timber policies of the US Forest Service.



FOREST SERVICE SPEEDS TONGASS CLEARING

In 1990, Congress passed the Tongass Timber Reform Act (TTRA), which was intended to reform how the Forest Service does business on the Tongass National Forest. The Forest Service was directed to stop the practice of high-grading (taking only the most valuable, large old-growth stands), pay fair prices for the old growth they cut, and give increased emphasis to non-timber resources in their management of the Tongass. Instead, more timber was harvested from the Tongass in 1990 than any time in the last decade. Counting harvest on private lands, nearly 1 billion board feet were logged. High-grading continues unabated, and in fact will be accelerated in the next 20 years (the FS promises to correct this later). Under the revised Forest Plan, the Forest Service will build over 200 miles of road per year (compared to a 10 year average of 86 miles/year) into most of the remaining unroaded areas, and continue logging much as they have in the past. And the average US citizen will pay, and pay dearly. Not only are precious wild lands degraded by logging, but the US treasury is expected to lose over 20 million dollars per year, all in the name of jobs and “economic development.”

Places like Sea Otter Sound will suffer the worst from this misguided management. These places lie far from the beaten path, out of the watchful eye of urban environmentalists and their lawyers. Ironically, the same geology that produced the famous Tokeen marble also produced soils remarkably suited to growing large trees. Where some of the most magnificent groves of centuries-old Sitka spruce once stood, with bountiful deer, salmon, and wolves, the clearcutting of the past has left a legacy of sterile, lifeless land.

To explain why the Tongass Timber Reform Act is failing would require a book. In fact, one has been written. It's by Randall O'Toole, and titled *Reforming the Forest Service*. Basically the Forest Service's funding is tied to the amount of timber it cuts. It has incentives to cut timber to preserve its budget. In addition, many of the so-called line officers who make the big decisions are old-school foresters, who see an old-growth forest only as so many boards on the stump. The lands Congress locked up when it passed the TTRA are indeed protected. The other intended reforms, meant to deemphasize timber, haven't worked.

The failure of the TTRA shows that although you can legislate land protection, it's very difficult to legislate good resource management. To some extent, you just have to trust the land managers. In the case of the Tongass, that trust is badly misplaced.

The as yet unlogged islands of Southeast Alaska should be forever protected. Please write the Regional Forester for Alaska at POB 21628, Juneau, AK 99802, and let him know you want *your* forestland left wild.

Fragmentation Plan

editor's note: In Wild Earth volume 1, #3, RF Mueller of Virginians for Wilderness presented a proposal for protection and expansion of wilderness in Virginia's George Washington National Forest. The US Forest Service has now followed with its own counter-proposal.

by Ernie Reed, Virginians for Wilderness

On New Year's Eve, Wayne Kelley, Forest Supervisor of the George Washington National Forest, released the *Draft 10-Year Land and Resource Management Plan*. This document and the accompanying Environmental Impact Statement are the work of over 11 years and millions of dollars. The result is a plan for continued fragmentation of habitat and virtual elimination of citizen input and environmental review of Forest Service decisions and activities.

The GWNF has effectively had no forest plan to guide its operations for the last decade. In September 1986, Regional Forester John Alcock released the original version of the plan. The Natural Resources Defense Council called the document, "the worst from an environmental standpoint" of the 123 forest plans they reviewed nation-wide. As a result of 18 different appeals, and after three years of attempted revision, Alcock threw in the towel and on 6 September 1989, instructed that the plan be totally rewritten. Ron Lindenboom, a planning specialist, was enlisted as head of the "ID team"; his task was, and is, to produce a plan that will stand up against the 1986 appeals and that will allow the GW to maintain its "multiple-use" direction.

Virginians for Wilderness led a loud outcry that the "integrity" of the forest be preserved until a forest plan was in place. The result was that, in August of 1990, Supervisor Wayne Kelley issued "Interim Management Guidelines" significantly more restrictive of destructive activities.

Yet, instead of continuing the direction forged under interim management, the current draft takes ecologically destructive practices of the timber program and makes them the focus of wildlife management. Mike Jones, Virginians for Wilderness researcher, calls the

plan "criminal behavior masquerading as forest management."

The most obvious problem with the plan is its refusal to recognize the basic principles of ecology. "The draft plan is ecologically illiterate," says Rick Wellbeloved-Stone, President of the Virginia Association of Environmental Educators, pointing out that many scientific terms are misapplied and biased toward industry. "The EIS is a misrepresentation of forest ecology," says Wellbeloved-Stone. "It contains definitions I would not accept from my 9th graders."

LOGGING

The draft plan appears to decrease the timber program. It lists 260,000 acres as "suitable for timber production" and limits production there to 27 million board feet. In reality the plan puts no ceiling on logging. Huge increases in logging in wildlife areas would more than double both of these figures. Salvage sales in areas showing gypsy moth defoliation will increase. These are likewise not part of the timber program accounting. Neither are logging activities in areas of "potential" defoliation, making many areas prime candidates for timber sales based only on the presence of the gypsy moth. Salvage sales are allowable virtually anywhere there are roads.

The draft plan, on the surface, contains a significant reduction in clearcutting. In reality, the use of clearcuts up to 50 acres in size as a tool of "wildlife habitat improvement" will increase dramatically. In addition, a careful reading of the guidelines for clearcutting and "shelterwood cutting" shows that the ecological effects will be the same under either method. The single trees left behind as "shelterwood" are prime candidates for lightning strikes or blow downs once the surrounding trees are eliminated.

No areas are specified for watershed protection. (Watershed protection was the initial purpose for the creation of the GWNF.) Logging is allowed alongside rivers and streams. Over 23,000 tons of sediment will enter watersheds yearly, according to the EIS.

ROADS

The George Washington National Forest contains over 4000 miles of roads. The extent of their additional "uninventoried" road system is anyone's guess. Under the draft plan, 200 miles of new roads will be built in the next 10 years. No road closures are proposed for restoration of fragmented ecosystems. Road reconstruction is allowed in "roadless areas" for wildlife purposes, which could remove these forest interior areas from future wilderness consideration. Road densities may increase four-fold in bear habitat.

Of the 27 inventoried roadless areas on the forest, only three, Saint Mary's Addition, The Priest, and Three Ridges, are recommended for Wilderness designation. The 12,000 acres recommended comprise less than 1% of the GWNF and, if congressionally designated, would raise the amount of Wilderness to 3% of the Forest, far below the national average of 17% per National Forest.

OFF ROAD VEHICLES

The plan would open 177 miles of Forest Service roads for unlicensed ATVs. Some of these roads dissect sensitive biological areas. In addition to opening 17,000 other acres for ATV use, the plan promises that "additional opportunities will be explored" for ATV use and that "peer pressure" will be the main way of limiting abuse.

MINERAL EXTRACTION

Mineral extraction is allowed in all areas of the forest except the 3% designated as Wilderness or for wilderness study. Many areas are under existing claims that take precedence over Wilderness designation.

CITIZEN INPUT AND ENVIRONMENTAL REVIEW

When the draft plan is placed alongside the Forest Service's proposed changes to the National Environmental Policy Act (Federal Register, 29 April 1991), the result is that almost all Forest Service activities would be

listed as "categorical exclusions" from both citizen input and environmental review under NEPA. All projects yielding less than a million board feet of timber or of less than 1000 acres in scope could be carried on without public knowledge or environmental restrictions or documentation.

ECOLOGY AND RESTORATION

The plan has no allocation for restoration of damaged ecosystems. It allows no migration corridors for free movement of species from one area of the forest to others. Its "interpretive programs" which are meant to educate visitors have no mention of ecosystem restoration, forest ecology, conservation biology or island biogeography. The programs misrepresent the ecology of gypsy moth infestation, describing the moth's presence as "epidemic."

The GWNF is a forest trying desperately to right itself. Only tiny, isolated areas remain that have not been cleared three or four times. The stresses on the ecosystem are immense: acid rain, declining water quality, extremely high levels of air pollution, continued fragmentation of habitat. Oak decline, dogwood blight and dying foliage on old hemlocks and

other trees are the red flags that signal a need to shift away from "management" and back to natural biological processes. Preservation and restoration of our forests should be paramount in any preferred alternative for the George Washington National Forest.

ALTERNATIVE 3

Virginians for Wilderness has proposed a draft plan known as "Alternative 3," based upon conservation biology and applied restoration ecology. It would eliminate all timbering and road-building. It would place more than 500,000 acres, just over half of the Forest, under Wilderness management to protect forest interior habitat. An additional 150,000 acres of "migration corridors" would connect the Wilderness cores. Extensive road closures and reintroduction of Gray Wolves, Cougars and other extirpated species are an important focus for the plan. The entire forest would be off limits for ATV/ORV recreation.

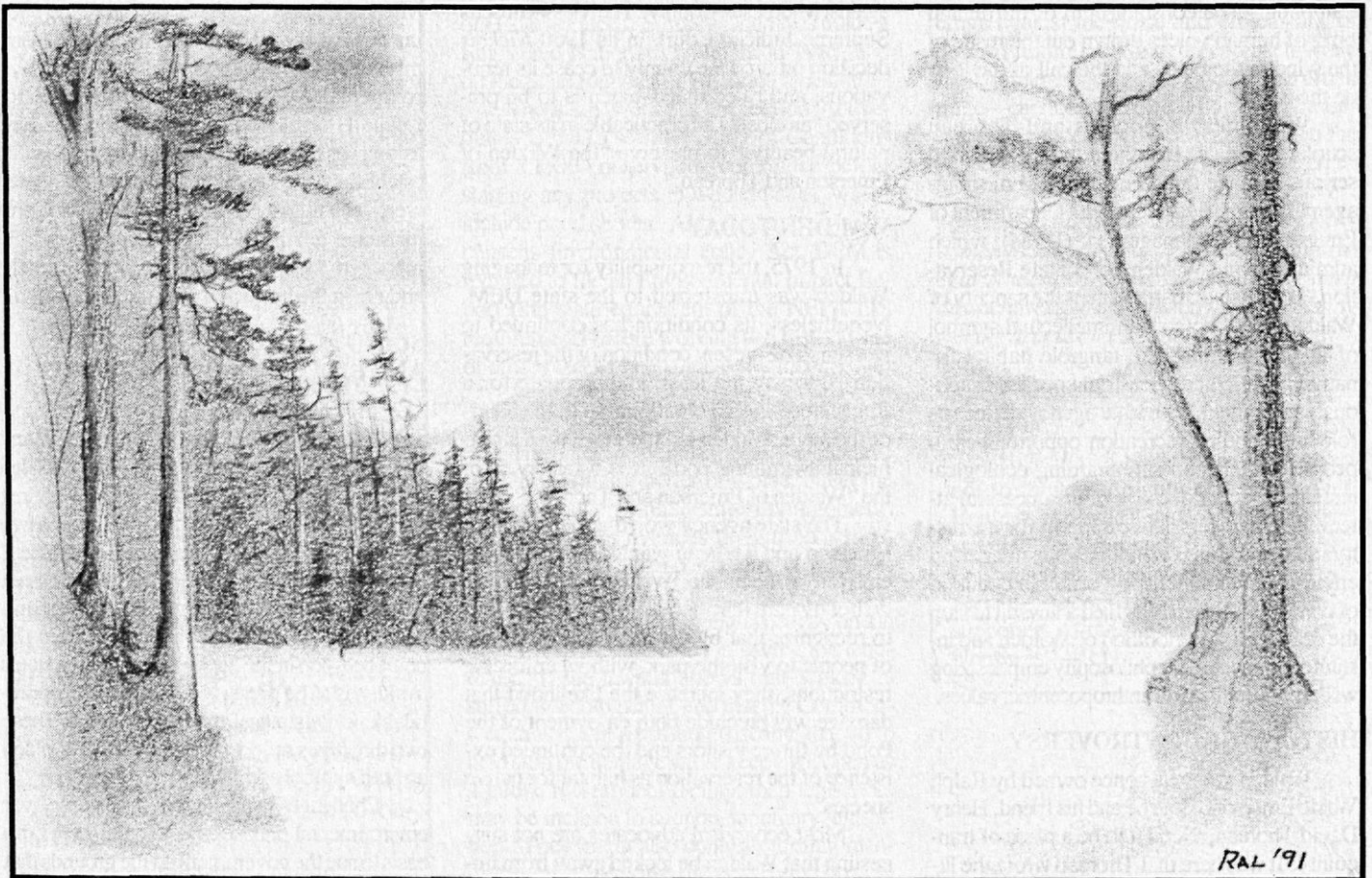
The EIS notes that this alternative provides the highest levels of protection for biological diversity, air quality, water quality, soil retention, and has the lowest risk of fire. It has the smallest budget and eliminates all low-cost timber sales. It also provides the

widest spectrum of low-impact recreational opportunities for the 57 million people living within a one-day drive of the forest.

A major argument in favor of "Alternative 3" is economic. It would have no effect on current payments to counties "in lieu of taxes." Only 7% of the timber harvest statewide comes off National Forests. The EIS states that private lands have sufficient supply to absorb this tiny increase in demand with no negative economic effects. In fact elimination of logging in the GWNF would likely stimulate the private sector and increase both the value of timber and the value of private forested lands.

ACTION ALERT

The George Washington National Forest is the closest forest to the nation's capital, making it a focus of intense debate. The public comment period for the draft plan ends in April 1992. Wilderness proponents are sending comments supporting "Alternative 3" to: George Kelley, Forest Supervisor, Forest Plan Revision Team, POB 233, Harrisonburg, VA 22801; and copies to senators and representatives with a cover letter expressing concern about current practices in the GWNF.



Walden: *Symbol of Wilderness!* *Sanctuary for Biodiversity?*

Biodiversity

by Cindy Hill and Kathleen Degnan

Walden Pond, cradle of the environmental philosophies of Emerson and Thoreau, is located in Concord, Massachusetts, about twenty miles west of Boston. No longer a serene refuge, its surrounding woodlands and freshwater marshes are scarred with roads, parking lots, eroded shores and artificial bathing beaches.

Walden Pond is a sixty-four acre freshwater "table pond" with no inlet or outlet. Sand from the man-made beach, eroded soil from the decaying shoreline trails, and pollutants from the multitude of swimmers enter the pond and have no way out. In Thoreau's day the pond was surrounded by dense woods and accessible only via the railroad tracks from Boston and a footpath from Concord center. Today it is ringed by a thin "second growth forest," devoid of undergrowth from constant trampling. The constant hum of traffic and buzz of human voices drown out the rustle of the wind in the pines and the call of the loon on the water.

Wilderness advocates and Thoreau scholars alike see that the pond has endured serious damage due to neglect and mismanagement by the Massachusetts Department of Environmental Management (DEM), which administers the Walden Pond State Reservation. Under state management the sanctity of Walden Pond, both as an intellectual symbol of wilderness and as a tangible habitat for native aquatic and terrestrial species, is seriously threatened. The state agency defines its role as providing recreation opportunities to people, rather than safeguarding ecological resources. After decades of unsuccessful attempts to gain legislative support for the restoration of Walden Pond as a sanctuary and environmental philosophy center, a coalition of concerned citizens has filed a lawsuit to stop the ecological deterioration of Walden and institute a management philosophy emphasizing wilderness, rather than anthropocentric, values.

HISTORY OF CONTROVERSY

Walden Pond was once owned by Ralph Waldo Emerson. Both he and his friend, Henry David Thoreau, found it to be a place of tranquility. It was here that Thoreau wrote the literary classic *Walden*.

In 1922, the pond and surrounding woodlands were donated to the Commonwealth of Massachusetts by the Emerson, Heywood, and Forbes families. The express purpose of the gift deed was "to aid the Commonwealth in preserving the Walden of Emerson and Thoreau, its shores and nearby woodlands for the public who wish to enjoy the pond, the woods and nature including bathing, boating, fishing and picnicking." (The Legislative Acts of 1922, Ch. 499) This deed placed management control in the hands of Middlesex County.

Ever since then, the land has been the focal point of much controversy and litigation. In 1957, Middlesex County was responsible for chopping down hundreds of trees along the northeast shore of the pond. The county was also responsible for dumping tons of soil into the water to enlarge the so-called Red Cross Beach at the eastern end of the pond. In response the Thoreau Society brought suit against Middlesex County. The Massachusetts Supreme Judicial Court, in its 1960 *Nickols* decision ordered the county to cease its renovations, and ruled that Walden is to be preserved "as closely as practicable in its state of natural beauty," to preserve "the Walden of Emerson and Thoreau."

WALDEN TODAY

In 1975, the responsibility for managing Walden was transferred to the state DEM. Nonetheless, its condition has continued to worsen. The present condition of the reservation is, to say the least, inappropriate for a Registered National Landmark. In the hands of the state, Walden is little more than a municipal swimming pool. It is a far cry from the "Walden of Emerson and Thoreau."

The state agency would argue that both Emerson and Thoreau wanted Walden to be enjoyed by the public. Walden restorationists do not dispute this. However, the DEM fails to recognize that by allowing large numbers of people to visit the park, without enforcing restrictions, they increase the likelihood that damage will preclude both enjoyment of the Pond by future visitors and the continued existence of the reservation as habitat for native species.

Most ecological advocates are not suggesting that Walden be locked away from human access, but rather that the degree of usage

be restricted. An alternative put forth by Dr. Edmund Schofield, ecologist and President of the Thoreau Society, is to decrease the concentration of visitors. He suggests that "by expanding the reservation into the remaining 2385 acres of Walden Woods, the current limit on the number of visitors could be increased because the physical impact of the visitors would be spread out rather than focused on the vulnerable, narrow band of shoreline around Walden Pond." Dr. Schofield proposes that "by expanding and diversifying the sanctuary's program, Walden would be open to a vast and currently untapped constituency."

Another alternative, promoted by the citizens' organization Walden Forever Wild, is to seek sanctuary status for the reservation lands. This would limit the number of visitors and virtually eliminate developed recreation at the site. WFW has filed sanctuary bills with the state legislature in several legislative sessions and in 1986, petitioned then-Governor Michael Dukakis. These efforts have been unsuccessful. WFW has written DEM Commissioner Peter Webber, Secretary of Environmental Affairs John DeVillars, Senator Lucile Hicks, and Secretary Susan Tierney, asking for support of legislation to get Walden established as a sanctuary. All of the responses were less than favorable. The DEM Commissioner felt that Walden is being adequately managed and that legislation is "silly, costly, and not in the best interest of the reservation."

SUING FOR HUMAN SERENITY AND BIOLOGICAL SANCTUARY

In light of the responses to the attempts at legislative and political solutions, WFW and others concerned with the condition of Walden were left little choice but to bring suit against the DEM. The litigation is based primarily on two legal directives for the management of Walden.

The first directive is that of the gift deed to maintain the "Walden of Emerson and Thoreau." The second directive is from the court decision in the *Nickols* case, which states Walden is to be preserved "as closely as practicable in its state of natural beauty." These two directives reflect the dual value of Walden as both symbol and habitat.

Challenges arise in attempting to sue over environmental philosophy. Usually there is no basis to sue the government on the grounds that you disagree with its approach. Massachusetts

residents are lucky to have an Environmental Citizens' Suit Statute which allows ten residents to sue the state to enjoin and repair ecological damage caused by violation of a state law meant to protect the environment. Since the law creating the Walden Pond State Reservation explicitly incorporates the lan-

Legal Strategies for Restoration of Public Lands

If your state doesn't have an environmental citizen's suit law, be creative in finding grounds to bring suit. Try a taxpayer's suit provision, a mandamus proceeding, or some other statute that gives you a "hook" to get into court.

Check the history of the title to the property, looking for deed restrictions, easements, or other limits on the use of the land. This is great practice for law students.

Research newspaper accounts, journals, and other historical records for any information indicating the last private owner's intentions in giving or selling the land to the public. The owner's intentions may create a trust which can be enforced in court. English and history majors in your group should be good at this.

See if any sites on the land are listed on state or federal historic registers or are eligible for listing. (Look for cemeteries, battlegrounds, cellar holes.) While historic resource protections are more cultural than ecological, they often require public environmental review of detrimental projects.

Check with planning offices to determine whether the land is subject to any state protection for wetlands, floodplains, drinking water, endangered species habitat, or other special areas. Also see if there are any state-wide requirements to comply with zoning or other land use restrictions.

-Cindy Hill

guage of the gift deeds, and since the *Nickols* decision was a judicial interpretation of that same law, suit can be brought over the meaning and practical applications of the term "the Walden of Thoreau and Emerson."

Once in court, explaining what is meant by "the Walden of Thoreau and Emerson" will take some doing. Expert testimony from scholars, philosophers, and historians will be a likely feature of the litigation.

A trial over what constitutes "as natural a state as practicable" will be a unique opportunity to publicize the differences between land that does not feature pavement and true "natural" conditions that support native biological diversity. Convincing an urban judge that the wooded park-like lands of Walden are not "natural" will once again require considerable expert testimony. Soil scientists, forest ecologists, aquatic ecologists, botanists, and hydrologists are likely to be called in to testify on how the present condition of Walden differs from its natural state. The traditional environmental policy class debate—man a part of nature or apart from nature—is likely to become the focus of legal argument.

Other statutory violations are also at issue. For example, the Code of Massachusetts Regulations requires the DEM to protect properties that are listed on the State Register of Historic Places. Since Walden was made a Registered National Landmark in 1965, it is on the State Register of Historic Places.

The state Wetlands Protection Act requires DEM to seek an Order of Conditions from a local conservation committee before starting any projects in wetland sites, which include pond shores. Also, under the Massachusetts Environmental Policy Act, DEM is required to file an Environmental Impact Report (the state equivalent of the NEPA EIS requirement) before working at a historic site or other places of ecological significance.

THE FUTURE OF WALDEN

The outcome of the citizens' suit against the DEM will, for better or worse, direct the fate of Walden under state management. However, other avenues toward ecological restoration of Walden continue to be pursued. Even pending litigation, having Walden established as a sanctuary weighs heavily on the minds of those interested in saving the landmark. If the lawsuit shows that Walden is suffering ecologically, and that the Commonwealth is not in a position (fiscally, that is) to help stop the damage while keeping it open as a public recreational facility, then legislators may be inclined to support sanctuary legislation. They might also consider turning management responsibility over to a restoration-minded citizens' group. Private

management of state facilities is not unprecedented in Massachusetts.

Expansion of the conservation lands around Walden, either through additions to the reservation or through private land trust acquisitions, would enhance Walden's role as a home to wild things—human ideas and living creatures alike. Local organizations like the Thoreau Country Conservation Alliance, as well as more notable efforts like singer Don Henley's * Walden Woods Project, are making headway against the pressure of commercial, industrial and residential development adjacent to the state lands. Litigation over the management of the present state Reservation aims to enhance these efforts by creating a stable management philosophy for the long-term sanctity of Walden.

RETROSPECTIVE

In the litigation over the management of Walden can be found the spectrum of issues confronting wilderness advocates. What level of human presence, if any, is acceptable? What constitutes a "natural state?" How are public agencies to balance the conflicting needs of human and other species, especially given limited space constraints?

The spirit of Walden lives in all our open places, and in all places where humans seek refuge against the noise and pretensions of Western culture. If Walden Pond itself—one small, rather nondescript pond on the urban fringe—cannot be protected against the onslaught of modern ecological abuse, then the spirit of Walden is indeed in grave danger.

Cindy Hill teaches and practices environmental law. Kathleen Degnan is a paralegal student at Elms College in western Massachusetts. Cindy thanks her for assisting with the article and the litigation.

*Wild Earth readers are cautioned not to think too highly of singer Don Henley's ecological wisdom. Henley is reportedly a supporter of Oregon Congressman Les Aucoin's run for the US Senate. Aucoin is one of the biggest supporters of the timber industry in the Northwest.—R.N.



Red Wolf Red Alert

(from *Red Mountain, Deep in the Heart of the Red-Neck Riviera*)

by Ned Mudd

It finally happened. Despite extraordinary precautions, including fences, moats and more fences, one of the nation's most endangered species made a remarkable escape.

The headlines reported it thus: "Call of the wild proves too powerful for the red wolf." Indeed. What the *Birmingham News* failed to mention is that the three-year-old female *Canis rufus* had always appeared to be, well, paranoid. This creature hated captivity, the silly stares of hundreds of red-neck hominids as they stood above her every day, tossing pink cotton candy down into her tiny enclosure.

I watched her many times, dreaming, scheming—how to get a van into the Birmingham Zoo's perimeter fence after midnight, past the walkie-talkies, up to the wire holding cage, getting her into the van without harm (to me or her), off toward the big woods of the Smoky Mountains where others of her kind now run in semi-freedom.

Her eyes sought escape from intrusion. Her gait was shaky, erratic. She darted into and out of the fake cave which barely offered her a moment of privacy before some dim witted homo erectus asphaltus would exclaim: "Look, Ma—look there at that dog! Ain't it scraggly?"

Then, on the night of 24 January 1992, she made her move...Here's what is believed to have occurred:

After darkness settled over the zoo, she became restless. As on so many other nights, she began pacing, barely able to maneuver in the cell. Never totally comfortable with being a prisoner of the AAZPA's (American Association of Zoological Parks and Aquariums) "captive breeding program," she found pleasure in the nocturnal pacing, a dim analog of her wild genetic urges.

Suddenly, on one of her many passes by the mesh door, she noticed something unusual, a slight differentiation from the norm: The door was ajar!

Nudging the steel door slowly open with her nose, at first she felt fear. This was off the script, unrelated to the hundreds of days before. Looking back, she spied the bowl of chow in its usual place. She went over, sniffed it. Grain. Enriched with eight essential vitamins. Same as a dozen yesterdays.

Moving back to the door, she listened to the

sounds of the city. Her ears bristled with the echoes of the Ice Age, when legions of her ancestors roamed these parts, free from fear—children of the Wild. She experienced a moment of terror unknown to her predecessors. Then she moved out into the darkness, toward the safety of the hundred acre park surrounding the zoo.

Something deep in her consciousness slowly awakened. She became aware of what she must do. They would follow, searching. Like predators. And she would entertain them.

Heading into a stand of giant loblolly pines, she paused to sniff the air. The scent of pine needles, earth, holly, and the rough bark of dogwoods. Recognition. She approached one of the numerous dogwoods, leaving her mark, doing the same on several other trees as a message to others who might come behind. She scratched a wide berth in the deep, rich soil, rolling in the dirt, smearing it all over her shiny red coat. It felt soothing, reassuring.

She must move. They would be this way at first light. More urine, now a dropping of scat. Move...

By dawn, she tracked and took a squirrel, her first kill. It had been easy; the rodent had been lazy, too well fed. The meat had exhilarated her; the blood smeared on her chin.

She crossed the park, staying in the shadows, following the old trails left by decades of small animals. Often she stopped, sniffing, listening. A lion roared, performing its usual request for breakfast. She had heard this sound many times. To the west, the sounds of the city rumbled. Move...



According to news reports, zoo keepers discovered her absence in the morning during normal rounds. The door to her cage was open. At a meeting of zoo officials, it was decided that no word of the escape would be forthcoming; no need to "panic" the people they said. Indeed.

Biodiversity

Red Wolf



FORMER RANGE

Determining the problem to be "a purely internal matter," zoo staff began the search. Several live traps were stationed around the park. The theory was that the small wolf would remain near zoo grounds. A freeway ran directly behind the zoo. Fingers crossed.

Four days later the public was informed. It was an embarrassing moment for a zoo on the skids. After years of shoddy production and underfunding, the zoo was about to lose accreditation by the AAZPA. So too would it lose its "species survival plan" funding and attendant prestige. The media grabbed the story, placing it front page. This was the first time in 60 years that a red wolf had roamed in the Alabama woods.

She remained in the park that first day and night, orienting herself to her newfound freedom. Moving constantly, stopping only to leave her urine in a complex grid of territorial acquisition, she felt hunger and waited for another opportunity to kill.

Having taken a chipmunk as it emerged from a small burrow beneath a log, she decided to leave the area. The keepers were searching. Carrying the tiny prey in her teeth, she moved.

As darkness approached on the third night of freedom, she crossed out of the park boundary, into the open spaces of the city. Hidden by shrubs and shadows, she moved across a road, past Shades Valley High School, toward a suburban area known as Hollywood. Many smells met her as she traveled, some reminding her of her own kind—canine.

On the fourth day after the escape, zoo officials still searched the park, regularly checking their walk-in traps, to no avail. One employee noticed the wolf's wallow, pointing it out to his companions. They saw where she had found pleasure in the earth. Another keeper located a pile of her scat; it contained the grey hairs of a squirrel. She had eaten. The search continued.

A phone call went out to Christopher Lucash, a red wolf biologist for the United States Fish and Wildlife Service (FWS). He was informed that one of FWS's wolves had escaped and was eluding

Death of the Dawn?

by Rick Bonney

I can remember, as few as eight years past, being roused from bed by the dawn chorus. It happened each May, during spring migration; it usually started around 4:30 a.m., just as first light cracked the horizon. Usually the choir opened with a robin or two, nothing unusual as birds go, but before long they'd be joined by other thrushes, such as hermit or wood, then some warblers, perhaps American redstarts or ovenbirds. Finally, as an assortment of vireos, tanagers, and flycatchers added their voices to the concert, sleep without ear-plugs would become impossible.

But no more. The last couple of springs I've been lucky to hear a lone robin joined by one or two vireos and a catbird. It's been so quiet I've had to set my alarm.

Now, this morning hush might not alarm me if I lived in an area where forests were fast-falling, like the New Jersey suburbs where I grew up. But years ago I relocated to west-central New York, to a spot where the woodlands are still thick and my closest neighbor is a long-distance call.

And I might not worry so much if finding songbirds remained easy during my travels. But it hasn't. Consider the World Series of Birding in New Jersey, a crazy event in which teams of birders compete to find the greatest number of bird species in 24 hours. Eight years ago, we maniacal contestants designed our winding bird-finding routes to encounter "migrant traps," places where migrating songbirds congregate to feed and rest on their northward journeys. But in the last few years, migrants have become so scarce that we now bypass the once-legendary hotspots.

The evidence for bird population declines is more than anecdotal. Dozens of recent bird surveys, conducted by universities, conservation groups, and government agencies, have shown the same result: populations of neotropical migratory birds are dropping.

Evidence for the declines first came to light in several studies conducted near Washington, D.C. The best known is the case of Rock Creek Park, where censuses dating back

capture. FWS arranged to send someone to help find her.

From the corner of her eye, she sensed movement. Something was there, in the darkness. She moved across a large area of grass, sniffing frantically.

All her senses became alert. It was moving with her, parallel. Suddenly, turning toward a small opening in a fence, she caught sight of the thing as it lunged. She felt the animal tearing into her side. Blood. Deep and biting pain.

She kicked wildly, hoping to back it off, gain some distance. It came again, biting once more, lacerating her flesh.

Once the news hit, the phone calls began. She was spotted on Mountain Brook Parkway, Lakeshore Drive, Raleigh Avenue. Whether any of these sightings were accurate is anyone's guess. She was still free.

Fish and Wildlife Service was duly concerned. This wolf had been bred for a purpose: to be returned to the Wild. Not the wilds of an urban jungle.

Kicking at her assailant, she raced through the gate, into another grassy space, hedges. The attack caused her endocrine system to respond in profusion. Adrenalin surged through her. She ran with renewed strength as her attacker slipped behind her. She felt the blood on her side, the dull pain move into her ribs.

No one knows with any certainty what transpired during the next 5 days. Somehow, she found nourishment, sustenance. Somehow she avoided being seen for 9 days and nights total. For that short burst of time, she felt the exhilaration of freedom, the chaos, the danger and fear.

On February 2, zoo officials were alerted that an animal fitting the description of the escaped wolf had been seen. Accompanied by an expert from the Fish and Wildlife Service, they found her behind a K-Mart: wounded, nervous, but otherwise in good condition. She was 5 miles from the zoo.

On February 3, FWS agents announced an official investigation regarding the escape of one of their red wolves from the Birmingham Zoo. Said Lucash: "The unfortunate part is trying to hide it—especially from us—and then trying to hide it from the public."

According to informed sources, the wolf "sustained a fairly large chest wound, possibly from being attacked by dogs or being struck by a car, in addition to cuts on her legs." Zoo officials predicted she would be confined to the zoo's infirmary for two weeks.

Soon she will be back on display, her pacing resumed. I will return to see her. To stare like the others. I will resume the dream, the scheme involving the van. I will try and see her wounds.

Ned Mudd is an attorney who works with the Biodiversity Legal Foundation.

to 1947 revealed that by 1978, six bird species had disappeared, and populations of several other species had declined by more than 50 percent (Robbins 1979). Similar long-term trends were recorded in sites in Georgia, New Jersey, Connecticut, Wisconsin, and New York (Finch 1991).

Additional evidence for population declines comes from the Breeding Bird Survey (BBS), a volunteer bird-counting effort conducted by about 2000 birders each June. The BBS is sponsored by the U.S. Fish and Wildlife Service and the Canadian Wildlife Service; participants are handpicked by regional or national coordinators and must be familiar with all bird songs in their area.

In eastern North America, where the best information is available, the BBS suggests that populations of 75 percent of neotropical migratory birds declined between 1978 and 1987. For some species, declines have been precipitous. Bay-breasted warblers decreased nearly 16 percent per year, Tennessee warblers, 12 percent per year. Yet both species had increased in abundance during the decade before the decline began (Robbins et al. 1989).

Still further evidence for population declines comes from the work of Sidney Gauthreaux, an ornithologist who studies bird migration with radar. His research suggests that the volume of birds migrating over the Gulf of Mexico in spring has decreased by half since the mid 1960s (Gauthreaux in press).

It's important to realize that not all studies of bird populations show that neotropical migrants are declining, a fact to which we shall return later. For now, let's remember the words of U.S. Forest Service biologist Deborah Finch: "When faced with conflicting evidence, most researchers would agree that developing a conservation program based on the assumption that birds have really declined is a safer and wiser strategy than ignoring what could turn out to be a disastrous problem. This viewpoint is advocated because of the obstacles and errors involved in detecting reductions in global populations" (Finch 1991).

But before we can discuss conservation, we need to understand why the declines are occurring, and what we mean by the term

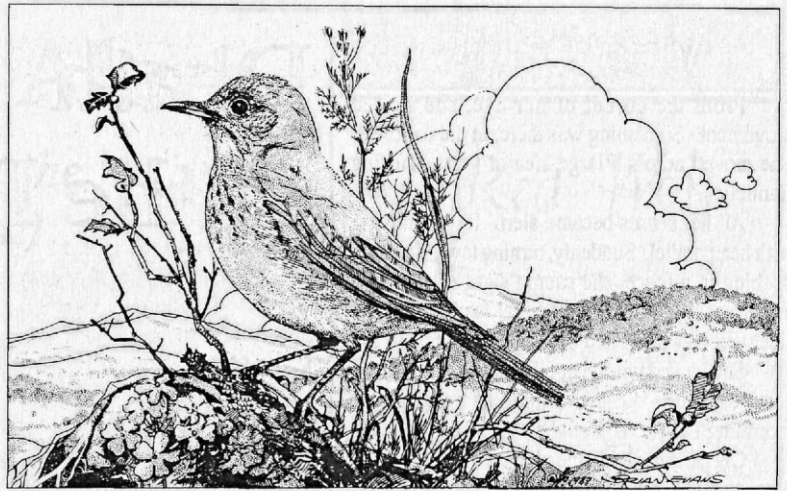
“neotropical migrant.” Quite simply, neotropical migrants are birds that nest in North America and winter in Mexico, the Caribbean, and Central and South America. Most of these birds concentrate not in the South American rainforest, as is commonly believed, but in Mexico, the Bahamas, and the Greater Antilles, with smaller numbers in Central America (Terborgh 1980). Although the name neotropical migrant sounds exotic we’re actually talking common birds, and lots of them—at least 255 species, nearly one-third of the birds that breed in North America. The remaining species are classed as permanent residents (non-migrants) or temperate zone migrants, most of whose populations do not seem to be showing the same declines as the long-distance migrants.

So why are the neotropical migrants in trouble? Because they are under siege every day of their lives—on the breeding ground, the wintering ground, and the migration zone in between.

Let’s start with the Latin American wintering grounds. It’s well known that tropical forests are rapidly being converted to cropland and open grazing land by slash-and-burn agricultural techniques. Such forest destruction obviously creates a problem for migrant birds that depend on the forests for winter habitat. Furthermore, the tropical wintering region inhabited by most migrants is small compared with the temperate breeding area used in North America. In fact, densities of migrant species on the wintering ground have been estimated to be five to eight times higher than on the breeding grounds (Morton 1980). As a result, the destruction of just a small amount of tropical forest can have a huge effect on bird populations. Species that are geographically restricted to a small range, such as the Cerulean warbler, are at the greatest risk. And areas with some of the highest rates of deforestation—the Greater Antilles, Mexico, and Central America—also have the greatest concentration of migrants (Terborgh 1989).

Neotropical migrants wintering near cropland are also threatened by pesticides, because the toxins concentrate in the birds’ fat reserves. Some pesticides, including chlorinated hydrocarbons such as DDT, have been outlawed in the United States but are still supplied to Latin American and Caribbean farmers by U.S.-based companies.

Loss of habitat on the wintering grounds is only part of the problem, however. During spring and fall migration, neotropical migrants funnel through small areas where they rest and feed before beginning nonstop flights over water. Coastlands are particularly important stopover zones, but these areas are disappearing under a welter of condominiums and va-



VEERY

cation homes.

Finally, migrants face tremendous threats on their breeding grounds. As few as 200 years ago, the large and unfragmented North American forest provided ideal habitat for many migrant birds. By 1920, however, indiscriminate logging had deforested much of the landscape. Although many of the forests cut in the 19th and early 20th centuries have regrown in recent years, especially in the Northeast, some biologists feel that the resulting second-growth woodland may lack habitat characteristics needed for successful feeding and nesting.

Even worse, most of the forest that does remain has been fragmented, chopped into little blocks, by logging, urbanization, and other human development. Such fragmentation may be the neotropical migrants’ worst enemy. Small, scattered woodlands present numerous edges—boundaries created by roads, clearcuts, and housing developments. These edges allow intrusions by predators previously restricted to open lands, such as jays and crows, which feed on the birds and their nestlings (Wilcove 1985). Creeping urbanization has also increased predators, such as raccoons and opossums, that live and thrive around humans; and humans bring domestic predators—cats.

The reason why fragmentation has more of an impact on neotropical migrants than on non-migrants or short-distance migrants seems to lie primarily in the birds’ nesting habits. Most neotropical migrants tend to nest on or near the ground, to build open, cup-shaped nests that are easy for predators to spot, and to have low clutch sizes and numbers of broods per year (Greenberg 1980). In contrast, many of the non-migrants nest in cavities or in deep thickets and have larger clutches.

Open-cup nests also render birds highly susceptible to cowbird parasitism (Brittingham and Temple 1983). Female cowbirds build no nests of their own; instead, they lay their eggs

in the nests of other birds, sometimes actively destroying the eggs of the unwitting host. Usually, the host birds raise the more aggressive cowbird chicks to the detriment of their own young.

Given all these problems, what can be done to save neotropical migrants? Let’s again consider the situation in Central America. There’s no question that deforestation in the region must be halted, not only for the migrant birds, but also for the plants and animals that live there year round. In fact, many tropical endemics are in much worse trouble than migrants. Recent studies have suggested that some migrants do not need forested land for wintering and can survive in scrub (e.g. Robbins et al. 1989). Areas cleared for cattle ranches, however, are virtually useless for any birds, either migrant or resident.

So, we must support organizations working for tropical forest preservation, such as the Rainforest Action Network. But let’s finish this paper with a harder look at what’s happening here, particularly in large forest tracts, where migrants do *not* seem to be declining.

Unfortunately, only five long-term censuses of bird populations in large forest tracts exist. Nevertheless, results of these censuses are quite instructive for wilderness proponents. Consider the landmark Hubbard Brook survey, which has been ongoing in a 3076 ha section of the White Mountain National Forest, New Hampshire, since 1969. Between that time and 1986, eight of 14 migrant species showed no change in abundance, and one increased, while only five declined. Furthermore, the species that did decline, the least flycatcher, Philadelphia vireo, Swainson’s thrush, wood thrush, and Blackburnian warbler, may have had unusually high numbers at the beginning of the study owing to high numbers of prey, specifically the saddled prominent, *Heterocampa guttivata*, a caterpillar whose populations irrupt periodically (Holmes et al. 1986).

Additional surveys have taken place in large tracts of old-growth forests of the Cheat Mountains, West Virginia; in an old-growth forest in northwestern Connecticut; in the Great Smoky Mountains National Park; and in Allegany State Park, New York. These studies have found either that neotropical migrants were not declining or that measured declines could be related to changes in vegetative structure (Finch 1991). Large forest tracts, of course, are less susceptible to edge effects than are fragmented forests.

So, does all this information provide more ammunition for wilderness preservation?

Maybe. As I mentioned earlier, not all studies support the evidence for population declines in neotropical migrants. Wilderness proponents face several difficulties in proving a direct link between forest fragmentation and bird declines. First, some bird banding stations have been unable to corroborate declines. Second, certain analyses of Breeding Bird Survey data do not show declines. Third, census results are often biased by year-to-year variability in observers and changes in the amount of time spent counting. Fourth, habitat changes owing to forest succession and natural disturbances probably account for population changes in some migrants. Finally, the Breeding Bird Survey, so far the best source of data on migrant populations, is mistrusted by many biologists because of its dependence on volunteer (often amateur) participants.

Wilderness advocates on the Green Mountain National Forest in Vermont have recently appealed several U.S. Forest Service timber sales based on potential negative impacts on neotropical migratory bird populations. In my opinion, these are unlikely to be successful. Let me quote from a letter written by Lawrence Garland, District Fish and Wildlife Coordinator, State of Vermont Agency of Natural Resources. "The Department does not agree that the proposed Baker Brook cut constitutes forest or habitat fragmentation ... [which] will not occur ... because the forest plan provides for habitat connectivity through riparian zones along water courses and because uncut residuals are left between cutting units ... habitat will not be eliminated or broken into units by an unusable non-habitat barrier."

Although I personally disagree with much of the overall response, I cannot refute the above claim.* So far, biologists have no working definition of fragmentation. Furthermore, a claim that neotropical migrants will disappear if we fragment the forests is easily refuted. Consider total forest cover in the Northeast at the turn of the century. Most of New York State was cleared, yet the birds survived. Of course, their genetic diversity

may have been seriously reduced; no one knows whether this happened.

I believe that research on neotropical migrant populations could well affect national land management practices, but if so, that change will come from within the agencies. Why?

The National Fish and Wildlife Foundation has catalyzed a new program, begun in 1990, called Partners in Flight—*Aves de las Americas*. This massive program is a cooperative effort between numerous landowning government agencies and nongovernmental conservation organizations. The goal is to improve our understanding of neotropical migrants, identify those species most at risk, and then develop plans for protecting their habitat.

Although the program is still young, progress has been made. Five central working groups have been established: research, monitoring, legislative, international, and information and education, with an additional five regional working groups organized throughout the United States and the Caribbean. These groups comprise individuals from the various government agencies as well as conservation groups, and all are developing plans for migrant bird conservation. Already two national meetings have been held, and a third, planned for 22-25 September 1992 in Estes Park, Colorado, will focus on bringing current knowledge about neotropical migrants into the hands of various land managers, where it's most needed.

In addition, the Information and Education Working Group is producing a newsletter, of which two issues have already been published, and a slide show, aimed at land managers and the public, which will soon be available.

The Partners in Flight program does not mean that our land-management agencies will change their forestry practices overnight. At the second national meeting, held last October in Madison, Wisconsin, a proposal from the floor that the working groups submit statements about the proposed (and horrific) changes in national wetlands policy was met with uncomfortable silence. Nevertheless, most of the agency personnel involved in this program are sincere, innovative, and surprisingly biocentric.

The public can become involved in Partners in Flight in several ways. Birders can participate in bird counts such as the aforementioned Breeding Bird Survey and a soon-to-be-started tanager survey sponsored by the Cornell Lab of Ornithology. People can also work with local and federal land management agencies to effect changes in land management, especially changes that will ensure the

preservation of large tracts of land. The public can support national and international conservation groups acting on behalf of neotropical migratory birds and overall preservation of biodiversity.

Partners in Flight is an exciting program, not only because it hopes to preserve bird populations, but also because it represents one of the few times that government agencies have actually reached out to the public and to private organizations in an effort for conservation. Let's work to make it a model for the future.



For more information, including newsletters, contact Peter Stangel, National Fish and Wildlife Foundation, 1120 Connecticut Ave. NW, Suite 900, Washington, DC 20036, (202)857-0166.

The migratory bird information kit, co-produced by the Smithsonian Institution and the National Audubon Society, contains a color booklet, bilingual migratory bird checklist, and sheets on ways the public can become involved. It's available for \$5 from: Susan Carlson, National Audubon Society, 666 Pennsylvania Ave, SE, Washington, DC 20003.

A slide/tape program discussing the decline of neotropical migrants and the Partners in Flight program will soon be available. For information, contact Teri Raml, U.S. Forest Service, POB 96090, Washington, DC 20090, (202)205-0816.

Finally, the Lab of Ornithology's new tanager survey, which will involve censusing tracts of various sizes for the presence or absence of breeding tanagers in cooperation with bird clubs and conservation groups throughout North America, is slated to begin this year. Write: Greg Butcher, Director, Bird Population Studies, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, NY 14850.

Rick Bonney is director of education and information services at the Cornell Ornithology Lab; co-chair of the information and education working group, Partners in Flight; and co-founder of Finger Lakes Wild!

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Note: the best summary of the literature, and in fact of the entire neotropical migratory bird situation, is in Finch 1991 (see above), Rocky Mountain Forest and Range Experiment Station, 240 W. Prospect Rd., Fort Collins, CO 80526.

*** Science Ed. note:** Biologists can refute this claim. Breaking forests into smaller, more isolated units is fragmentation, by definition. Although we cannot usually show that clearcuts isolate bird populations completely, higher predation rates for birds crossing clearcuts decrease successful movements. For neotropical migrants, though, the most serious effect of fragmentation is an increase in edge habitat, which as Bonney discusses, is well documented to reduce reproductive success. The Vermont Agency of Natural Resources seems to be ignoring edge effects.

Songbird Data for Forest Defenders

Biodiversity

by Mark Donham (RR #1, Brookport, IL 62910)

Fragmentation of the Eastern Forest, the major breeding ground for neotropical migrant birds, is a primary contributor to the decline of the guild (Hutto, 1989, Whitehead, 1990, Robinson, 1990). Except for the possibility of pesticide effects (Walcott, 1974) all of the local factors that have been implicated in the decline of migrant populations are related to the destruction and fragmentation of forests (Hutto, 1989). These include insularization effects (Robbins, 1979, 1980, Whitcomb et al., 1981, Diamond, 1984, Lynch and Whigham, 1984, Askins and Philbrick, 1987, Askins et al, 1987), an increase in nest predation (Gates and Gysel 1978, Ambuel and Temple 1983, Wilcove, 1985), an increase in cowbird parasitism (Mayfield, 1977, Robinson, 1990), competitive replacement by other species due to changes in habitat structure (Anderson, 1979, Aldrich and Coffin, 1980, Butcher et al, 1981, Ambuel and Temple, 1983, Askins and Philbrick, 1987) and various combinations of these factors (Noss 1981, Whitcomb et al. 1981).

Robbins et al. in their 1989 study, "Habi-

tat Area Requirements of Breeding Forest Birds of the Middle Atlantic States," further clarified the relationship between forest size and bird communities. Although the study was done in Maryland, as the authors state, "the habitat requirements of most forest bird species apply generally throughout their breeding range, (Noon et al. 1980) and thus, until other studies based on larger samples of populations and habitat data are available from other regions, a management program designed from area requirements and habitat considerations from the present paper should have a high likelihood of success not only throughout the Middle Atlantic States, but also in other forests in the Eastern US."

Robbins's study is noteworthy. Specifically for neotropical migrant species, forest area was the most frequent significant predictor of relative abundance. As summarized by Whitehead et al. (1990), Robbins's study indicates "there is a probability of 1.0 (100%) of encountering certain taxa only if the size of the forest patch exceeds 3000 hectares (approx

7500 acres). As the size of the forest fragment decreases, the probability of encountering neotropical migrant species decreases. The immediate message from those data sets is that if we wish to manage to insure that all of the forest-interior neotropical migrants are not only present, but exist as stable populations, then it is important that the size of protected core areas be large, certainly in excess of 3000 hectares. For viable populations with adequate genetic diversity, it would probably be desirable to make the core areas significantly larger than 3000 hectares."

Unfortunately, the Eastern US no longer has many areas of 7500 acres or more of undisturbed contiguous forest. In states like Illinois and Indiana, the only real potential for these areas is in the National Forests. However, because of timber harvests and road-building, maintenance of permanent openings, and ownership patterns, this potential is being destroyed, despite laws that require the Forest Service to maintain viable populations of Management Indicator Species and biodiversity. Congress continues to listen to the national timber and sportsman's lobbies, and ignore biologists.

Both the National Environmental Policy Act (NEPA) and the National Forest Management Act (NFMA) require the Forest Service to use available scientific data in land management decisions, but the agency has handpicked its scientific basis for its planning decisions. The Forest Service pays most attention to studies that can be interpreted to support continued cutting, road-building, and opening maintenance. It is the duty of activists to comb the scientific journals and find research data documenting the real impacts of Forest Service programs, and bring them in front of the agency in a meaningful forum, such as in an appeal record. This is the only way to ensure that these data are at least acknowledged by the agency.

Forest interior birds are only the most obvious victims of the destruction of our forest ecosystems. Common sense tells us that forest-dependent creatures will not survive after forest is gone. To save the residents of our native forests, we must save our forests in large and unfragmented blocks.

ADDENDUM: The Forest Service finally admitted the problem of neotropical songbird decline in a June, 1991 General Technical Report, RM-205, "Population Ecology, Habitat Requirements, and Conservation of Neotropical Migratory Birds", by Dr. Deborah Finch at the Rocky Mountain Experiment Station at Ft. Collins, CO. Whether they will respond appropriately remains to be seen.

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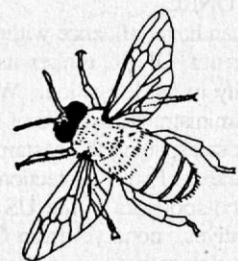
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ANOTHER VICTIM OF GALLOPING CONSUMPTION.



Worldwide, fifty thousand acres of rainforest will be destroyed today. Paradise lost at horrendous cost to half the species left on earth. To ensure their survival, we must act now. Learn how by writing us.

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Oregon Natural Resources Council

Strategy

522 SW 5th, Suite 1050, Portland, Oregon 97204 (503/223-9001)

1161 Lincoln Street, Eugene, Oregon 97401 (503/344-0675)

16 NW Kansas, Bend, Oregon 97701 (503/382-2616)

ONRC's mission is to protect Oregon's natural heritage through education, advocacy and grassroots empowerment. Since its inception in 1972, the Oregon Natural Resources Council has always played within the system, but happily and comfortably at its edge.

Officially, ONRC will do anything legal to protect the environment, including taking actions that, while inside the law, aren't considered politically correct by others. ONRC seeks the edge of the politically possible, taking the responsibility of shifting political reality to be in line with biological reality.

ONRC's turf is the Greater Oregon Ecosystem: the State of Oregon and its environs. Its bylaws define the GOE to include all species that visit or inhabit Oregon and their breeding, feeding, resting, summering, wintering or playing habitat. ONRC hasn't defined the GOE exactly, but it easily includes the Copper River Delta in Alaska where the Dusky Canada Goose summers, and the forests in the mountains of Mexico where the Monarch Butterfly winters. It also includes the Northeastern Pacific Ocean where the salmon and sea lion roam.

ONRC is banned from the offices of certain members of the Oregon Congressional delegation. Strong disagreements over the fate of the last ancient forests have resulted in the exercise of that classic power trick: denial of access. It works on those groups whose sole stock-in-trade is access to power. It doesn't work with ONRC.

One can have influence without access. Banned or not, ONRC makes its presence known daily to its delegation. Whether it's through administrative appeals of illegal federal timber sales, suing the bastards, helping draft the Ancient Forest Protection Act (now with 134 co-sponsors in the US House of Representatives, none yet from Oregon) or calling the delegation out in the press, the ONRC influences the Oregon Congressional delegation. As David Brower said, "Politely

conservationists leave no mark except scars upon the Earth that could have been prevented, had they stood their ground."

Here are some of the principles ONRC works by:

Social change comes through social tension. Expecting the Oregon Congressional delegation in 1990 to deal rationally with the end of ancient forest logging was like expecting the Mississippi delegation in 1960 to deal rationally with the end of segregation. Both may have known it to be wrong and soon to end, but politically neither could lead, only delay.

Pick Your battle and your battleground. Our "peculiar institution" in the Pacific Northwest was old-growth forest cutting. It would not end without outside pressure. ONRC has nationalized the issue to stop business as usual.

Litigation is education. It's much easier to educate when people want to learn. But it's hard to get the message across over the roar of chainsaws. When litigation quiets the saws, the public is more receptive to the problem and the solutions.

Never annoy someone for no reason. Oregon Senior Senator Mark Hatfield once said that he had only one problem more difficult than the Oregon Natural Resources Council: the US Ninth Circuit Court of Appeals. ONRC was at first a little hurt, but then realized that the Senator was annoyed with the Ninth Circuit because it was ruling in our favor on environmental cases. Hatfield was driven to lead efforts in Congress to legislatively override the courts on timber sale appeals (via the "Riders From Hell"), which was found unconstitutional by the Ninth Circuit. (This is now pending before The Supremes.)

Measure your self worth by the enemies you keep. Awards are nice, but scorn is a better indicator of environmental effectiveness. ONRC proudly counts as our arch enemies several members of the Oregon Congressional delegation and the timber industry. ONRC is

fast forming similar relationships with the mining, energy and livestock grazing industries.

Study your opponents. Besides having massive political power, the timber industry knows how to market. We knew we had to make the old-growth forest logging issue national, but what a lousy phrase, "old growth." The industry had successfully characterized "old growth" forest as decadent, diseased, and dying. "Old" is not a word of choice in this youth-worshiping society, and "growth" as a noun is something best removed by a surgeon. We narrowed our choices to "primeval forest" and "ancient forest." Kerr favored the former (the Longfellow poem, "the forest primeval..." etc.), but then ONRC Executive Director James Monteith carried the day with the argument that "ancient" is marketable, since it only has two syllables. "Ancient Forest" appeared in the first headline just two weeks later.

If you are afraid to use the law, then there is no law. After Senator Hatfield passed his Mother Of All Riders From Hell in 1989, restricting ONRC's (and everyone's) ability to bring the outlaw Forest Service and Bureau of Land Management to justice, Sierra Club Legal Defense Fund attorneys advised all plaintiffs in the Northern Spotted Owl litigation that they believed it was the first time since 1871 that Congress stepped over the Constitutional line between itself and the Judiciary.* So, not only did environmental groups have the obligation to protect the forest, we now had to protect the Constitution as well. The Sierra Club and The Wilderness Society opposed the constitutional challenge, noting that it wouldn't be politically correct after passage of the RFH. The Club supported the rider openly, while TWS was a bit too quiet in opposing it. ONRC and others took the high road and blasted the rider. The 9th Circuit Court's subsequent ruling—that it was unconstitutional—was the political nail (we hope) in the RFH coffin.

In an earlier era, ONRC filed litigation

OREGON HIGH DESERT PROTECTION ACT

WILDERNESS AREAS

ACRES	
1 Abert Rim	44,060
2 Alvord	350,000
3 Badlands	32,030
4 Beaverdam Creek	19,580
5 Bighorn	172,000
6 Bowden Hills	59,900
7 Buzzard Creek	332,070
8 Castle Rock	6,200
9 Chimney Rock	5,120
10 Coleman Creek	47,490
11 Cottonwood	49,340
12 North Fork Crooked River	14,800
13 South Fork Crooked River	48,822
14 Deschutes Canyon	22,760
15 Diablo Mountain	494,500
16 Fish Creek Rim	17,090
17 Fort Rock Lava Beds	71,420
18 Freezeout Mountain	32,960
19 Garry Mountain	20,700
20 Hampton Butte	30,235
21 Homestead	14,895
22 John Day River	37,167
23 John Day Fossil Beds	20,440
24 Jordan Craters	59,910
25 Lonesome Lakes	81,520
26 Malheur Canyons	54,160
27 Malheur	50,600
28 Murderers Creek	35,360
29 Myotis	173,890
30 Oregon Grasslands	524,300
31 Owyhee Canyons	480,020
32 Owyhee Mountains	185,700
33 Owyhee River	142,340
34 Pronghorn	219,850
35 Pueblo Mountains	90,182
36 Redman Rim	12,823
37 Sheep Mountain	7,240
38 Sheephead Mountains	260,282
39 Shifting Sand Dunes	15,520
40 Soda Mountain	23,520
41 Spanish Peak	31,750
42 Spring Basin	33,720
43 Star Mountain	14,480
44 Steens Mountain	217,450
45 Sinkingwater	80,370
46 Trout Creek Mountains	320,120
47 Westfall Highlands	15,600
Total Wilderness Acreage	5,064,086

OTHER AREAS

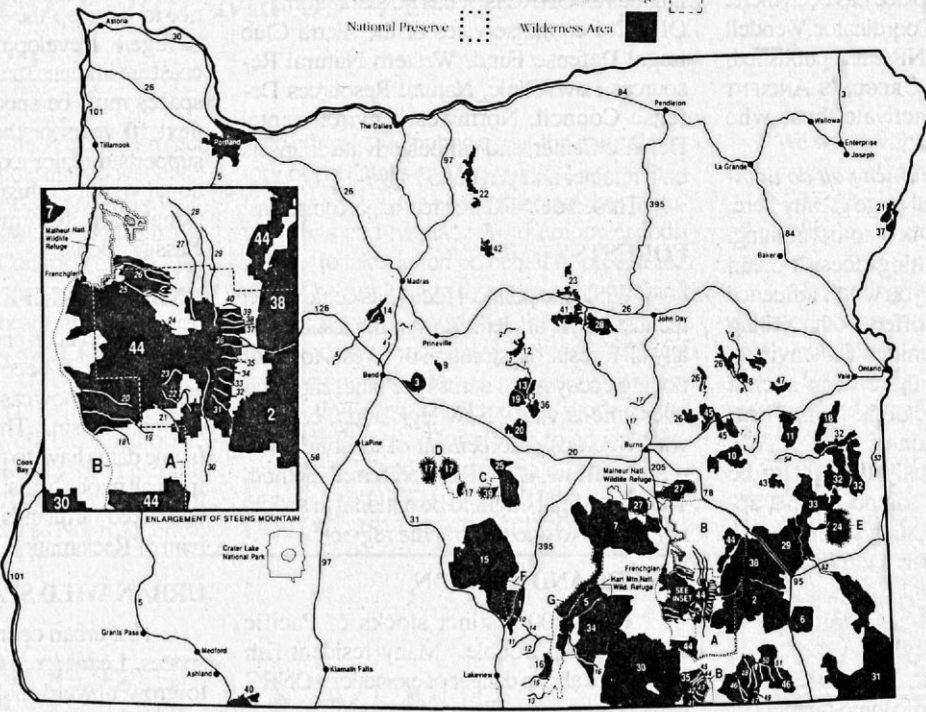
ACRES	
A Steens National Park	500,000
B Steens National Preserve	523,000
C Lost Forest National Monument	42,240
D Fort Rock Lava Beds Natl. Mon.	93,190
E Jordan Craters Natl. Monument	59,310
F Abert Natl. Wildlife Refuge	57,500
G Harl Mtn. NWR Additions	87,686
Total Other Areas Acreage	1,373,516

LEGEND

National Park, National Monuments, National Wildlife Refuge [dashed line]

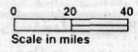
National Preserve [dotted line]

Wilderness Area [solid black area]



WILD & SCENIC RIVERS

MILES	
1 Crooked River	21
2 North Fork Crooked River	8
3 South Fork Crooked River	25
4 Deschutes River	18
5 Squaw Creek	39
6 South Fork John Day River	59
7 Malheur River	39
8 Little Malheur River	29
9 North Fork Malheur River	14
10 Poison Creek	3
11 Honey Creek	22
12 Twelvemile Creek	11
13 Twenty-nine Creek	12
14 Snyder Creek	8
15 Deep Creek	20
16 Guano Creek	33
17 Silver River	20
18 Trivernia Creek	9
19 Home Creek	18
20 Dry Creek	7
21 Deep Creek	7
22 Ankle Creek	13
23 Mud Creek(1)	7
24 Little Fish Creek	4
25 Mud Creek(2)	32
26 Bridge Creek	24
27 McCoy Creek	15
28 Cucamonga Creek	17
29 Kiger Creek	16
30 Willhoops Creek	16
31 Indian Creek	4
32 Pike Creek	5
33 Little Alvord Creek	5
34 Big Alvord Creek	6
35 Cottonwood Creek	8
36 Mosquito Creek	15
37 Little McCoy Creek	6
38 Floc Castle Creek	4
39 Mann Creek	3
40 House Creek	5
41 Denio Creek	8
42 Van Horn Creek	8
43 Arizona Creek	4
44 Cottonwood Creek	8
45 Willow Creek	7
46 Trout Creek	20
47 Kings River	3
48 Willow Creek	18
49 North Fork McMurrin Creek	12
50 Whithorse Creek	45
51 Oregon Canyon Creek	7
52 Owyhee River	14
53 Succor Creek	17
54 Dry Creek	45
Total River Miles	835



against the Forest Service's second Roadless Area Review and Evaluation (RARE II). Here also, ONRC acted against the advice of the Sierra Club and The Wilderness Society, who feared that a suit would bring on terrible "re-release language" mandating the development of roadless areas. The ONRC/National Audubon Society litigation broke the political logjam and allowed passage of the Oregon Forest Wilderness Act and numerous other state wilderness bills in 1984.

Presently a similar debate rages over the Pacific salmon. Already extinct are 107 salmon stocks. Another 214 stocks from the Canadian border to Malibu Creek are in trouble. The Endangered Species Act comes up for reauthorization in 1992 and some environmental groups urge caution in undertaking any additional petitions to list endangered salmon stocks under the Act, lest we foment a political backlash. The problem is that the fish have no sense of political reality—they're going extinct due to dams, habitat destruction, hatcheries and overfishing—even though it would be politically better if they waited until the ESA was reauthorized.

Remember your (grass)roots. ONRC has

a 15-member Board of Directors elected from a larger Governing Council. The Governing Council is composed of representatives for each of ONRC's 50 member organizations, and several of the state's leading grassroots conservationists are members. The Board of Directors hires the Executive Director, who in turn hires the professional staff. Staff are hired for their commitment. It's easier to make a professional out of an environmentalist than an environmentalist out of a professional. ONRC also has 6000 individual members.

Cultivate your grassroots. ONRC's Eastern Field Representative has a territory larger than many states. Environmentalists are few and far between east of the Cascade Range in Oregon; making them all the more important. Since 1976 Tim Lillebo has cultivated local environmental activists from the smallest communities of eastern Oregon. Environmentalists don't need a majority in these small towns, only a rational and articulate minority. By picking a battleground elsewhere (say Portland or Washington, DC), we can carry the day.

Have faith in the electorate. In 1988 environmentalists were working defensively to stop the Salt Caves Dam on the Upper Klamath River.

It was time to go on the offensive. Nine streams were carefully chosen based on their high resource values and popularity for a statewide ballot measure to expand the Oregon Scenic Waterways System. When the initiative began, federal politicians did polls on river issues and found out how popular wild rivers are. In an effort to divert criticism of his timber policies, Senator Hatfield offered and passed a record-sized federal Wild and Scenic Rivers Act for Oregon. He included 40 stream segments, totaling 1400 miles, but did not include the Upper Klamath. The people added the Upper Klamath River and others to the State Scenic Waterways System, which provided the political and legal impetus for the State of Oregon to oppose the federal license for the dam.

Refuse to lose. Dams have a way of refusing to die. The Salt Caves Project isn't dead yet, but the developers are running out of money. When the money is gone, so too the dam threat.

ONRC has sued to the Supreme Court and back over Elk Creek Dam, a salmon-killer on the Rogue River. This Corps of Engineers project is the personal porkbarrel favorite of

Senator Hatfield. By being more persistent than the Army or the Senator, environmentalists can win this fight. It sits half built, a monument to waste.

Involve people With places. The committed defender of a wild place has been there. ONRC's Conservation Coordinator Wendell Wood has written, and ONRC has published, the WALKING GUIDE TO OREGON'S ANCIENT FOREST to educate and activate those who recreate.

Things happen even when you do nothing. Nature and politics diverge greatly here. With nature, it's usually best to do nothing. With politics, doing nothing doesn't mean nothing will happen; just you won't influence it. The Pacific Yew tree offers both exciting and frightening opportunities for environmentalists. Never has there been such a practical and real example of the human benefits from the conservation of biological diversity. A tree previously thought to be worthless yields taxol, a compound that appears to be effective in fighting several forms of cancer. It grows in old-growth forests and our timber agency and industry opponents contend that taxol can only be utilized by clearcutting the forest. They seek to cast us as opponents of the utilization of this resource. They taunt us by wasting up to three-quarters of the resource in their exploitation.

Some national environmental groups, fearing bad press, ran from the issue. ONRC confronted the issue directly, and is systematically educating the media to recognize that the bad actors are in fact the federal timber agencies and the timber industry. ONRC is taking some mud during the struggle (from the front, both flanks and the rear), but one shouldn't be afraid of anything that can be washed off or thrown up.

Beware of consensus. When environmentalists are winning lawsuits, the Forces of Darkness (FODs)—bad politicians, bad bureaucrats, industry and their ilk—say things like "The only winners in lawsuits are the attorneys. We have to find a different way to work out our disputes." Then the FODs usually suggest a consensus group. Consensus can work when the goals of the various interests are the same; say, climbing a mountain. But when one interest wants to protect the mountain and the other wants to clearcut it, consensus cannot work. The underlying foundation of consensus decisionmaking is that all sides' positions are equally legitimate. This implies there is no right or wrong. That is crap. Much of the dispute between environmentalists and the bureaucratic-industrial complex centers on the latter's failure to obey the environmental laws already on the books. Never negotiate with lawbreakers on how they

can continue to violate the law.

Get a good lawyer. Backing your demands with lawsuits is essential. Otherwise the bureaucrats will just waste your time taking your "input" but changing nothing. As litigious as ONRC is, it has no staff attorneys. ONRC uses the services of the Sierra Club Legal Defense Fund, Western Natural Resources Law Clinic, Natural Resources Defense Council, Northwest Environmental Defense Center, and various private counsels on a retainer and pro bono basis.

These are ONRC's current major campaigns:

FORESTS

While the political focus has centered on the last of the ancient forests, the issue is really all forests. Restoration of forests to functioning ecosystems across the landscape and over time is vital. New legislation, coupled with vigorous enforcement of existing environmental law, is ONRC's preferred method. The forest fight ought to be national in scope, not limited to one geographic region.

RIVERS AND SALMON

Over 200 distinct stocks of Pacific salmon are in trouble. Many resident fish species are also in danger of extinction. ONRC is working to get all qualifying species protected by the Endangered Species Act and other laws.

OREGON HIGH DESERT

Livestock should be removed from the public lands. ONRC has drafted, with other grassroots conservation groups in Oregon, the Oregon High Desert Protection Act. It encompasses over 6 million acres of National Parks, National Monuments, Wilderness, Wild and Scenic Rivers and other federal protective classifications. It calls for a phase-out of livestock grazing in all of these special areas. Generic national legislation applying to all public lands is also needed. ONRC supports the boycott of public land beef.

OREGON COAST AND OCEAN

While ocean oil and gas development is not an imminent threat to offshore Oregon, the siblings of the Exxon Valdez skirt by on their way to California. (This is but another reason not to develop the Arctic National Wildlife Refuge.) Development pressures along the coast are immense and wetlands and other wild spaces must be specifically protected in the next 10 years or they won't exist. ONRC supports a major expansion of state and national wildlife refuge systems, state and national park systems and other protective classifications.

ENDANGERED ECOSYSTEMS

Conservation and restoration of very large ecosystems is becoming a major effort of ONRC. A showcase example is the Upper Klamath Basin. The salmon should return (some dams have to go), the livestock must go from all public lands, forests must be restored, and diked farmlands reclaimed from the Bureau of Reclamation.

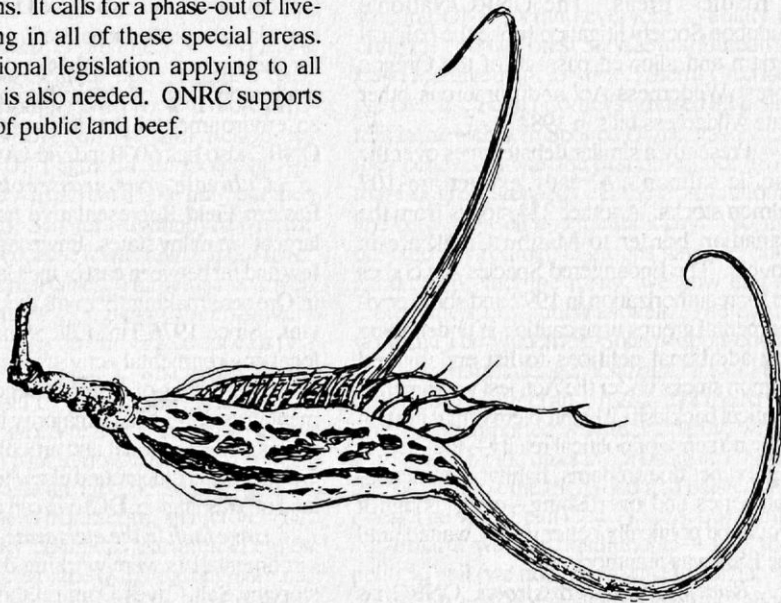
URBAN WILD SPACES

Not urban open spaces, but urban *wild* spaces. Leave room for nature and force cities to grow upward, not outward, if they must grow at all. Preserving urban wild space is essential so the connection is maintained between urban people and nature.

Please write or call for more information, including a sample copy of *Wild OREGON*, quarterly journal of the Oregon Natural Resources Council.

—Andy Kerr

*Ed. note: SCLDF is independent of the Sierra Club.



Predator Project

POB 6733, Bozeman, MT 59771

406-587-3389

Since its inception, the Predator Project has been working to promote the recovery and protection of the grizzly bear and gray wolf across North America, as well as to reform the federal Animal Damage Control program. We have recently initiated campaigns to address the exploitation of black bears, and the decline of the wolverine, fisher, swift fox and burrowing owl.

The Predator Project unites the efforts of volunteer activists who work on behalf of the furred, feathered, finned and fanged flesh eaters. Our objectives are: 1) to ensure sufficient protection for predators across North America;

2) to educate the public about the natural history of predators and the political issues they face, as well as the need to protect their natural habits and habitats; 3) to empower individuals to take action on behalf of predators.

The worldwide threat to predators and wild ecosystems, coupled with the recognition that predators represent wilderness and are a rallying point for ecosystem preservation, are motivating factors behind the work of the Predator Project. Our efforts to educate, inspire, and defend these animals, send a message: **NORTH AMERICA NEEDS PREDATORS FOR INTACT ECOSYSTEMS!**

Strategy

We work with individuals willing to help in any way, including:

—Monitoring and challenging the actions of public land and wildlife management agencies.

—Informing us of actions affecting any predator, so that we may act on the issue in a timely manner.

—Educating others through public meetings and events, letters-to-editors, fundraisers, etc.

If we can help your efforts, or if you can contribute to ours, please contact us.

—Tom Skeele

It's 1992: Do you know where the Sierra Club is?

by Margaret Hays Young

Sometimes, you'd almost think the Sierra Club had lost its sense of humor. Most "mainstream" environmental groups have received criticism for making deals with industry; the Sierra Club is not alone. The Club is not the only group that calls its compromises "victories"; but unlike other "mainstream" groups, the Sierra Club relies on volunteers, and the volunteers aren't always willing to embrace the compromises.

The Club is showing growing intolerance of criticism, and this intolerance now threatens its "democratic structure." When the criticism was only coming from the "outside," the Club ignored it. But bitter complaints about the Club's management strategy are now coming from the "inside."

Just as the U.S. Forest Service violated the public trust by delivering our National Forests to the timber, grazing, and mining in-

dustries, the Club's endless compromises have violated their members' trust. What was once a courageous group of amateurs, dedicated to saving the land, has turned into a modern corporation, attuned to market realities.

The Club has started to take an adversarial attitude toward smaller, more progressive groups: instead of supporting grassroots groups working for wilderness protection, the Club in some cases actively thwarts them. These groups' strong legislative proposals are never mentioned in Club publications; weaker, Club-endorsed legislation is presented as the best (and only) option. "Political realism" is now the order of the day.

Many disappointed volunteers have left the Club. Some of us remained, feeling we had to try to reform it, before giving up. This reform effort came to be called "ASCMEE," or the Association of Sierra Club Members for Environmental Ethics (pronounced "Ask me"; a take-off on "AFSEEE," the Association of Forest Service Employees for Environmental

Ethics which is trying to reform the Forest Service).

As a name, "ASCMEE" made sense: One of the Club's main problems is the closed and isolated nature of upper-level management. The Club's leaders are out of touch with the "grassroots," and show no inclination to get back in touch by asking the members what they think. There are widespread attempts to suppress dissent within the Club. The parallels with the FS are striking.

The first "ASCMEE Outing" was a demonstration last November at the Club's Board of Directors meeting in San Francisco. Soon after, some "ASCMEE" folks received a communication from the highest levels of the Sierra Club, instructing us to "desist from using the words 'Sierra Club' or its logo in any literature" we distribute. We were told that "this request has nothing to do with the content of your various communications. It is a legal demand necessary under United States law to protect the Sierra Club name." We were told

Movement
Mutterings

that "the Sierra Club cannot allow its name to be used by others, including groups of its members which are not an official part of the Sierra Club structure."

This is interesting. What constitutes "an official part of the Sierra Club structure"? Can Sierra Club members be prohibited from so identifying themselves, if they make it clear (as ASCMEE participants have always done) that they do not represent the Club? How many "others" are to be prohibited from using the words "Sierra Club"?

Last September, a venerable member of the Club's Board of Directors conveyed to me verbally, through an intermediary, that I was not to be identified as a Club or Chapter representative, and more importantly, that I was not to be identified as a member of the Sierra Club when I spoke at a conference in Missoula later that month. He required that I respond to his request in writing. I agreed to this, because it seemed to me at the time that such identification was superfluous. But how many other members will receive similar "requests" in the future? The Club has often accused dissenters of being "divisive," to silence opposition. But the apparent "unity" produced is meaningless.

The underlying problem is that the Club's Old Guard has lost track of what it's fighting for. If the organization becomes the point, then the battle is lost. That is what has happened to the Sierra Club: its structure has become rigid and narrow. We must remember why we're here. The only real proof of our success is written on the face of the land. No matter what politicians we elect, what lawsuits we win, how much money we raise, if the land is destroyed, we have failed. And if our own power or status becomes the goal, it's time to get out, because we're part of the problem.

MARCHING IN LOCK-STEP, OR, HOW NOT TO RUN A MOVEMENT

The Big 10 environmental groups (the "majors" including NRDC, National Audubon Society, The Wilderness Society, the Club, etc.) commonly assume that they have to be unanimous to be effective. So the "mainstream" positions are made identical, determined by the lowest common denominator, the position acceptable to the weakest mainstream group.

The Club is anxious to ensure that to the "outside" world, its members "speak with one voice." The Club has about 600,000 members. Do they have only one brain?

A recent memo from the Chairman of the Club's Northwest Region on the new Public Lands Forest Management Policy (the one that has provoked outrage from grassroots members across the country) explains: "The RVP Forum reminds RCC, Chapters, and Groups,

that public endorsements of legislation outside their area of jurisdiction is (*sic*) not appropriate. The Campaign Steering Committees or Issue Committees are the designated entities to determine the Club's national legislative strategy including the endorsement of bills. RCCs, Chapters and Groups are encouraged to communicate their support of opposition to bills to the respective campaign steering committee or issue committee, internally.

"Questions have arisen regarding public or press being present during a meeting in which these subjects are discussed. While club meetings are open to club members. They are not required to be open to non-members. (*sic*) RCCs, and ExComs can and should ask non-members (including the press) to leave when sensitive subjects are on the agenda. A member of the press can also be asked to leave even if they (*sic*) are also a member of the club if confidentiality cannot be assured. Club leaders are expected to use discretion in this regard, as well as with newsletters and other publicly distributed documents and statements. While full discussion and debate on policy and strategy within the Club are encouraged (as noted in the resolutions above), to the public we speak with one voice."

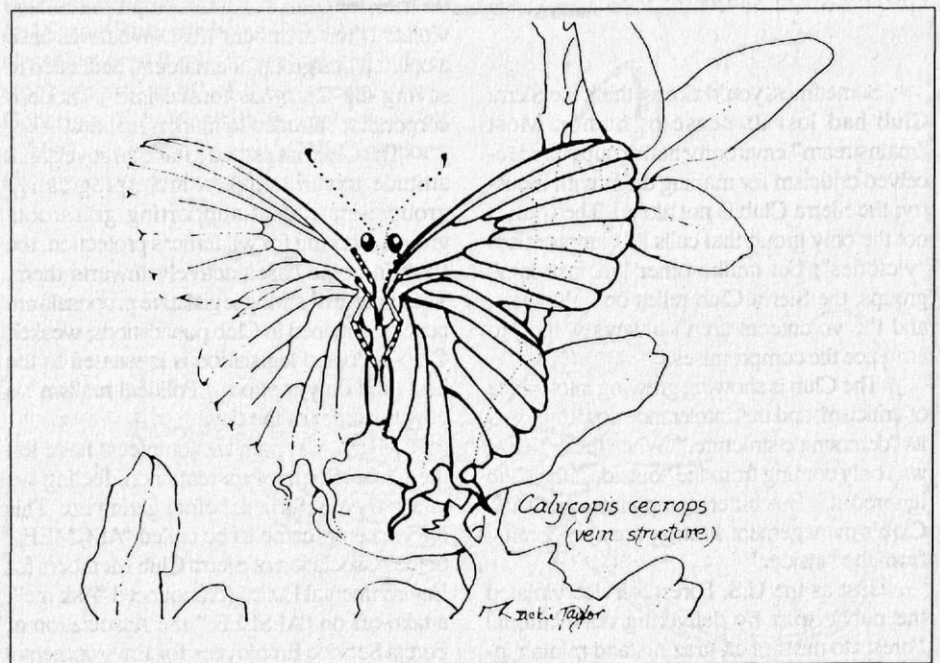
Besides the public relations problem this poses, the definition of "inside" the Club now has a new meaning: apparently one is "inside" the Club if one is a member, unless one is also a member of the press. How far does this go? Shall we exclude Club members from Club meetings if they also belong to animal rights groups? (Many Club members do.) What about truly "radical" groups like, say, Greenpeace? Shall we start each meeting with a Loyalty Oath?

Unbeknownst to most Club members, we will soon have a chance to vote on a change in the National Sierra Club By-Laws to give the Board of Directors the explicit authority to remove elected volunteer leaders or local executive committees whenever the Board feels it is "in the best interests of" the Club. Theoretically, that authority exists now, but the current By-Laws require notification of a Chapter's membership before such an action is taken. Under the new By-Laws, no such notification would be required. And that, it seems, is the point. Ballots go out in February 1992. A two-thirds vote is required to pass this.

One member of the Club's Board of Directors reportedly argued vehemently in favor of these new By-Laws at a local chapter meeting on the grounds that the changes were necessary so that the Board could "get rid of those people in New York." Under the current By-Laws, the Board would have to notify the New York Chapter's 40,000 members of their action, and provide an opportunity for them to respond.

This is a Big Year for the Sierra Club: 1992 is the Centennial! It may also be the last year in the Club for many activists. At several recent meetings, I have heard members say that if the By-Laws changes pass, they will not serve out their terms. The recent communication to ASCMEE participants said that the Club's name is "its most valuable asset." That may be true, if the Club's purpose is fundraising and increased membership. But if its purpose is protecting wildlife and wild lands, its most valuable asset is its members' trust.

ASCMEE can be contacted at POB 1591, Davis, CA 95617.



Right To Life; Or, Loving The Population Bomb

by Leslie Lyon

What would you think if someone told you that Americans kill at least 30,000 babies a day? That's 11 million babies a year—enough to add 15 million new American consumers, instead of the usual 4 million. What if this person went on to say "it is even more heartbreaking when we realize that these babies are innocent, unbaptized, and needed?"

These claims were not made by some raving street preacher. They appeared in the newsletter of a powerful lobbying group—Catholics United for Life. In a nutshell, they describe the rationale behind one of the most chilling, potent enemies the environmental movement has ever had—the so-called pro-life movement.

Maybe you've seen the fetus patrol on TV, bullying patrons of abortion clinics, praying, and contorting themselves as cops drag them off. To an Earth lover who imagines that abortion rights only concern feminists, right-to-life antics may seem merely pathetic or amusing. The truth is that the anti-choice agenda threatens not only women, but all our hopes of defusing the population bomb.

So why would anyone demand that every unwanted child be born into an already overcrowded world? Almost all right-to-lifers are fanatically religious. Randall Terry, the founder of Operation Rescue, claims that Satan doesn't want people to have children. He says good Christians leave it up to God to decide how many children they have.

Only God can make a man, goes the anti-choice refrain, so only God has the right to unmake a man. Some, like the Mormons, envision billions of "spirit children" languishing in limbo, waiting for righteous Earthlings to give them life. Never mind that Earth couldn't handle all those spirits.

Right-to-lifers' goal is to preserve human life beginning at the zygote stage—the moment an egg is fertilized. This means forbidding not only abortion, but important contraceptive methods like the IUD and the most commonly used low-estrogen pill. To

most believers in the zygote cult, the only sanctified forms of birth control are abstinence and the rhythm method, or as the irreverent call it, Vatican Roulette.

Some right-to-lifers do theorize that the man upstairs has no problem with condoms, but they risk offending the founder of the movement—the Catholic Church. Nearly all pre-Roe v. Wade activists were Catholics. Although there's no scriptural evidence that god gives a hoot about eggs, sperm or even embryos, Catholic theologians say that artificial birth control violates "natural law."

Thousands of fundamentalist Christians who joined the anti-choice fold after 1973 were motivated by fear and loathing of the sexual revolution. Though right-to-lifers claim that they only want to protect innocent fetuses, most also dream of a return to Vatican morality. Achieving this dream would necessitate the end of women's liberation and its essential element—birth control.

Feminists who observed a right-to-life convention during the late 1970s were disturbed to see the delegates wearing "Ban Family Planning" buttons. Yet, in those days, most people still thought of right-to-lifers as religious nuts on the far end of the lunatic fringe.

The election of Ronald Reagan turned the tide for anti-choice activists. Soon they began bombing and vandalizing abortion clinics, opening phony clinics to browbeat women into continuing unwanted pregnancies, and comparing pro-choice activists to Hitler. The latter tactic is especially ludicrous considering that Hitler outlawed abortion and contraception as soon as he took office.

The 1980s saw a long string of victories for fetus rights. The year after Reagan came to power, Congress cut off federal abortion funds for poor women. Strategies to ram a Human Life Amendment through Congress proved unnecessary after Reagan and Bush remade the Supreme Court in the right-to-life image.

In 1985, the movement achieved international triumph. Responding to pressure from anti-choice groups, the Reagan delegate to a Mexico City population conference announced that the US would no longer give family planning funds to organizations that provide abortion services or counseling. As a

result, the US withdrew from the International Planned Parenthood Federation. Later that year the US also withdrew from the United Nations Population Fund (UNFPA), because of publicized incidents of coercion in the family planning program in China, where UNFPA has a presence. UNFPA is perhaps the most important agency preventing unwanted pregnancy in the Third World.

Population groups have worked to reverse the Mexico City policy, so far to no avail. USAID (United States Agency for International Development), a federal agency, once aided international family planning efforts. Now, as a result of directives from the White House, it purveys the anti-choice point of view.

The effect of the US withdrawal from UNFPA has been nothing less than catastrophic. New demographic studies reveal that human numbers are rising even faster than the gloomiest UN projections. Most experts hoped world population would rise to only 10 billion by the year 2050; present trends indicate that a figure of 14 billion is more likely.

Worldwatch Institute found that 50 to 60 percent of couples in Latin America, 60 to 80 percent in poor Asian nations (except China), 75 percent in the Middle East and North Africa, and 90 percent in sub-Saharan Africa use no modern contraception. The reduction in world family planning services is even more tragic in view of the huge demand for them. Millions of the world's women desperately want contraception, but are unable to get it. A 1989 UNICEF report found that over one-third of the 140 million Third World women who became pregnant the previous year didn't want another baby. All over Earth, women want smaller families, but lack of contraception services and male hostility toward family planning keep them barefoot and pregnant.

In 1991, right-to-lifers won another appalling victory on the domestic front. Under the new Bush "gag order," family planning clinics receiving federal funding can no longer mention abortion to clients. Women who become pregnant by mistake are now offered only one alternative: pre-natal care.

Congress recently voted to end the gag order, but the House fell short of overturning Bush's veto by 12 votes. In the context of the

Foreign Aid Authorization Bill for FY92, the Senate and House voted to reverse the Mexico City policy and to restore funding to UNFPA, though not by sufficient majorities to overturn a threatened veto. The bill never reached Bush's desk, because the Senate and the House were not able to reach agreement on a final version.

Several of the more repressive states have responded to anti-choice lobbying by passing laws criminalizing abortion. The final Supreme Court battle is expected to overturn *Roe v. Wade*, with the result that abortion will immediately be outlawed in over half the states.

In the last decade, the movement once dismissed as a bad joke has achieved a revolution beyond feminists' wildest nightmares. Recent US polls indicate diminishing support for women's right to choose. Even in a progressive state like Washington, a referendum to allow abortion after the overturning of *Roe v. Wade* passed by only 1/3 of one percent of voters.

Confident of victory on abortion, many right-to-lifers are concentrating on their quest to require all women to have as many children as god wills. The zygote cult, and its lackeys in Washington, have redoubled their crusade to eliminate federal family planning aid for the poor. Today, there are 1000 fewer clinics for poor women than in 1980. Federal family planning funds declined by \$22 million a year over the same period.

Since lawsuits removed several contraceptive devices from the market, women have had fewer birth control options than we had twenty years ago. A new hormone implant prevents pregnancy for up to five years, but its \$500 price tag deters many women. Only one US firm, Ortho, is presently doing contraceptive research. Dr. W.N. Hubbard, president of Upjohn Company, told Congress that anti-choice boycotts and letter campaigns are a major impediment to contraceptive research.

Society is now so infected with anti-choice prudishness that most teenagers have trouble obtaining birth control without parental consent. Pressure from right-to-lifers recently persuaded Health & Human Services Secretary Louis Sullivan to cancel a study designed to prevent teenage pregnancy.

Obviously, the fact that no birth control leads to more abortions doesn't bother right-to-lifers. Nor do they mind the increase in Third World deaths caused by botched abortions, a result of the Mexico City policy. Some health workers allow women suspected of self-abortion to bleed to death, rather than risk losing US funding.

Undaunted by the right-to-life regime that created nightmare conditions in Rumania, US anti-choice groups are lobbying other Eastern

European countries to outlaw abortion and birth control. The almost total lack of contraception in these countries has forced women to rely on abortion for birth control. A contraception ban passed by the Polish Senate, claimed as a victory by Human Life International, perpetuates this situation.

On the abortion front, a startling development has thrown fetus fetishists into a new uproar. The new drug RU 486, which safely ends pregnancy up to the 63rd day, could rob anti-choice demonstrators of the fun they've been having at abortion clinics. RU 486 is administered in the privacy of a doctor's office, without anesthesia or risk of infection.

News of this latest threat to zygotes led to a boycott against Roussel Uclaf, the RU 486 distributor in France. The company quickly caved in to the pressure. Two days later, in a move of admirable courage, France's Minister of Health ordered Roussel Uclaf to resume distribution, declaring that RU 486 is "the moral property of women."

After several US companies expressed interest in testing the drug for the US market, a new anti-choice group called the RCR Fund threatened a worldwide campaign against Hoechst A.G., the German company that controls Roussel Uclaf. This campaign would include charges that the company is a polluter, a violator of anti-trust laws, and a discriminator against women.

Such charges are especially cynical in light of anti-choice malice toward women and the environment. Right-to-lifers attacked environmental groups during the 1990 Earth Day celebration, claiming that they advocate abortion as a way to remedy a "nonexistent population problem."

Determined to refute anti-choice propaganda, feminist groups have started their own petition drive aimed at Hoechst A.G. A recent Harris poll shows that 59 percent of US adults believe the drug should be available in this country. News that RU 486 shows promise in treating glaucoma, ulcers, breast cancer and other health problems make the drug even more important.

The outcome of the RU 486 battle is crucial, both to women's rights and to the struggle to prevent unwanted pregnancies from fueling the population explosion. Anti-choice groups are rightly terrified that ready access to this drug would impair their crusade for a higher birth rate.

Any realistic Earth lover would agree that there is no hope of solving world problems unless human numbers go down, both in developed and developing countries. Environmentalists must do more to avert the right-to-life dream of ensuring a big family for every fertile woman.

Family planning proponents in Congress are seeking a vehicle for another attempt to reverse the Mexico City policy and to restore funding to UNFPA. At this writing they are looking toward the foreign aid appropriations process, but it is not clear that a Foreign Aid Appropriations Bill for FY92 will ever materialize.

A vital first step in getting family planning services to Third World women is reversing the Mexico City policy. As of this writing, legislation to restore funding to UNFPA has been stalled in the House due to a perceived lack of grassroots support. Letters and calls to representatives could change this perception.

It's also important that anti-choice forces lose their fight to keep RU 486 off the world market. Women's organizations need our help in their efforts to convince pharmaceutical companies that most Americans are pro-choice. For information on a petition to Hoechst A.G., write The Feminist Majority Foundation, POB 96780, Washington DC 20077.

SOURCES:

- Zero Population Growth Reporter, 12-90, 4-91, 9-91
- Calypto Log, 2-91
- Feminist Majority fund raising letter mailed 11-91
- Enemies of Choice* by Andrew h. Merton, published 1981 by Beacon Press

Leslie Lyon is a wilderness defender in Utah.



Appalachian Clearcutters Flunk Silviculture

by R.F. Mueller

To hear the U.S. Forest Service tell it, our primitive Appalachian forests in all their virgin splendor, were really impossibly decadent, scarcely alive. And to hear these bureaucrats, the ancient trees lacked only one ingredient to cure their ills: clearcutting. A simple remedy!

To get this message across to an initially gullible but increasingly skeptical public, these industrial foresters use a well-honed rhetoric and lexicon of terms ranging from euphemistic to scary. Thus the present forest, with trees far younger than those of the primary forest, dating mostly to the turn of the century or later when it arose from the holocaust of logging and fires, is said to be "aging." This characterization is almost invariably used for 80-90 year old trees in environmental assessments of timber sales despite the Forest Service's own literature (Agricultural Handbook No. 271, USDA Forest Service, 1965) which shows that some major tree species add their greatest yearly growth increment at 100 years of age and that some species live 500 years or more. Stands of trees 80 years of age are sometimes said to be "falling apart," and one ranger admonished citizens at a public hearing that "it's a dying forest out there." Obviously there is no appreciation here for the dead trees and downwood characteristic of old growth, traits essential for the health of the forest. Such a forest doesn't "age" but exhibits dynamic equilibrium between all ages of trees including the dead and dying.

We frequently hear or read that clearcutting is required to revitalize "stagnant stands of timber" which then "regenerate" as "vigorous" and "thrifty" sprouts. The forest is said to be in need of "opening up" or "daylighting," implying that shade intolerant but commercially desirable species such as oaks and tuliptree could not grow but for the aid of chainsaws and bulldozers. To discredit gentler methods of logging involving selection of trees or small groups of trees, they raise the spectre that the forest in the dry oak-rich George Washington and Jefferson National Forests might be overrun by shade tolerant and

commercially inferior species such as Beech, Red Maple and Black Gum. This argument has also been made in the Monongahela National Forest where shade tolerant species such as Sugar Maple and Beech are common and where oaks are not as common because of moist conditions. How puzzling then that both shade tolerant and intolerant species were abundant in the original virgin mixed mesophyte forests of the moist Cumberland and Allegheny Mountains, while intolerant oaks thrived without management in the dryer forests elsewhere (Lucy Braun, *Deciduous Forests of Eastern North America*, Macmillan, 1950)! As pointed out by the prominent ecological forester Dr. Leon Minckler in numerous publications (e.g. *Journal of Forestry* vol. 72, 1974), the large openings of clearcuts are not required to generate intolerant species. In the old-growth primary forest this was simply accomplished by tree fall gaps and other disturbances that generally left openings far smaller than clearcuts, or by fire, whose role in most Appalachian forest types is still not well understood.

When we carefully examine clearcut areas, the picture that emerges is quite at variance with Forest Service propaganda. Since most clearcuts done under Forest Service management date back no further than the 1960s, its silviculturists haven't seen their handiwork mature. However, some private lands have older cuts of a similar nature and some of these are informative. Even for the Forest Service the trends are disquieting, as reflected in their reports. Valuable species such as Northern Red Oak, White Oak and Black Oak are frequently replaced by less valuable Scarlet Oak, Black Gum or a plague of Red and Striped Maples. A striking example is revealed in a 12 April 1990 scoping notice on Timber Stand Improvement in compartments 1 and 6 of the Lee Ranger District of the George Washington National Forest. Original stands consisting of 45% Northern Red and Black Oaks of "good quality" were replaced (in descending order of abundance) by Red Maple, White Pine (planted), Scarlet Oak, White Oak, Virginia Pine, and a mixture of seven other hardwoods and Virginia Juniper. A similar example may be observed in a 10 year old clearcut near the

popular North River Campground of the Dry River R.D. in the GWNF. Here the uncut forest surrounding the clearcut consists dominantly of upland oaks with little Red Maple. However, Red Maple has practically taken over the clearcut.

Also, in many areas in which the Forest Service has tried to use clearcutting to convert hardwoods on poor sites to pine, this fight against nature has proved expensive and frustrating for the industrial mindset. Thus in a 16 May 1990 letter from the James River Ranger District of the GWNF relative to a "White Pine Release" E.A. we read: "From experience we can say that the majority of stems which are overtopping the pines are Red Maple, Scarlet Oak and several types of brushy species." In these cases the FS uses herbicides, adding to the general degradation of the watershed. In a Virginians for Wilderness examination of many clearcuts, these appear to be common trends. Certainly this challenges the Forest Service axiom that Red Maple and other relatively shade tolerant species pose a threat only in small selection cuts and clearings.

We are told that one advantage of clearcuts is that they provide numerous sprouts which, since they utilize the root systems of the large trees they replace, grow faster than seedlings, at least initially. However this proliferation of sprouts also has disadvantages. The sprouts are usually crowded on and around the stumps. The straightest of these sprouts are at the center of the clump and usually originate on the stump, sometimes high up. However, this exposes them to basal rot as the stump underneath rots away. Sprouts that originate on the roots around the stump are sounder but tend to be bowed outward and so may yield crooked timber. Although vigorous, clearcut sprouts may not be thrifty. Of course, clearcuts result in numerous sprouts only if the trees cut are hardwoods and sufficiently small, since large hardwoods seldom sprout much, and conifers almost never do so. Most of the existing clearcuts in the Central Appalachians were done in very immature stands less than 50 years in age, hence the sprouting success. However, the trees clearcut were by and large derived from seedlings that resulted from

cutting the original primary forest of large trees. In view of the characteristics of sprouts as previously discussed, trees being clearcut are probably straighter and sounder than those now developing from these sprouts in clearcuts.

The many small trees cut in clearcuts have resulted in other disadvantages. Because most of the nutrients in the tree, exclusive of those in leaves, limbs and roots, reside in the inner bark or cambium, and since small trees contain a larger proportion of cambium than do large ones, their removal depletes the soil disproportionately when compared with the removal of large trees. It is likely that this effect contributes to the disproportionate growth in clearcuts of Red Maple and Scarlet Oak, species adapted to poor soil. Also an analogous process affects the economics of clearcutting. This point is discussed in Gordon Robinson's book *The Forest and the Trees* (Island Press, 1988), with tables showing that small trees cost considerably more to cut, limb, buck, skid, load and transport than do large trees. This helps explain the below-cost timber sales associated with clearcutting.

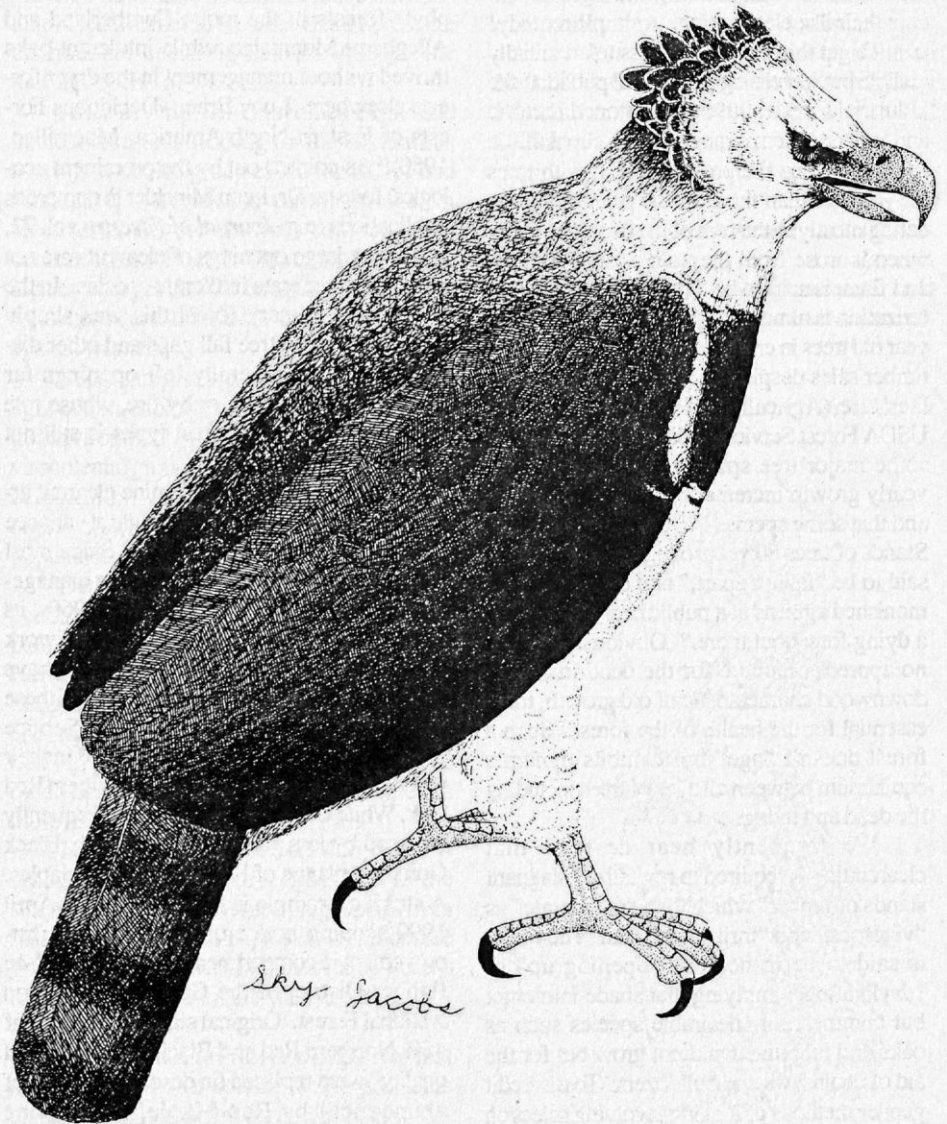
Proponents of clearcutting usually say that opponents object to the method because its results are unsightly and then patronizingly assure them that nature will soon heal the scars. Yet no informed critics of clearcutting base their criticism on mere appearances. To many people, fire scars and blowdowns would seem as unsightly as clearcuts. However, natural disturbances have few if any of the negatives of timber extraction. Nutrients are not hauled away with wood products. Compaction of soils and destruction of the forest floor do not occur unless the fire burns very hot—usually as a result of human-induced fuel loads. Most important, unless human intervention via fire suppression and salvage logging occur, naturally disturbed areas have little contact with the outside human-modified world. Consequently there are fewer avenues of entry (i.e., roads) for alien species—including humans. Still, appearances do count for something, and the ugliness of clearcuts also indicates their destructiveness. Striking examples showing gross erosion scars, acres of barren ground, and poor regeneration are found in the ecologically distinctive Hidden Valley Special Management Area in the Warm Springs Ranger District of the GWNF. Here, on dry low site index land west of the Jackson River, a forest of largely Scarlet, White and Chestnut Oak trees less than 10 inches in diameter was clearcut with disastrous results. Bare sandy eroding soil is exposed over wide areas, while regeneration is confined to widely spaced clumps of crowded and inferior sprouts. These clearcuts are in gross violation of the forest plan and

were done despite citizen objections. Policies of rape and run clearcutting continue on all Appalachian National Forests.

Here we have confined our discussion largely to silvicultural effects of clearcutting on National Forests. The same arguments apply to State and private lands except that in the case of private lands government subsidies are lacking or smaller. Unfortunately, clearcutting on State lands, where it is justified as wildlife habitat improvement (as it is on National Forests), is as yet little challenged. We have barely touched upon the many

negative ecological effects of clearcutting. Many of these have been documented in our widely distributed flier "Clearcuts: Why They're the Worst."

This paper is a contribution of Virginians for Wilderness to Alternative Forest Plans for the George Washington, Jefferson, and Monongahela National Forests. The enthusiastic assistance of Mike Jones, Steve Krichbaum and Gus Mueller is appreciated. Virginians for Wilderness can be reached at



THE BIOSPHERE RESERVE:

A SLEEPING GIANT FOR PROTECTING NATURE?

*Wilderness
Proposals*

by Tony Povilitis, Ph.D

On 26 September 1991, amid much media fanfare, eight "biospherians" filed into an elaborate 3-acre \$150 million greenhouse in the Arizona desert, where they intend to stay for two years. Their purpose is to test the sustainability of an artificial ecosystem called "Biosphere 2," which initially includes some 4000 animal and plant species.

Whatever the fate of Biosphere 2, the real Biosphere is sure to be worse off by 1993 despite the struggling efforts of some people to protect it from GOO (Greed, Overpopulation, Overexploitation). According to some extinction estimates, about 200,000 of its species will perish by then.

While Biosphere 2 has been criticized as a "scientific crapshoot" with a "Noah's ark" mentality, its theme of harmonizing human presence with a complete living ecosystem certainly has merit. But why not test models for integrating people softly into real natural ecosystems as opposed to artificial ones? After all, continued land "development" in the usual way spells doom for the natural world. A "complete" natural ecosystem should include a full range of native species, natural communities, and ecological processes, provide freedom for species to adapt and evolve, and have the potential to "roll with the punches" in response to broad-scale human impacts such as global warming.

TOWARD A NEW ERA IN HUMAN-NATURE RELATIONS?

Fortunately, there already exists a superb model for both conservation and sustainable human use of natural ecosystems. Known as the "biosphere reserve," this model has developed over the past two decades under UNESCO's Man and the Biosphere (MAB) Program (UNESCO 1984, Batisse 1986).

An ideal biosphere reserve includes a conservation core area (or areas) designed to protect and restore even the most sensitive species (including wide-ranging predators) and

ecosystems (MAB 1991). The core area also serves as an undisturbed baseline area by which to evaluate human impacts elsewhere (Leopold 1941, Batisse 1986). (Scientists shudder to think of experiments without controls, but this is exactly how we presently go about "managing" the environment.) The core area concept sharply contrasts the biosphere reserve design from that of other "protected" areas such as national parks, and wildlife refuges.

Surrounding the biosphere reserve's core area is a zone of cooperative management that allows for levels of human activity compatible with the biological conservation of the reserve as a whole. Here, for example, timber would be cut on a strictly sustainable basis, degraded wetlands and grasslands would be restored for wildlife and recreational use, and farming would emphasize crops most adapted to local soil and rainfall conditions. The core area may also be encircled by a smaller buffer zone, where land is managed more gingerly in order to ensure full protection for the core.

Biosphere reserves are intended to show that humans can use land and natural resources without degrading them, and should demonstrate (to the unconvinced) the value of doing so (MAB 1984). Their "logistic" role is to find solutions to environmental, land use, and socio-economic problems arising in this context. Research areas within the biosphere reserve serve to determine or refine diversity-preserving, sustainable ways of using the ecosystem. As appropriate, biosphere reserves should also incorporate traditional land uses (which might, for instance, perpetuate the genetic diversity of farm crops) and special rehabilitation areas (e.g. to recover wetlands and old-growth forests).

Ultimately, the biosphere reserve could provide a "super" model for the Earth as a whole, to the point where reserves *per se* would no longer be needed! (Engel 1985). At that point, Nature would basically take care of itself.

How well do existing biosphere reserves conform to the ideal? Unfortunately, not well.

There are 47 biosphere reserves in the US (290 worldwide), but 35 (about 75%) of them simply coincide with federal lands specifically managed for other, much narrower purposes (MAB 1991). The great majority of these are National Park Service areas (including America's best known parks such as Yellowstone, Big Bend, Glacier, and Denali), or experimental forests or ranges administered by the US Department of Agriculture's Forest Service. Most US biosphere reserves were hastily anointed in the late 1970s.

Still, the MAB program has stuck to its biosphere reserve ideal, zoning concept included (MAB 1991). By incorporating private and municipal lands as well as federal and state lands, more recently designed biosphere reserves have at least made cooperative management zones for conservation a reality. The New Jersey Pinelands Reserve, designated in 1983, is one of a handful of multijurisdictional biosphere reserves.

Apart from the ghost of the make-believe biosphere reserve—the "paper park" problem—is the problem of scale. Small size severely restricts the ability of most current reserves to conserve gene pools, populations, species, and natural communities and landscapes. Thirty-three of 47 of US biosphere reserves are less than 1000 square miles in area, smaller than Big Bend National Park. Even the larger ones, like Yellowstone National Park (3468 sq mi) and Everglades National Park (2188 sq mi), are not by themselves capable of supporting both people and a full range of native species and ecosystem functions.

In the eastern U.S., the Champlain-Adirondack area in New York and Vermont perhaps holds the greatest promise as a real biosphere reserve. Its 8000 square miles make it the second largest U.S. biosphere reserve after Alaska's 12,900 sq mi Noatak, enough theoretically to recover even wolves and cougars. But will its own political history (one largely of NY's Adirondack State Park) forever prevent it from realizing its full potential? The current Champlain-Adirondack Biosphere Reserve badly needs a conservation core area,

and there is relentless pressure to "develop" its private lands, which, in Adirondack Park, comprise some 60% of the land area.

A BIOSPHERE RESERVE MODEL FOR THE WEST

The American West is blessed with some of the richest biological and cultural landscapes in the world. Most, however, are severely threatened by overexploitation and by rapid regional human population growth. Might the biosphere reserve concept come to their rescue?

To test this question, a proposal for a fully functional BIG biosphere reserve has been drafted (details will be available soon). The proposed reserve is centered in the San Juan Mountains of southern Colorado and northern New Mexico, covering some 25,500 square miles (about 11% of Colorado/New Mexico) (Fig. 1).

The decision to evaluate the Greater San Juan Mountain Area sprung from deep local concern about the future of this great landscape. Must its ecological viability and diverse land-based cultures be destroyed (Connelly 1991, Gallagher 1991, Hawley 1991, Nichols 1987)? The biosphere reserve study for the San Juans sought to address two key issues: what kind of biosphere reserve could function as a complete "conservation unit," and what overall economic reemphasis would be needed for both its ecological and social well-being?

The initial work (1987-89) involved data gathering within a 4000 square mile area known as the South San Juans (Fig. 1). With the aid of USGS maps, aerial photos, and agency land-management data, factors such as vegetation cover type, topography, road and livestock densities, human population, agriculture, land ownership, and species-specific needs were evaluated in order to determine the area's ecological potential for restoring endangered and sensitive wildlife. The generally favorable ecological conditions uncovered for this study area led to broader evaluations for the entire Greater San Juan Mountain area. In brief, the overall evaluation led to the following conclusions:

First, with moderate changes in land use (namely livestock and road density reductions), the San Juan Mountains could serve to restore wide-ranging endangered or extirpated species such as grizzly bear, wolverine, river otter, black-footed ferret, gray wolf, lynx, and bison. Initial "seed" populations established in the South San Juans could range from an estimated 50 animals in the case of wolves to over 2600 animals for bison.

Under the biosphere reserve proposal, the conservation core area would include most of the South San Juans plus the mainstem of the

San Juan Mountains contiguous to the northwest, covering a total of about 7300 square miles (Fig. 1). This area appears capable of supporting viable populations of all native wildland carnivores.

Second, the overall biosphere reserve should include the entire San Juan Mountains, the San Luis Valley, and adjacent arid highlands. As a conservation unit, this area would "capture" a broad regional representation of native species, including some 507 mammals, birds, amphibians, reptiles, and fishes (about 58% of the vertebrate species of Colorado/New Mexico). It could serve in the recovery of at least 71 federal or state listed endangered, threatened, or "candidate" species of vertebrates and plants (Table 2), protect unlisted declining species (such as northern goshawk and golden eagle), and conserve a wide range of invertebrates (including endangered endemics such as the Uncompahgre fritillary butterfly). The proposed reserve, in overlapping a major mountain-grassland-desert ecotone, would also protect a broad spectrum of biotic communities, ranging from valley desert scrub through alpine elevational zones.

Finally, the Greater San Juan Mountain area has certain cultural, economic, and land-use characteristics well-suited to a land-conserving future. Among these are:

- * Rich land-based cultures and rural traditions, involving Anglo, Hispanic, and Native American (Jicarilla Apache, Navajo, Taos Pueblo, Southern Ute, and Ute Mountain) communities;

- * A recreation-based economy with important cultural, historic, and natural sites, including Chaco Canyon National Historic Park, Mesa Verde National Park, the Rio Grande Gorge and Wild & Scenic River, Monte Vista and Alamosa National Wildlife Refuges, and Black Canyon of the Gunnison, Great Sand Dunes, and Aztec Ruins National Monuments;

- * Mixed landownership consisting of 62% public, 26% private, and 12% Indian land; and,

- * A low population density of 8.0 persons per square mile (about the same as for northern Minnesota), representing about 5% of the population of Colorado and New Mexico.

Examples of land-conserving activities for an economically viable San Juan Mountains Biosphere Reserve include:

Land-based tourism and recreation — featuring, for example, wolf and buffalo "country," Native American traditions, the "experience" of modern ranching, Anasazi civilization, and other ecological, cultural, and historic landscapes and themes. A recreational network for the core area could expand existing narrow-gauge railroad lines and combine

them with horseback and stagecoach tours.

Sustainable farming and forestry — use of new soil-conserving agricultural methods; marketing of organically-grown produce; retention of traditional crops and varieties; forest products recycling.

Regulated commercial use of selected native species — carefully controlled harvest of plants (pinyon seeds, prickly pear cactus, medicinal herbs, etc.); humane removal and use of bison.

Arts and crafts, and light manufacturing — traditional pottery and churro wool products; Southwestern art and jewelry; outdoor equipment and clothing.

Environmental research and restoration — alternative energy systems, capitalizing on the region's ample wind and solar energy; human ecosystem energy self-sufficiency; innovations in urban and community planning; light rail connecting recreational "hotspots" and towns; use of methane or electric-powered vehicles for local travel.

WHAT WILL POLITICS ALLOW?

Would the U.S. MAB Program (a federal, interagency program, housed in the State Department) seriously consider proposals to establish large, ecologically complete biosphere reserves? It might if citizens and businesses for wildlife, Nature, sustainable living, and traditional land-based cultures coalesced to build the necessary public and political support.

Given these dark days of human narcissism and bad government, the idea of creating giant biosphere reserves may seem far-fetched. A shred of optimism, however, lies in the belief that people are, in fact, increasingly troubled by the continued loss of Nature, and will accept a new vision for America — one where true harmony with Nature prevails in at least some places. The powerful contrast of an ever more urbanized environment (more crowded, polluted, subdivided, homogenized, dehumanized) with the great beauty of America's remaining natural landscapes (healthy, wholesome, free, and wild) can do wonders for human perception. Efforts to gather support should emphasize such contrasts.

Further, indications are that the shortcomings of the biosphere reserve program are well recognized within MAB itself. After all, who wants to waste a good concept? Some bold new efforts are being made to bolster the program, as, for example, with the creation of an extended system of coastal barrier reserves for the East Coast (Ray and Gregg 1991).

What you can do: We have little more

than a decade to "get our collective act together" to save the biosphere, so scarce time remains for a full blossoming of the biosphere reserve concept. Comprehensive proposals for large, biosphere reserves are urgently needed wherever land degrading activities and wild nature meet head on. This important Earth-saving concept hungers for citizen support.

ACKNOWLEDGEMENTS

I thank Martin Caracuel, Reed Noss, Norm Hardy, and the many students from the University of Colorado (Boulder) and the School for Field Studies (Beverly, MA) who helped with the evaluation of the San Juans. Appreciation is expressed to the county, state, and federal agencies that kindly provided information for this work. Finally, I am grateful to the Feazel family of the At Last Ranch for their kind support and encouragement.

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TABLE 1. EXAMPLES OF LAND EXPLOITATIVE ACTIVITIES THAT WOULD BE CURTAILED UNDER A LAND CONSERVING "BIOSPHERE RESERVE" ALTERNATIVE FOR THE GREATER SAN JUAN MOUNTAIN AREA.

Activity	Examples
Land-degrading recreational developments & land subdivisions	A major 4-season ski resort for the East Fork of the San Juan River, sponsored by the U.S. Forest Service; second home sprawl along the Rios Blanco and Chama
Large-scale oil & gas extraction	The Four Corners area (which overlaps into the Greater San Juan Mountain Area)--a major regional source of air and water pollution, and land disturbance
Major water diversions	The proposed mega-diversions from the San Luis Valley to Colorado's urban Front Range (threatening critical wetlands and farming communities); the proposed Animas-La Plata Project, further threatening Colorado squaw-
Logging of threatened forest communities	The controversial Sand Bench cut in old-growth mixed conifer-aspen on the San Juan National Forest
Human population growth	An increase of 13% from 1980-90 for study area counties (a growth rate only slightly under that for CO/NM as a whole)

TABLE 2. Listed vertebrate and plant species that would likely benefit from a biosphere reserve for the Greater San Juan Mountain Area. X indicates species that have been extirpated from the area. ? indicates those whose current presence is uncertain.

MAMMALS:

Gray Wolf *Canis lupus* (X); Grizzly Bear *Ursus arctos* (?); Wolverine *Gulo gulo* (?); River Otter *Lutra canadensis*; Black-footed Ferret *Mustela nigripes* (?); Pine Marten *Martes americana*; Lynx *Felis lynx*; Spotted Bat *Euderma maculatum*; New Mexican Jumping Mouse *Zapus hudsonius luteus*.

BIRDS:

Brown Pelican *Pelicanus occidentalis*; White Pelican *P. erythrorhynchos*; American Peregrine Falcon *Falco peregrinus anatum*; Arctic Peregrine Falcon *F.p. tundrius*; Ferruginous Hawk *Buteo regalis*; Whooping Crane *Grus americana*; Greater Sandhill Crane *G. canadensis tabida*; Bald Eagle *Haliaeetus leucocephalus*; Willow Flycatcher *Empidonax traillii extremus*; Least Tern *Sterna antillarum*; Gray Vireo *Vireo vicinior*; Baird's Sparrow *Ammodramus bairdii*; White-tailed Ptarmigan *Lagopus leucurus*; White-

headed Ibis *Plegadis chihi*; Columbian Sharp-tailed Grouse *Tympanuchus phasianellus columbianus*; Mexican Spotted Owl *Strix occidentalis lucida*; Boreal Owl *Aegolius funeaus*; Western Snowy Plover *Charadrius alexandrinus nivosus*; Mountain Plover *C. montanus*; Long-billed Curlew *Numenius americanus*.

AMPHIBIANS:

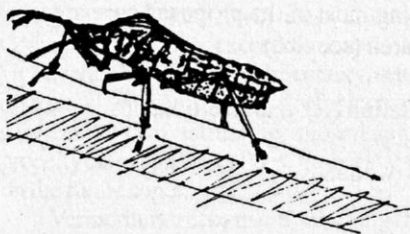
Western Toad *Bufo boreas boreas*

FISHES:

Rio Grande Cutthroat Trout *Salmo clarki virginalis*; Colorado River Cutthroat Trout *S.c. pleuriticus* (X); Rio Grande Sucker *Catostomus plebeius*; Razorback Sucker *Xyrauchen texanus*; Bonytail Chub *Gilia elegans* (X); Roundtail Chub *G. robusta*; Colorado Squawfish *Ptychocheilus lucius*; Rio Grande Silvery Minnow *Hybognathus amarus* (X); Bluntnose Shiner *Notropis simus* (X).

PLANTS:

Colorado Desert-parsley *Lomatium concinnum*; *Neoparrya lithophila*; Spikenard *Aralia racemosa*; Stream Orchid *Epipactis gigantea*; Small-headed Goldenweed



Happlopappus microcephalus; Pagosa Bladderpod *Lesquerella pruinoso*; Mesa Verde Stickweed *Hackelia gracilentia*; Spineless Hedgehog Cactus *Echinocereus triglochidiatus* var. *inermis*; Knowlton's Miniature Cactus *Pediocactus knowltonii*; Grama Grass Cactus *P. papyracanthus*; Mesa Verde Cactus *Sclerocactus mesa-verde*; Hardwall Cactus *S. whipplii* var. *heilii*; Little Beeplant *Cleome multicaulis*; Altai Cotton-grass *Eriophorum altaicum* var. *neogaeum*; Cliff-palace Milkvetch *Astragalus deterior*; Mancos Milkvetch *A. humillimus*; Skiff Milkvetch *A. microcymbus*; Monument Milkvetch *A. monumentalis*; Naturita Milkvetch *A. naturitensis*; Arbores Milkvetch *A. oocalycis*; Ripley's Milkvetch *A. ripleyi*; Schmoll's Milkvetch *A. schmolliae*; Taos Milkvetch *A. puniceus* var. *gertrudis*; Dwarf Rattlesnake-plantain *Goodyera repens*; Wood Lily *Lilium philadelphicum*; Northern Twayblade *Listera borealis*; Black Canyon Gilia *Gilia penstemonoides*; Aztec Gilia *G. formosa*; Pagosa Gilia *Ipomopsis polyantha*; Clove Phlox *Phlox caryophylla*; Hoary Willow *Salix candida*; Adobe Beard-tongue *Penstemon retrorsus*.

Sources include: the Colorado Natural Areas and the New Mexico Natural Heritage Programs (1991); Colorado Native Plant Society 1989. Rare plants of Colorado, Rocky Mountain Nature Association, Estes Park; N.M. Game and Fish Dept. 1988. Handbook of species endangered in New Mexico. Santa Fe; New Mexico Plants Protection Advisory Committee 1984. A handbook of rare and endangered plants of New Mexico. Univ. of New Mexico Press, Albuquerque.

LATE NOTE:

As a result of new evidence that grizzly bears survive in the South San Juan Mountains, Tony Povilitis has petitioned the US Forest Service to temporarily close about 85,000 acres of the San Juan and Rio Grande National Forests where the bears live. If the FS agrees, the measure would be in effect from April-November and until the public can fully consider options for grizzly bear recovery. To support the closure and to request that the Forest Service work to restore a viable grizzly bear population, write to Gary E. Cargill, Regional Forester, US Forest Service, 11177 W. 8th Ave., Box 225127, Lakewood, CO 80255. Life Net would appreciate a copy of any letters.

About Life Net

POB 66, MONTEZUMA, NM 87731

Life Net is a new non-profit organization designed to help people protect wildlife and Nature. Its premise is that without far greater and more aggressive citizen involvement, there's little hope for the natural world. After all, conservation organizations alone can't save it. So, in the words of Arne Naess, "Will the (citizen) defenders of Nature please rise?"

Life Net emphasizes the critical, interlocking areas of wildlife and habitat protection, land conservation planning, and the promotion of humane, ecologically sound living.

Please write or call Life Net (505-454-8913) if you are interested in 1) working to conserve wildlife with our assistance; 2) sponsoring an activist under our *Endangered Wildlife Guardian Program*; or 3) serving on our Board of Professionals (persons with expertise in public relations and media, "Earth-friendly" technology and business, land use planning, land trusts and preservation, and law are especially invited to contact us). Life Net is a membership, 501(c)(3) federal tax-exempt organization.

—Tony Povilitis, Ph.D.

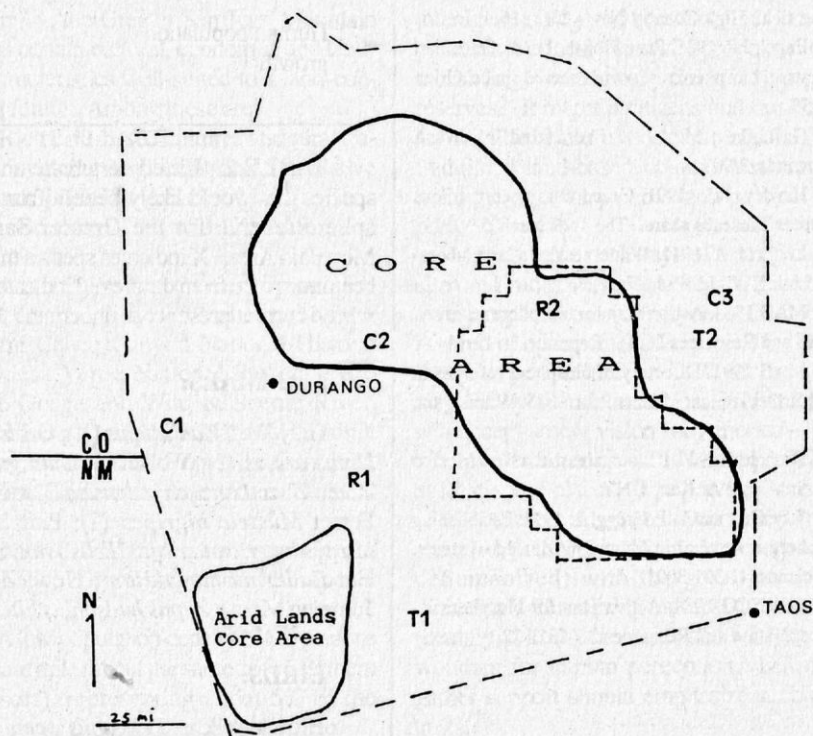


Figure 1. A biosphere reserve mode for the Greater San Juan Mountain Area. The zone (enclosed by dashed lines) overlapping most of the proposed core area represents the original South San Juans study area (see text).

Examples of special conservation (C), rehabilitation (R), and traditional use (T) areas are labeled as follows:

C1 imperiled cacti; C2 old growth forest; C3 wetlands.

R1 riparian; R2 forest.

T1 dryland farming; T2 irrigated farming.

The Northeast Kingdom: Under Siege and Shrinking Fast

by Gary Burnham

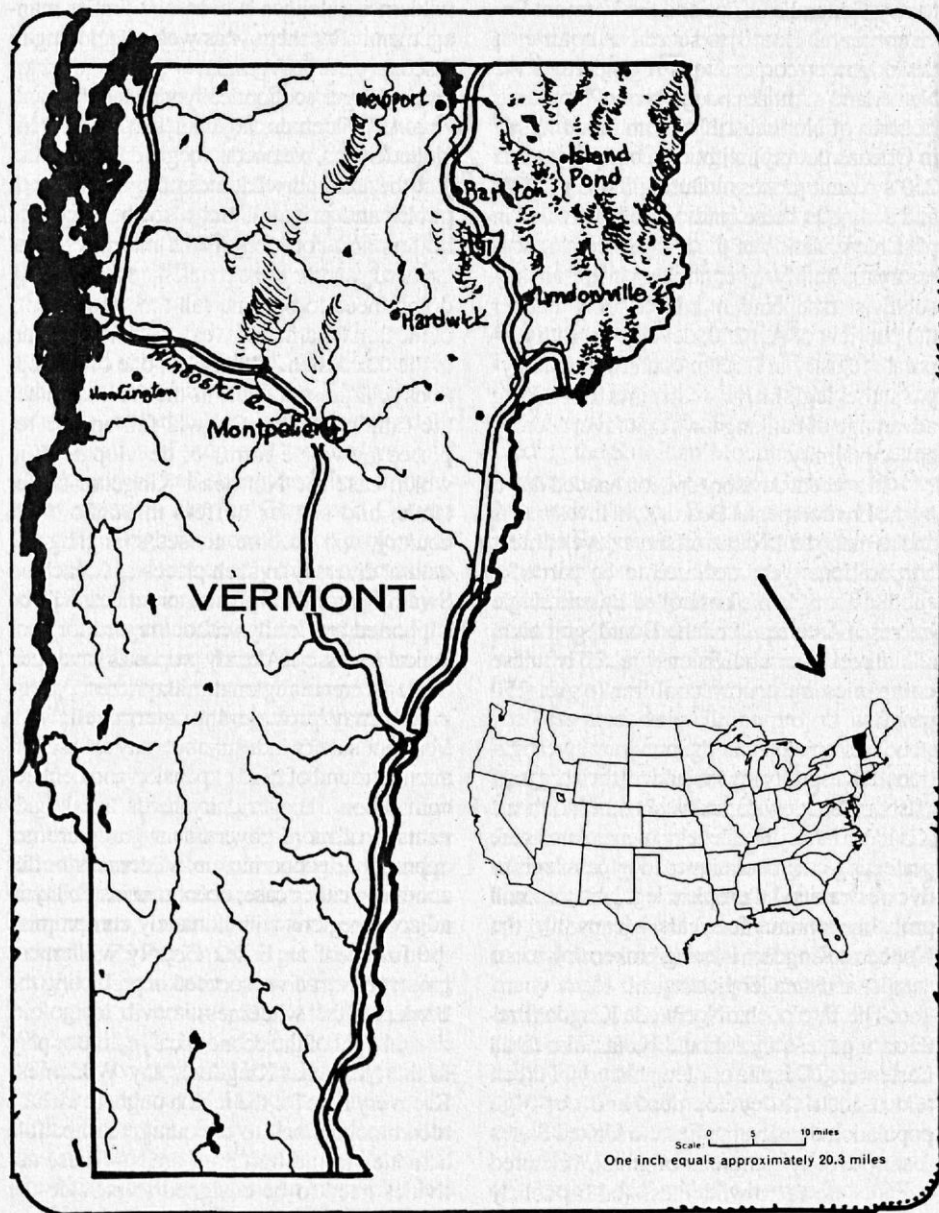
Vermont's Northeast Kingdom has long been considered one of the last bastions of undeveloped countryside in the state. But this traditional impression is eroding fast under the development that has taken place during the past decade.

Of the three counties that comprise the Kingdom, only Essex County still has a population density significantly below the state's average. Essex is one of the least densely roaded counties in the entire Northeastern United States. Only one major east-west road (route 105) divides this 671 square mile county, leaving two large parcels with only sparse networks of unimproved gravel roads.

Essex County includes the 50,000 acre Meachum Swamp/Yellow Bog roadless area, refuge for the once threatened Vermont Moose population. Even though virtually all of this de facto wilderness is private, Meachum Swamp is the best hope for a biological bridge between the large public holdings in New Hampshire's White Mountain National Forest to the east and Vermont's Green Mountain National Forest to the west.

Until recently this isolated corner of the Northeast Kingdom was buffered by the relatively stable economies and populations of the other two Northeast Kingdom counties. But now the agricultural communities of Caledonia and Orleans counties are beginning to feel the strain of downstate development pressure. Declining farm profits, access via Interstate 91, and a relative abundance of inexpensive land, all make the Northeast Kingdom attractive not just to vacationers and second home buyers, but to large-scale commercial developers as well. The population growth rate of Caledonia County will probably exceed the state's very high average by the turn of the century, setting off a classic spiral effect: the cry for increased services and infrastructure, the raising of property taxes and land values, further stresses on the rural economies...

Vermonters recognized the danger of uncontrolled development early on and took



measures to blunt its effects. Act 250, signed into law in 1970, was one such measure. Designed as a "...comprehensive state capability and development plan and land use plan...", the act has gone a long way toward squelching "cut and run" development schemes. According to Stephanie Kaplan, executive director of the Vermont Environmental Board, Act 250 has helped to drive Patten Corpora-

tion, one of the most notorious real estate developers in the Northeast, out of Vermont. The act regulates the number of subdivision units any person or corporation can create without submitting an environmental and economic impact review.

Act 250 gives Vermonters some braking power against the headlong drive to develop rural lands, but that drive is powerful — some

would say inexorable — and in the Northeast Kingdom, with its fragile farming economy and its proximity to the urban and commercial centers of the Northeast (e.g. Boston is less than 6 hours away by car), Act 250 can only slow the development.

Real estate speculation in the Northeast Kingdom continues despite legislative efforts to control it. In one particularly sinister case currently under investigation by the State Attorney General's Office and the Vermont Environmental Board, a secretive coterie of development corporations registered in the Netherland's Antilles bought tens of thousands of acres of Northeast Kingdom land (mostly in Orleans county) without submitting to Act 250's permit process. During the late 1970s and early 80s, these lands were subdivided in possible violation of the act. Since it is necessary to identify the controlling interest in any subdivision scheme in order to bring it under the purview of Act 250, developers with corporate registry in foreign countries could bypass the legislative restraints by taking advantage of banking laws that favor secrecy and anonymity.

In a recent advisory opinion handed down by the Environmental Board, Zuni Investments and as many as 15 other offshore development corporations were declared to be part of a subdivision scheme controlled by one single interest. As a result of the Board's opinion, all the previous subdivisions created by these companies must now conform to Act 250 permits.

This opinion and the previous investigations have pretty much ended the threat of offshore "shadow companies" to the Northeast Kingdom lands. But development interests are perfecting other techniques to bypass legislative restraints. Complex legal battles will probably continue for years. Meanwhile, the Northeast Kingdom is being broken down into smaller and smaller pieces.

The fate of the Northeast Kingdom reflects a pattern that should be familiar to all Easterners. Despite our long history of urban and industrial development and our high population density, the Eastern United States features many hundreds of small, fractured tracts of de facto wilderness (both publicly owned and private). Somehow, these isolated refugia have survived our 350 year long assault on the land. Some, like the highland swamps of the Northeast Kingdom, have been too forbidding to warrant settlement or more than cursory resource extraction; some were ravaged and abandoned long ago and are now achieving a semblance of their former value as wildlife habitat. A common feature of these lands, and a possible factor in their continued survival, is their partial envelopment by rela-

tively stable, small-scale agricultural communities such as the family dairy farms, woodlots, and sugar bushes of the Northeast Kingdom. By historical accident, these places mimic, at a smaller scale, modern conservation design for wilderness preserves: core wild areas buffered by a landscape of low-impact human use. Obviously, this is not a perfect mimicry. Intensive, large-scale dairy and beef production is not compatible with adjacent wilderness; neither is even-age timber management. But then — as we're beginning to discover here in Vermont — these activities are no longer economically viable either.

As Wilderness advocates in the Eastern United States, we need to begin defending not just the isolated wilderness fragments (both public and private), but also the potential buffers and corridors in the matrix of rural lands surrounding the roadless remnants. We do not need to become full-time proponents of the family farm, but we do need to take part in the discussion. Otherwise, one of two options will present itself in the future: either the farming economies will fail and be replaced by worse forms of development, in which case the Northeast Kingdom buffer lands, and similar buffers throughout the country, will become nooses strangling the natural diversity in such places as Meachum Swamp; or existing rural practices will be supported artificially without regard for ecological necessity. Already proposals have been made to create regional milk price supports, which may provide short-term relief for Vermont's dairy industry, but may also set off another round of herd expansion and debt accumulation. Bigger dairy herds to take advantage of more government gravy are not appropriate economies in wilderness buffer zones. In either case, economic instability in adjacent regions will ultimately compromise the future of an Essex County wilderness preserve even if we succeed in protecting the borders of that wilderness.

In light of the economic dynamic at play in the Northeast Kingdom, any Wilderness Recovery Plan for the region ought to include recommendations to encourage compatible activities in the buffering areas. These activities need to be designed to provide the stability and sustainability necessary to resist the widespread economic opportunism in the region.

The following is a list of some of the priorities that need to be included in a Northeast Kingdom Wilderness Recovery Plan.

1. The Essex County wild lands, the Northeast Highlands, Meachum Swamp/Yellow Bog roadless area should be acquired and protected as a designated Wilderness Area.
2. Route 105 dividing the Meachum

Swamp area from the Paul Stream/Ferdinand Bog area to its south should be closed.

3. A Wildlife Corridor into New Hampshire's Blue Mountain Roadless Area should be established.

4. The counties of Caledonia and Orleans should be declared a rural use buffer zone. Provisions should be made to ensure that land use practices here are ecologically appropriate. This might entail the following:

- a) support for low-impact organic farming, sustainable yield forestry, and small-scale wood products industries (e.g. cabinet and furniture making);

- b) tax incentives and funding programs to encourage farmers and woodlot owners to allow portions of their land to revert to natural succession;

- c) funds to start wilderness recovery programs on private agricultural lands. In short, private sector wildlife protection strategies should be promoted using the knowledge and skills of the people living in the region; government agencies should support these programs in order to bolster increasingly marginal rural economies.

The goal of these particular recommendations is to show how an environmental strategy can promote stable economies and stable populations in wilderness buffer areas in ways that incorporate the human communities into the overall wilderness recovery strategy. To ignore these issues will only allow economic pressures from outside the region to foster attitudes and practices inimical to Wilderness.

Gary Burnham, a PAW activist living in Vermont, is compiling wilderness recovery proposals for the Northeast.



Southern Rockies Ecosystem Project

by Roz McClellan

A sweep of the fingertips across a raised relief map of North America shows the Southern Rockies to be a high, sharply broken swirl of jagged mountain massifs and valleys. This wrinkled and layered landscape harbors some of the richest ecosystem diversity on the continent. High topographic relief, combined with sharp variations in slope, aspect, soils, and moisture, has given rise to no less than fourteen different, closely juxtaposed Bailey-Kuchler potential vegetation types. Alpine tundra and old-growth spruce-fir forests, mountain parks and willow carrs, pinyon-juniper, sagebrush, saltbrush, and high desert plateaus, redrock canyons, lush riparian areas, wetlands, and grasslands, can often be found within a few thousand elevational feet of each other. All are gathered in a region bounded on the north by Wyoming desert, on the east by the Great Plains, on the south by the San Pedro Mountains south of Santa Fe, and on the west by the Colorado Plateau.

Steep and inaccessible topography has its benefits; much of the region remains undeveloped. According to *The Big Outside*, the Southern Rockies bioregion, including parts of Colorado, Wyoming and New Mexico, claims 27 roadless areas over 100,000 acres, the highest concentration (if not highest acreage) of forested roadless areas outside of the Northern Rockies. Yet, as roads are punched through its mountain ranges, jetports are built in mountain valleys, and timber shortages in the Pacific Northwest drive logging companies to seek lumber in the Southern Rockies, the region's natural systems are succumbing to the dictates of economic systems.

High timber targets are pushing the Forest Service to log its last forested roadless areas. FS Region 2 timber plans show that virtually every unprotected roadless area in the region will have been roaded by the end of the decade. Mineral development, water projects, and grazing also continue to eat away at the region's pristine ecosystems.

Even more permanent than extraction in

its impacts on air, water, and vegetation, is the urban overlay settling down upon the unspoiled valleys of the Southern Rockies. With recreation being touted as the happy balance between preservation and development, destination resort development is covering elk winter range with condominiums and valley floors with haze. Aspen, Vail, Telluride, Winter Park and Taos have become the meccas of an international elite.

Backcountry is being managed more and more like urban parkland, while mountain habitat is treated as scenic backdrop for the lucrative, motorized tourism business and for a proliferation of proposed "scenic byways." Thanks to jets, heli-skiing, and river straightening wonders like the Glenwood Canyon "Ben Hur" highway construction project, the new urban grid makes only minor concessions to the inconvenient vagaries of topography.

Yet, even as the natural systems of the Southern Rockies shrink due to urban encroachment, conservation vision needs to expand, to encompass the protection not just of individual forests and river valleys, but of the whole ecosystems of which they are a part. Right now land management agencies and conservationists alike typically look no farther than the immediate site in weighing the impacts of proposed ski areas, timber sales, water projects, and other development. For example, FS Region 2 Ranger Districts often justify old-growth timber sales as increasing biological diversity within a timber stand, disregarding the loss of biodiversity the sale will cause on a regional level. Roading an old-growth stand may add species richness in the form of magpies, fireweed, and deer to the existing deep forest species composition of that site. However, it represents an irreparable loss of old-growth diversity on a landscape level. Proposals need to be evaluated for their impacts on individual sites not in isolation, but as functional components of larger, biologically interdependent natural systems.

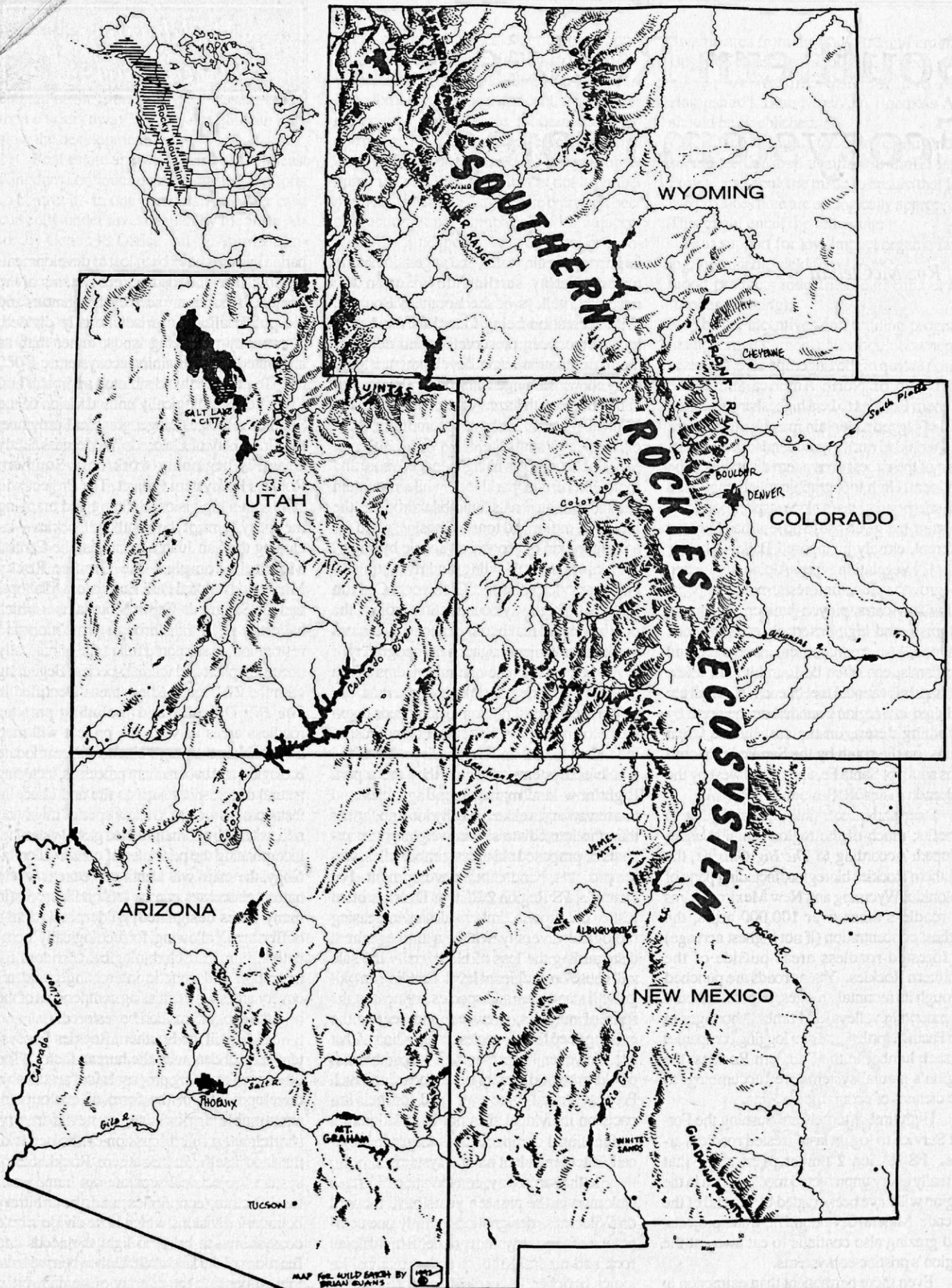
In the same way, conservation efforts in Colorado in the past ten years have focused on Wilderness designation for only one component of the ecosystem gradient: high alpine rock and tundra. In the process, many biologically richer, lower elevation forest and ri-

parian systems have been lost to development. By and large, the roadless ecosystems of the Southern Rockies are seen by the agencies and the public alike as jurisdictionally divided, commodity-producing lands, rather than as integrated, self-sustaining ecosystems.

To counter this disjointed approach and to create an ecologically unified vision of the Southern Rockies biogeographical province, the University of Colorado Wilderness Study Group is beginning work on a Southern Rockies Ecosystem Project. The Project will start with a big vision, defining and mapping the ecosystems of the Southern Rockies—including the San Juan Mountains, the Central Mountain complex, the Greater Rocky Mountain National Park Ecosystem, Flattops, and the Sangre de Cristo Mountains—which have the potential, through protection and restoration, to support a full range of naturally occurring plant and animal species. Beginning with the 27 large roadless areas identified in *The Big Outside*, and including smaller roadless areas as well, the project will map areas of large enough size to accommodate ecological and evolutionary processes, including natural disturbances such as fire and insect infestations, as well as to allow species migration necessitated by human-caused global warming. Incorporating the principles of conservation biology, the maps will identify core areas where natural processes can be left undisturbed (in many cases designated Wilderness Areas), buffer areas allowing for ecologically compatible human uses, biological corridors for migration and genetic interchange, and recovery areas where missing components of the original ecosystems can be restored.

How will the Southern Rockies Ecosystem Project deal with the human factor? Too often, well meaning proposals for "sustainable development," in the form of ecotourism, sustainable agriculture, or new forestry, shortcircuit a full discussion of the needs of the land itself. The Southern Rockies Ecosystem Project will separate out human cultural factors, economics, and the arbitrary boundary divisions which now divide whole ecosystems, to bring to light the needs and functions of the land itself. Only when we have looked beneath the overlay of human settle-

Wilderness
Proposals



MAP FOR WILD EARTH BY BRIAN GUANS

ment patterns to discover the underlying patterns and relationships of the land will it be possible to accurately assess the ecological implications of various forms of economic activity.

As a first step in identifying large ecosystems of the Southern Rockies, the Wilderness Study Group is mapping RARE II boundaries on Forest Service 1:126,720 (1/2"=1 mi.) scale recreation maps, with overlays showing how past, current, and future timber sales are impacting these roadless areas. The next step will be to add roadless areas on BLM and private lands. Once all the region's remaining roadless areas have been delineated, overlays will be used to show vegetation and habitat types, soils, moisture and elevation gradients in order to build a comprehensive picture of each large ecosystem.

When finished, these maps, along with accompanying Big Wilderness proposals, will make it easier for the public to visualize and locate the native ecosystems of the Southern Rockies. The maps will provide a scientifically compelling basis for understanding the landscape level impacts of proposed development and for responding to such proposals.

Finally, the vision of Big Wilderness for the Southern Rockies staked out by the Southern Rockies Ecosystem Project will broaden the parameters of the current environment-economics debate. It will provide an expanded agenda for the conservationists.



To launch the Southern Rockies Ecosystem Project, the CU Wilderness Study Group is sponsoring a conference on the Southern Rockies Bioregion which will take place in Boulder, Colorado, the weekend of 24-26 April 1992. Confirmed speakers so far include Dave Foreman, Chris Maser, Reed Noss, and George Wuerthner. The conference will join wilderness activists and scientists in defining ecosystem protection and restoration strategies for the Southern Rockies and other regions in North America.

Conference registration fee is \$20. Make checks payable to "The University of Colorado" and send them to: Attention: Kelly Treese, CU Wilderness Study Group, Campus Box 207, UMC 174, University of Colorado, Boulder, Colorado, 80309. For more information call (303)492-6870 or (303) 492-8308.

Roz McClellan is a Southern Rockies resident and a member of the North American Wilderness Recovery Strategy steering committee.

Southern Rockies Ecosystems Conference
Working Towards the Vision of Native Wildland Recovery
April 24-26, 1992

Bringing scientist and activist together to begin developing and implementing bioregional policies to restore and sustain Southern Rockies wildlands.
 Guests include: Reed Noss, consultant in biodiversity conservation,
 Dave Foreman, co-founder of Earth First!,
 Michael Soule, founder of the Society for Conservation Biology,
 Lone Wolf Circles, poet and deep ecologist,
 Chris Maser, private consultant in sustainable forestry.
 The conference will take place on the University of Colorado Boulder campus.
 Registration fee is \$20 for non-students and \$10 for non-Boulder students.

For more information contact:
 CU-Wilderness Study Group
 UMC 183, Campus Box 207, University Of Colorado
 Boulder, CO 80309
 (303) 492-6870

Hummingbird Saddle

A universe in each exhalation
 it is complete
 it is enough
 to lie with my animal scent
 curled against the chill.
 Warm bag darkness
 and the benevolence of trees,
 cast-off cushions of needles & leaves
 allow remembrance of the mammal time,
 the time before.

It is enough,
 dawn crawling in through receding pools of night,
 through throats of birds
 and evaporating stars.

—Suzanne Freeman, Austin, TX

CONSERVATION IS GOOD WORK

by Wendell Berry

There are three kinds of conservation currently operating: the first is the preservation of places that are grandly wild or "scenic" or in some other way spectacular. The second is what is called "conservation of natural resources"—that is, of the things of nature that we intend to use: soil, water, timber, and minerals. The third is what you might call industrial trouble-shooting: the attempt to limit or stop or remedy the most flagrant abuses of the industrial system. All three kinds of conservation are inadequate, separately and together.

SAVING THE SPECTACLES

Right at the heart of American conservation, from the beginning, has been the preservation of spectacular places. The typical American park is in a place that is "breath-takingly" beautiful, and of little apparent economic value. Mountains, canyons, spectacular land-forms, geysers, waterfalls—these are the stuff of parks. There is, significantly, no prairie national park. Wilderness preserves, as Dave Foreman points out in his article "The New Conservation Movement" (*Wild Earth* #2), tend to include much "rock and ice" and little marketable timber. Farmable land, in general, has tempted nobody to make a park. Wes Jackson has commented with some anxiety on the people who charge blindly across Kansas and eastern Colorado, headed for the mountains west of Denver. These are nature lovers and sight-seers, but they are utterly oblivious of, or bored by, the rich natural and human history of the plains. The point of Wes Jackson's anxiety is that the love of nature that limits itself to the love of places that are "scenic" is implicitly dangerous, because it tends to exclude unscenic places from nature and from the respect that we sometimes accord to nature. This is why so much of the landscape that is used is also abused; it is used solely according to standards dictated by the financial system, not at all according to standards dictated by the nature of the place.

Moreover, as we are beginning to see, it will be extremely difficult to make enough parks to preserve vulnerable species and the health of ecosystems or large watersheds.

CONSERVING RESOURCES

"Natural resources," the parts of nature that we use, are the parts outside the parks and preserves (which, of course, we also use). But "conservation of natural resources" is now in confusion because it has been much lip-served but not much thought about or practiced. Part of the confusion is caused by thinking of "natural resources" as belonging to one category when, in fact, they belong to two: surface resources, like soils and forests, that can be preserved in use; and underground resources, like iron or oil, that cannot be. The one way to conserve the mineable fuels and materials that can only be exhausted by use is to limit use. At present, we have no intention of limiting such use, and so we cannot say that we are interested in the conservation of exhaustible resources. Surface or renewable resources, on the other hand, can be preserved in use so that their yield is indefinitely sustainable. Sustainability is a hopeful concept, not only because it is a present necessity, but because it has a history. We know, for example, that some agricultural soils have been preserved in continuous use for several thousand years. We know, moreover, that it is possible to improve soil in use. And it is clear that a forest can be used in such a way that it remains a forest, its biological communities intact, and its soil undamaged, while producing a yield of timber. But the methods by which exhaustible resources are extracted and used have set the pattern also for the use of renewable resources, with the result that, now, soils and forests are not merely being used, but are being used up, exactly as coal seams are used up. Since the sustainable use of renewable resources probably depends upon the existence of settled, small local economies and communities capable of preserving the local knowledge necessary for good farming and forestry, there is no easy or quick answer to the problem of the exhaustion of renewable resources. It's unlikely that we can conserve natural resources so long as our extraction and

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use of the goods of nature are wasteful and improperly scaled, or so long as these resources are owned or controlled by absentees, or so long as the standard of extraction and use is profitability rather than the health of natural and human communities.

REACTING TO OUTRAGES

Because we are living in an era of ecological crisis, it is understandable that much of our anxiety and energy is focused on exceptional cases, the outrages and extreme abuses of the industrial economy: global warming, the global assault on the last remnants of wilderness, the extinction of species, oil spills, chemical spills, Love Canal, Bhopal, Chernobyl, the burning oil fields of Kuwait. But a conservation effort that concentrates only on the extremes of industrial abuse tends to suggest to the suggestible that the only abuses are the extreme ones, when, in fact, the earth is probably suffering more from many small abuses than from a few large ones. By treating the spectacular abuses as exceptional, the powers that be would like to keep us from seeing that the industrial system (capitalist or communist or socialist) is in itself, and by necessity of all of its assumptions, extremely dangerous, and that it exists to support an extremely damaging way of life. The large abuses exist within, and because of, a pattern of smaller abuses. Much of the Sacramento River is dead now because a carload of agricultural poison was spilled into it. The powers that be would like us to believe that this colossal "accident" was an exception in the general pattern of safe use. Diluted and used according to the instructions on the label, they will tell us, this product is harmless. They neglect to acknowledge any part of the pattern of implications that surrounds the accident: that if this product is to be used in dilution almost everywhere, it will have to be manufactured, stored and transported in concentration somewhere; that even in "harmless" dilution such chemicals contaminate the water, the air, the rain, and the bodies of animals and people; that when such a product is distributed to the general public, it will inevitably be spilled in concentration in large or small quantities, and that such "accidents" are an-

ticipated, discounted as "acceptable risk," and charged to nature and society by the powers that be; that such chemicals are needed, in the first place, because the scale, the methods, and the economy of American agriculture are all monstrously out of kilter; that such chemicals are used to replace the work and intelligence of people forced out of farming by free-market economies; and that such a deformed agriculture is made necessary in the first place, by the public's demand for a diet that is at once cheap and luxurious—too cheap to support adequate agricultural communities or good agricultural methods or good maintenance of agricultural land, and yet so goofily self-indulgent as to demand, in every season, out-of-season food produced by earth-destroying machines and chemicals. We tend to forget, too, in our understandable and necessary outrage at the government-led attack on the public lands and the last large tracts of wilderness, that for the very same reasons and to the profit of the very same people, thousands of woodlots are being abusively and wastefully logged.

Here, then, are three kinds of conservation, all of them urgently necessary, and all of them failing. Conservationists have won enough victories to give them heart and hope and a kind of accreditation, but despite all their efforts, our soils and waters, forests and grasslands are being used up. Kinds of creatures, kinds of human life, good, natural and human possibilities are being destroyed. Nothing now exists anywhere on earth that is not under threat of human destruction. Poisons are everywhere. Junk is everywhere.

REVIVING SMALL ECONOMIES

These dangers are large and public, and they inevitably cause us to think of changing public policy. This is good, so far as it goes. There should be no relenting in our efforts to influence politics and politicians, but in the name of honesty and sanity we must recognize the limits of politics. Think, for example, how much easier it is to improve a policy than it is to improve a community. But some changes required by conservation cannot be politically made, and some necessary changes probably will have to be made by the governed without the help or approval of the government.

I must admit here that my experience over more than twenty years as part of an effort to influence agricultural policy has not been encouraging. Our arguments directed at the government and the universities by now remind me of the ant crawling up the buttocks of the elephant with love on his mind. We have not made much impression. My conclusion, I imagine, is the same as the ant's, for these great projects, once undertaken, are hard to abandon: we have got to get more radical.

However destructive may be the policies of the government and the methods and products of the corporations, the root of the problem is always to be found in private life. We must learn to see that every problem that concerns us as conservationists always leads straight to the question of how we live. The world is being destroyed—no doubt about it—by the greed of the rich and powerful. It is also being destroyed by popular demand. There are not enough rich and powerful people to consume the whole world; for that, the rich and powerful need the help of countless ordinary people. We acquiesce in the wastefulness and destructiveness of the national and global economies by acquiescing in the wastefulness and destructiveness of our own households and communities. If conservation is to have a hope of succeeding, then conservationists, while continuing their effort to change public life, are going to have to begin the effort also to change private life.

The problems are caused, not just by other people, but by ourselves. And this realization should lead directly to two more. The first is that solving these problems is not work merely for so-called environmental organizations and agencies, but also for individuals, families, and local communities. We are used to hearing about turning off unused lights, putting a brick in the toilet tank, using water-saving shower heads, setting the thermostat low, sharing rides, and so forth—pretty dull stuff. But I'm talking about actual jobs of work, that are interesting because they require intelligence, and because they are accomplished in response to interesting questions: What are the principles of household economy, and how can they be applied under present circumstances? What are the principles of a neighborhood or a local economy, and how can they be applied now? What do people already possess in their minds and bodies, in their families and neighborhoods, in their dwellings and in their local landscape, that can replace what is now being supplied by our consumptive and predatory so-called economy? What that we are now paying dearly for can we supply to ourselves cheaply or for nothing? To answer such questions requires more intelligence and involves more pleasure than all the technological breakthroughs of the last two hundred years.

Second, the realization that we ourselves, in our daily economic lives, are causing the problems we are trying to solve ought to show us the inadequacy of the language we are using to talk about our connection to the world. The idea that we live in something called "the environment," for instance, is utterly preposterous. This word came into use because of the pretentiousness of learned experts who were

embarrassed by the religious associations of "creation" and who thought "world" too mundane. But "environment" means that which surrounds or encircles us; it means a world separate from ourselves, outside us. The real state of things, of course, is far more complex and intimate and interesting than that. The world that environs us, that is around us, is also within us. We are made of it; we eat, drink, and breathe it; it is bone of our bone and flesh of our flesh. It is also a Creation, a holy mystery, made for and to some extent by creatures, some of whom are humans. This world, this Creation, belongs in a limited sense to us, for we may rightfully require certain things of it—the things necessary to keep us fully alive as human beings; we also belong to it, and it makes certain rightful claims upon us: that we care properly for it, that we leave it undiminished, not just to our children, but to all the creatures who will live in it after us.

None of this intimacy and responsibility is conveyed by the word "environment." That word is a typical product of the old dualism that is at the root of most of our ecological destructiveness. So, of course, is "biocentrism." If life is at the center, what is at the periphery? And, for that matter, *where* is the periphery? "Deep ecology," another bifurcating term, implies that there is, a couple of layers up, a shallow ecology that is not so good, or that an ecosystem is a sort of layer cake with the icing on the bottom. Not only is this language incapable of giving a true description or suggestion of our relation to the world; it is also academic, artificial, and pretentious. It is the sort of language used by a visiting expert who does not want the local people to ask any questions. (I am myself an anthropobioidiointerpenetrant and a gastrointeroenvironmentalist, but I am careful to say so only in the company of other experts.)

No settled family or community has ever called its home place an "environment." None has ever called its feeling for its home place "biocentric" or "anthropocentric." None has ever thought of its connection to its home place as "ecological," deep or shallow. The concepts and insights of the ecologists are of great usefulness in our predicament, and we can hardly escape the need to speak of "ecology" and "ecosystems." But the terms themselves are culturally sterile. They come from the juiceless, abstract intellectuality of the universities that was invented to disconnect, displace, and disembodify the mind. The real names of the environment are the names of rivers and river valleys, creeks, ridges and mountains, towns and cities, lakes, woodlands, lanes, roads, creatures, and people. The real name of our connection to this everywhere different and differently named earth is

“work.” We are connected by work even to the places where we don’t work, for all places are connected; it is clear by now that we cannot exempt one place from our ruin of another.

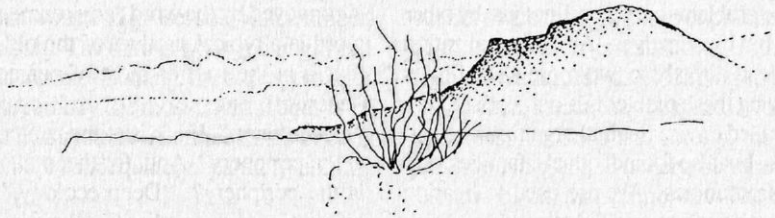
The name of our *proper* connection to the earth is “good work,” for good work involves much giving of honor. It honors the source of its materials; it honors the place where it is done; it honors the art by which it is done; it honors the thing that it makes, and the user of the made thing. Good work is always modestly scaled, for it cannot ignore either the

need by buying them; most of us know only vaguely, if at all, where those things come from; and most of us know not at all what damage is involved in their production. We are almost entirely dependent upon an economy of which we are almost entirely ignorant. The provenance, for example, not only of the food we buy at the store, but of the fertilizers, fuels, and other materials necessary to grow, harvest, transport, process, and package it, is almost necessarily a mystery to us. To know the full economic history of a head of

other nations or regions. An economy without limits is an economy without discipline. All the critical questions affecting our use of the earth are left to be answered by “the market” or the law of supply and demand, which proposes no limit upon either supply or demand.

Conservationists of all kinds would agree, I think, that no discipline, public or private, is implied by the industrial economy, and that none is practiced by it. The implicit wish of the industrial economy is that producers might be wasteful, shoddy, and irresponsible, and that consumers might be extravagant, gullible, and irresponsible. To fulfill this wish, the industrial economy employs an immense corps of hiring politicians, publicists, lobbyists, admen, and adwomen. The consequent ruin is notorious; we have been talking about it for generations; it brought conservation into being. And conservationists have learned very well how to address this ruin as a public problem. There is now no end of meetings and publications in which the horrifying statistics are recited, usually to the end that pressure should be put on the government to do something. Often, the pressure has been put on and the government has done something. The government, however, has not done enough, and may never do enough. It may be that the government cannot do enough. The government’s disinclination to do more is explained, of course, by the government’s bought-and-paid-for servitude to interests that do not want it to do more. But there may also be a limit of another kind: a government that could do enough, assuming it had the will, would almost certainly be a government radically and unpleasantly different from the one prescribed by our constitution. A government undertaking to protect all of nature that is now abused or threatened would have to take total control of the country. Police and bureaucrats—and opportunities for malfeasance—would be everywhere. To wish only for a public or a political solution to the problem of conservation may be to wish for a solution as bad as the problem and still unable to solve it.

The way out of this dilemma is to understand the ruin of nature as a problem that is both public and private. The failure of public discipline in matters of economy is only the other face of the failure of private discipline. If we have worked at the issues of public policy so long and exclusively as to bring political limits into sight, then let us turn, not instead but also, to issues of private economy and see how far we can go in that direction. It is a direction that may take us farther, and produce more satisfactory and lasting results, than the direction of policy.



nature of individual places or the differences between places; and it always involves a sort of religious humility, for not everything is known. Good work can be defined only in particularity, for it must be defined a little differently for every one of the places and every one of the workers on the earth.

The name of our present society’s connection to the earth is “bad work”—work that is only generally and crudely defined, that enacts a dependence that is ill understood, that enacts no affection and gives no honor. Every one of us is to some extent guilty of this bad work. This guilt does not mean that we must indulge in a lot of breast-beating and confession; it means only that there is much good work to be done by every one of us, and that we must begin to do it. All of us are responsible for bad work, and not so much because we do it ourselves (though we all do it) as because we have it done for us by other people. And here we are bound to see our difficulty as almost overwhelming. How, in this global economy, are we to render anything like an accurate geographic account of our personal economies? How do we take our lives from this earth that we are so anxious to protect and restore to health? What proxies have we issued, and to whom, to use the earth in our behalf?

Most of us get almost all the things we

supermarket cauliflower would require an immense job of research. To be so completely and so ignorantly dependent on the present abusive food economy certainly defines us as earth abusers. It also defines us as potential victims.

Living as we now do in almost complete dependence on a global economy, we are put inevitably into a position of ignorance and irresponsibility. No one can know the whole globe. We can connect ourselves to the globe as a whole only by means of a global economy which, without knowing the earth, plunders it for us. The global economy (like the national economy before it) operates on the superstition that the deficiencies or needs or wishes of one place may be safely met by the ruination of another place. To build houses here, we clear-cut forests there. To have heat and air-conditioning here, we strip-mine the mountains there. To drive our cars here, we sink our oil wells there. It is an absentee economy. Most people aren’t using or destroying what they can see. If we cannot see our garbage, or the grave we have dug with our energy proxies, then we assume that all is well. The issues of carrying capacity and population control remain abstract and distant to most people for the same reason. If this nation or region cannot feed its population, then food can be imported from

REVIVING GOOD WORK

The dilemma of private economic responsibility, as I said, is that we have allowed our suppliers to enlarge our economic boundaries so far that we cannot be responsible for our effects on the world. The only remedy for this that I can see is to draw in our economic boundaries, shorten our supply lines, so as to permit us literally to know where we are economically. The closer we live to the ground that we live from, the more we will know about our economic life; the more we know about our economic life, the more able we will be to take responsibility for it. The way to bring discipline into one's personal or household or community economy is limit one's economic geography.

This obviously sets up an agenda almost as daunting as the political agenda. The difference—a consoling one—is that, in influencing policy, only large-scale work is meaningful, but in reforming private economies, the work is necessarily modest and can be started by anybody anywhere. What is required is the formation of local economic strategies, and eventually of local economies, by which to resist abuses of natural and human communities by the larger economy. And, of course, in talking about the formation of local economies capable of using an earthly place without ruining it, we are talking about the reformation of people; we are talking about reviving good work as an economic force.

If we think of this task of rebuilding local economies as one large task that must be done in a hurry, then we will again be overwhelmed and will want the government to do it. If, on the other hand, we define the task as beginning the reformation of our private or household economies, then the way is plain. What we must do is use well the considerable power we have as consumers: the power of choice. We can choose to buy or not to buy, and we can choose what to buy. The standard by which we choose must be the health of the community—and by that we must mean the *whole* community: ourselves, the place where we live, and all the humans and other creatures who live there with us. In a healthy community, people would be richer in their neighbors, in neighborhood, in the health and pleasure of neighborhood, than in their bank accounts. And so it is better, even if the cost is greater, to buy near at hand than to buy at a distance. It is better to buy from a small, privately owned local store than from a chain store. It is better to buy a good product than a bad one. Do not buy anything you don't need. Do as much as you can for yourself. If you cannot do something for yourself, see if you have a neighbor who can do it for you. Do everything you can

to see that your money stays as long as possible in the local community. If you have money to invest, invest it locally, both to help the local community and to keep from helping the industrial economy that is destroying local communities. Ask yourself how your money could be put at minimal interest into the hands of a young person who wants to start a farm, a store, a shop, or a small business that the community needs. This agenda can be followed by individuals and single families. If it is followed by people in groups—churches, conservation organizations, neighborhood associations, and the like—the possibilities multiply and the effects will be larger.

The economic system that most affects the health of the world, and that may be most subject to consumer influence, is that of food. And the issue of food provides an excellent example of private change with public implications. You can start to reform your own food economy without anybody's permission or help. If you have a place to do it, grow some food for yourself. Growing some of your own food gives you pleasure, exercise, knowledge, sales resistance, and standards. Your own food, if you grow it the right way, will taste good, and so will cause you to wish to buy food that tastes good. Buy locally grown food. Tell your grocer that you want locally grown food. If you can't find locally grown food in stores, then see if you can deal directly with a local farmer. The value of this, for conservationists, is that when consumers are acquainted and friendly with their producers, they can influence production. They can know the land on which their food is produced. They can refuse to buy food produced with dangerous chemicals, or by other destructive practices. As these connections develop, local agriculture will diversify, become more healthy and more stable, employ more people. As local demand increases and becomes more knowledgeable, value-adding small food-processing industries will enter the local economy. Everything that is done by the standard of community health will make new possibilities for good work, the responsible use of the world.

The forest economy is not so obviously subject to consumer influence, but such influence is sorely needed. Both the forests themselves and their human communities suffer for the want of local forest economies—properly scaled wood products industries that would be the basis of stable communities, and would provide local incentives for the good use of the forest. People who see that they must depend on the forest for generations, in a complex local forest economy, will want the forest to last and be healthy, they will not want to see all the marketable timber ripped out of it as fast as possible. Both forest and farm

communities would benefit from technologies that could be locally supplied and maintained.

The economy of recreation has hardly been touched as an issue of local economy and conservation, though conservationists and consumers alike have much to gain from making it such an issue. At present, the economic use of privately owned farm and forest land is almost completely disconnected from its use for recreation. Such land is now much used by urban people for hunting and fishing, but mainly without benefit to the landowners, who therefore receive no incentive from this use to preserve wildlife habitat or to take the best care of their woodlands and stream margins. They need to receive such incentives. Public funds might be given to private landowners to preserve and enhance the recreational value—that is, the wildness—of their land. Since governments are unlikely to do this soon, the incentives need to be provided by consumer and conservation groups working in cooperation with farm groups. The rule of the food economy ought to apply to the recreation economy: find your pleasure and your rest as near home as possible. In Kentucky, for example, we have hundreds of miles of woodland stretching continuously along the sides of our creek and river valleys. Why should conservation and outdoor groups not pay an appropriate price to farmers to maintain hiking trails and camp sites and preserve the forests in such places. The money that would carry a family to a vacation in a distant national park could thus be kept at home, and partly used (for there would be a saving) to help the local economy and protect the local countryside.

The point of all this is the use of local buying power, local gumption, and local affection to see that the best care is taken of the local land. This sort of effort would bridge the gap, now so destructive, between the conservationists and the small farmers and ranchers, and that would be one of its great political benefits. But the fundamental benefit would be to the world and ourselves. We would begin to protect the world, not just by conserving it, but also by living in it.

Wendell Berry is a farmer and a writer. His literary works include The Unsettling of America, The Gift of Good Land, Home Economics, and What Are People For?. His farming works include the successful restoration of an eroded hillside farm near the Kentucky River.



Book Reviews

Readings

baja!

by Doug Peacock, photographs by Terrence Moore, introduction by Peter Matthiessen; 1991; Little, Brown and Company, Bulfinch Press, Boston; 181 color photographs; \$40.

In the winter of 1988, Doug Peacock crossed the border into Baja to seek shelter from his sadness over a friend's imminent death. In 1751, Father Jacob Baegert crossed the Sea of the Cortez in a hollow log, a passage of two and a half days, because he wished to save souls. In 1957, Terry Moore crossed the line to catch a glimpse of the 800 mile long peninsula. Hernan Cortez sent a fleet in the early sixteenth century seeking an Amazon queen and rumors of great wealth. Peter Matthiessen came in 1946, fresh out of the Navy and ready for the beer and tequila in the joints on the Pacific Coast. There are many reasons to go to Baja and many Bajas—ocean, desert, scrub forest of the Cape region, black rock of the central volcanos, roar of Tijuana, silence of San Luis Gonzaga.

For years a small bookshop in Los Angeles, Dawson, has put out a series of books dealing with Baja. The little blue volumes now number around fifty, I suspect, and I have read maybe thirty of them. None of them is the definitive Baja book and that is the very charm of the series and of the place. There will never probably be *The Book about Baja*. The narrow peninsula washed by the Pacific on one side and the Sea of the Cortez on the other doesn't lend itself to such an effort. As Peacock notes, "The land is so big and any one life passes quickly over so little of it."

Baja! is a welcome addition to the reports from this region because it is by people who know the place and know their limits. Peter Matthiessen's introduction gives a quick survey of the ground that sweeps from the boom of Tijuana in the north to the resorts of Cabo on the tip and all that lies between (some of the emptiest, driest, most bewitching desert in North America). Terry Moore's photographs generally focus on one level of Baja, the world outside the cities and the villages—what we call, for lack of a better term, the natural world. The images are startling to anyone who has not been there—a world of dull browns slashed by the brilliant blue of the sea. Doug Peacock takes the low and grand road, his alimentary canal, and eats his way up and down the peninsula dining on what he can bag from the sea,

harvest from the desert, and hallucinate from his mammoth backpack. After I finished this book I wanted to go out and devour a clam dinner. The mixture of words and photos, combined with a couple of decades of visits by the three, makes *baja!* as good a sampler to the place as exists or probably ever will.

The text and photographs carefully visit each of the peninsula's regions, and walk us through the human, geological, and biological history of the place. Which is part of the reason why every book on Baja winds up a slice rather than the whole thing; there is too much variety for any one effort. On these coasts, gray whales spout next to cactus, missions centuries old slumber next to paved highways, cave paintings compete with Tecate billboards; *baja!* is an ocean book about a desert and a desert book about an ocean. And of course we must remember the uninhabited islands dotting the Gulf.

Like any book about any place these days there is a sense of loss in this one. The population is booming along the border, the sea is being overfished, tourism is leaving litter, machines and the wart-like eruptions of resorts are scarring the deserts, and agriculture in some parts is gutting ancient aquifers. And then there is a personal loss hanging over the book: the death of Edward Abbey, who originally was going to write it but decided to move on.

Peacock notes these problems and offers some suggestions about changing our habits, restricting our industries and setting aside some ground for reserves. But this is not a book that devotes itself to environmental problems. It is a book about Baja, a place where the ground makes problems shrink because the ground tends to overwhelm us and silently insist it will outlast both ourselves and our problems. That is probably why many of us go there and why when the future finally arrives, Baja will still be there and our whereabouts unknown.

If you have been to Baja, the book will bring back memories and make you anxious to return. If you haven't been there, dip into it. And start packing (the endpapers have a fine map for plotting that first venture). Baja will never be home to many of us. It lacks the things most people demand of a home. But it will clear your head and give a good idea what changes to start making once you get home.

For too long the peninsula has been a playground for sport fishermen, four wheel

drive daredevils, and folks craving a good tan and a cheap cocktail. *baja!* gives this ground a chance to be seen for what it is, a place, and a very good place at that.

Peacock says in the closing section of the book, called "future of the Baja region":

A blowup of an old photograph hangs on the basement wall of the Evolutionary Biology building at the University of Arizona. The picture shows an immense froth of water the size of several football fields just off the beach of the upper Gulf of California. It is a feeding frenzy featuring a giant school of Gulf croaker, now thought to be extinct, who are driving a school of baitfish right up onto the beach. The scene is one of great power such as I might imagine a photograph from the high plains in 1800 when a flock of passenger pigeons would block out the sun for three days or a herd of six million bison would stain the sand hills of Nebraska black...

There in that image of vanished gorging is the allure of Baja. It is not quite paradise but paradise still seems possible there. There has been damage, ah yes, but saving it still seems conceivable. A skinny 800 mile long peninsula can be surprisingly seductive. Take a look and find out.

—Reviewed by Charles Bowden, author of *Killing the Hidden Waters*, *Blue Desert*, and other desert books.

GOATWALKING

by Jim Corbett; 1991; Viking Books.

My introduction to Jim Corbett's book *Goatwalking* came from reading the first appendix note, a land covenant of the Saguaro-Juniper Association containing the following "bill of rights" for the land:

1 *The land has a right to be free from human activity that accelerates erosion.*

2 *Native plants and animals on the land have a right to life with a minimum of human disturbance.*

3 *The land has the right to evolve its own character from its own elements without scarring from construction or the importation of foreign objects dominating the scene.*

4 *The land has a preeminent right to the preservation of its unique or rare constituents and features.*

5 *The land, its water, rocks, and minerals, its plants and animals, and their fruits and harvest have a right never to be rented, sold,*

extracted, or exported as mere commodities.

I started sending copies of this bill of rights to friends, to hear their responses, and I started reading *Goatwalking*, to find out who Jim Corbett is, and how his life had led him to such a statement.

The full title of the book is: *Goatwalking: A Guide to Wildland Living, A Quest for the Peaceable Kingdom*. In the preface Corbett says "Wildlands can wake us to forgotten harmonies if we return as participants who belong there rather than as appreciative aliens or as subjugating conquerors. As a survival technique independent of the market economy and land ownership, goatwalking works very well but is as self-defeating as any other self-centered activity. No one survives for long. As a way to cultivate a dimension of life that is lost to industrial man, goatwalking may put us in touch with a mystery more real than we are."

Later in the book Corbett says, "Goatwalking is one of the few ways that a group of people who have been tamed to serve technocratic civilization can cease for a time to live by making war on life."

The author has seen the results of this war on life. His time spent goatwalking in the desert Southwest has taught him valuable survival skills and a keen sense of the lay of the land. As a founder of the Sanctuary movement he has used these skills, this information, to help the human survivors of the war on life in Central America to journey north in quest of a peaceful life, in quest of survival.

This book is about walking with goats. It gives the reader much information about surviving in the desert, about caring for both goats and the land. It is also about the Sanctuary movement, and the struggle for basic human dignity. More than that, it is the story of one man's journey, one man's walking of a path which he perceives clearly. Whether or not the reader agrees completely with Corbett, it is a pleasure to see a life so clearly perceived, and acted upon. This is a deeply religious book, but a religion at home in the wild places of the earth. Corbett says "I prove no points. This is no teaching." I would say, walk with him, reader, and lend him your ear.

—Reviewed by Gary Lawless, author of *Sitka Spring and other works of poetry*.

Waste of the West: Public Lands Ranching

by Lynn Jacobs; 1992; available from the author, POB 5784, Tucson, AZ 85703; 602 pp, \$28.

During the eighties many of us became increasingly fluent in the language of disaster, each year our lips more accustomed to pronouncing the names of the dying: "Kal-mi-

op-sis," "Pe-nan," "Un-com-pah-gre fri-til-lary" And somehow with each articulation, the individual horror amalgamates into the collective sense of apocalypse, and loses its idiosyncratic intensity. At least that's how I have dealt with the overwhelming nature of our present extinctive era.

So it is a rare book that manages to once again evoke for me the unique aspect of yet another tragedy, while at the same time tying it to the general thrust of our civilization. That *Waste of the West* can do so, while still proffering a solid and realistic course toward salvation, is reason enough to recommend it.

But there are other reasons. In a brief 602 pages (I couldn't put it down), Lynn Jacobs convinced me beyond a shadow of a doubt what I only half understood before: that domestic livestock grazing (along with its sibling, human population metastasis) is the single biggest threat to biological diversity on our continent and globe.

Waste of the West is a lucid micro and macroscopic tour of North American ecology, and an explanation of how every aspect of it has been, and continues to be, damaged by cows, sheep, ranchers, and their government minions. For instance, in discussing desert ecosystems, Jacobs calls cryptogamic crusts the "living skin" and "topsoil of much of the West." He then elaborates that cryptogams, bind soil particles together and help prevent erosion. Cryptogamic carpets also infiltrate water, reduce evaporation, moderate soil temperature, trap wind-borne particles, physically and chemically create soil, bind important nutrients and keep them in upper soil horizons, fix nitrogen, contribute organic matter, provide a seed bed, and promote a wide variety of ground-dwelling animals.

This explanation, backed up by a photo, makes the subsequent discussion of livestock impacts on cryptogams easy to understand. But the point is driven home through another photo, this time of pulverized cryptogams, and (for the skeptic) a source reference from the *Journal of Range Management*.

But Jacobs constantly rises above the aridity of scientific minutiae and outlines the broad horizons of his subject. Why should someone who has never seen a desert get excited about the demise of cryptogams, even if they do fix nitrogen? The key lies in understanding the inherent perfection of natural conditions.

A true desert is not merely an area of sparse vegetation, but an area only capable of supporting sparse vegetation. There is an immense difference. Actual desert is not wasteland but simply another of the Earth's natural biotic regions. This helps explain why the Earth's human/livestock-created deserts,

many of those in the "Old World" particularly, support a paucity of desert species compared to more natural deserts like those in North America....Much of today's West only superficially appears to be desert and would be more accurately described as "wasteland."

Cogent explanations like this make the philosophy of biocentrism espoused in *Waste of the West* more than a matter of faith; and Jacobs understands that the key to ending public lands grazing is the education and involvement of the as-yet uncommitted.

Waste of the West nicely balances the overwhelming evidence of livestock-created ecological collapse with a discussion of the economic consequences of grazing on public lands. Almost all the public attention on welfare ranching has focused on grazing fees, which each year fail to pay for at least fifty million dollars worth of acknowledged ranching developments. Jacobs demonstrates that this subsidy on leasing public land for grazing is small compared to less direct, and often hidden, subsidies.

For example, in 1987 the Forest Service and the Bureau of Land management (BLM) spent forty-two and seventeen million dollars, respectively, on "wildlife habitat management." Much of that went into fences, water developments, herbicides, pinon-juniper forest chainings, and attempted mitigation of livestock destruction of riparian zones. As Jacobs explains, "at least \$15 million annually of combined BLM and Forest Service wildlife expenditures are necessitated by, or designed to benefit, ranching."

Even more obscure subsidies involve the impacts of welfare ranching on private and other publicly owned lands. For instance, many rural residents spend large sums drilling wells to access water tables that cows have lowered. And municipal, county, state and federal governments pay hundreds of millions of dollars in flood damages caused by denuding of higher elevation public lands by livestock. Jacobs explains that soil loss is expensive:

It is conservatively estimated that human activities cause the loss of 500 million tons of topsoil from public lands each year, most of it due to ranching (Akers 1983). If we assume an annual topsoil loss caused by public lands ranching of only 200 million tons, and calculate the value of topsoil at only 50 cents per ton, this alone adds up to \$100 million annually—about 5 times what the BLM and Forest Service grossed from grazing fees in 1987.

However, money is not the bottom line: "[C]an you put a price on soil? Without it most terrestrial life ceases, streamflows diminish....its loss is incalculable."

Jacobs concludes that though the most

significant damages of public land ranching—to wildlife, ecosystems, and to human experiences of nature—are immeasurable, quantifiable subsidies to the ranching industry still total over a billion dollars annually.

Federal land management and environmental agencies are, in effect, vassals to public lands ranchers. Public lands ranchers regularly violate environmental laws, such as the Clean Water Act. *Waste of the West* provides a clear guide to the arcana of grazing laws and regulations, along with their development and subversion. For instance, under the 1934 Taylor Grazing Act and the 1950 Granger-Thye Act, federal livestock permittees elect local grazing “advisory” boards. These boards exercise effective control over fifty percent of gross grazing fee receipts, which go into range “improvements” such as water projects, fences, vegetation poisoning projects, etc.

Beyond such formal institutional control, Jacobs notes the incestuously close relationships between ranchers and officials at every level of government, from county commissions and state legislatures to presidents. Upon taking office, Ronald Reagan named millionaire rancher Bob Burford to head BLM. At the time, Burford held permits to 32,000 overgrazed BLM acres in Colorado, and was notorious for trespassing his livestock. Subsequently, Burford got into trouble with Congress and the Ethics Office for conflict of interest decisions. Yet he retained his position. This typical arrangement makes it virtually impossible for the few agency personnel trying to buck the ranching establishment to succeed:

In 1981 Bob Buffington, director of the Idaho BLM state office and a 26-year veteran of the agency, was replaced, demoted, and eventually ushered out of BLM altogether for speaking out against overgrazing.

In a rare omission, *Waste of the West* does not elaborate on one of the most effective and hidden mechanisms used to retain such political clout: the establishment of water districts designed exclusively for irrigation for cattle feed. Such tax-imposing districts, governed by irrigators (i.e. ranchers) acquire expensive water projects, with the help of county commissions and key congressional committees.

Indeed unnoticed, Ronald Reagan and fellow ranching “Sagebrush Rebels” effectively gave ranchers (and municipalities) large portions (perhaps most) of the public domain through refusing to assert the federal government’s ownership of water on federal land. In the arid West, water is both the ecologic and economic foundation of the land. The Republican-appointed Supreme Court has written new opinions that, combined with the recent administrations’ abdication of the doctrine of federally-reserved water rights, seem

likely to result in rancher-owned water on federal land. Like the chicken and the egg, it becomes difficult to distinguish which came first: ranchers’ political hegemony, or government money flowing like (and often as) water to them.

Given the dire straits of our land, water and wildlife, and given the seeming political stranglehold exercised by ranchers, it would be hard to offer solutions without sounding naive. And admittedly, Jacobs’s ambitious solution on first glance seems as politically viable as, well, dismembering the Union of Soviet Socialist Republics sounded two years ago. After evaluating various half-solutions to the unmitigable disaster of public lands ranching, he advocates as the cheapest and only ecologically sensible alternative banning livestock from public land, and buying out the West’s 30,000 public land ranchers and their ranching property.

He then proposes a new “Department of Public Land” (DPL), which would restore to ecological integrity the much-abused federal estate. By eliminating ranching and other subsidies, this consolidated and streamlined agency would channel money and personnel to the task of revegetating and re-animating (bringing back extirpated critters) the land, and removing fences and other destructive impositions. Underlying this work, says Jacobs, is faith that Nature manages itself—as it has for 5 billion years—but with a belief that Nature and humans are inseparable. DPL’s ultimate function would be to ensure that public land remained natural, with natural human use.

Jacobs’s living faith, laced with an acute intelligence and impressive scholarship, became *Waste of the West: Public Lands Ranching*. The book is as riveting and important as *Silent Spring*. It holds potential to be as explosively healing.

—Reviewed by Michael Robinson,
executive director of Sinapu, Colorado’s wolf
reintroduction group.

HOW NOT TO BE COWED

by Johanna Wald, Ken Rait, Rose Strickland, and Joe Feller in cooperation with various conservation organizations; copyright 1991 by Natural Resources Defense Council and by Southern Utah Wilderness Alliance, 436 Alameda, Salt Lake City, UT 84111 (send a few bucks if you can); 70 pages.

Ranching has done more to harm Western public lands than has logging, mining, or anything else. Many of us are finally beginning to glimpse this reality through the fog of culturally-instilled romantic cowboy fantasy, and wondering what we can do to help pro-

tect our public land from ranching abuse.

Maybe the best place to start is with the federal agency that administers nearly 1/4 of all land in the 11 Western states—the Bureau of Land Management (BLM). More than 90% of BLM land is divided into “grazing allotments” for use by cattle and sheep ranchers.

A new publication, appropriately entitled *How Not to be Cowed*, explains how you can influence BLM decision-making. Produced in cooperation by a dozen national, regional, and local conservation organizations, the booklet is the first in a series of 4 public land “Owners’ Manuals” covering ranching, mining, oil and gas, and BLM land use planning.

In Chapter 1, *How Not to be Cowed* reinforces the concept of public land under public control:

Historically, there has been little public scrutiny of public land grazing, and BLM and the ranching industry still operate essentially behind closed doors. These are public lands, however, and the law has set up numerous ways for you to influence BLM’s decisions.

Chapter 2 outlines “Six Steps to Grazing Reform.” The last step is perhaps the most important—“Don’t Be Cowed.”

Chapter 3 explains that BLM ranching decisions are made at 3 levels—national, resource area, and allotment. This booklet deals only with the resource area and allotment levels. An end to public lands ranching will probably require action on the national level.

The 4th chapter—the “meat” of the handbook—details 15 issues that may be raised relative to BLM land use plans and ranching decisions. (There are many other possibilities, but these are perhaps the most prominent.) Included here are many tips for effective activism. For example, a camera in the right place at the right time can document ranching abuse. Suspect ulterior ranching motives behind “range improvement” projects; offer alternatives such as livestock reductions. Ranching may legally be curtailed to protect paleontological sites. Beware of plans to reduce livestock numbers in riparian areas, only to increase them in uplands. And so on.

Chapters 5 and 6 offer ideas on how to approach the resource area and allotment management plans themselves.

Finally, Chapter 7 explains what you can do when all your best efforts to protect the land fail. This is a chapter ranching reform advocates will utilize often.

The public lands ranching issue is obscure, complex, and immense. It is also emotionally charged (due to America’s cowboy love affair); and opponents of public lands ranching face possible political, financial, social, and physical repercussions. An abundance of livestock industry misinformation

and a lack of public education further cloud the issue. Add to all this BLM's overt and covert intimidation, and it is easy to see why so few activists get involved in this issue.

How Not to be Cowed has an informative, well-organized, friendly style designed to help activists confront the BLM ranching establishment and accomplish long-needed reforms.

A footnote: I personally think the "grazing allotment" concept and the BLM land-use decision-making process are designed to protect ranching more than other uses or the environment. Is this power structure reformable? In the long run, will participation in this decision-making process produce significant and permanent improvements? Or will it only further entrench an inherently destructive, wasteful, unjust ranching establishment? Time will tell. Or perhaps other factors will prove these questions moot.

—Reviewed by Lynn Jacobs, POB 5784, Tucson, AZ 85703

ed. note: I asked Michael P. Cohen, author of The Pathless Way and The History of the Sierra Club, to review Gary Snyder's Practice of the Wild (1990; North Point Press, 1563 Solona Ave. #353, Berkeley, CA 94707-2116; \$10.95 paperback) for us. Michael responded with this:

Dear John,

You asked if I would be willing to review Gary Snyder's *Practice of the Wild*. It is true, as Snyder has said, that very few—if any—thoughtful reviews of it have been written,

This is in an intimidating task. I have in front of me Max Oelschlaeger's *The Idea of Wilderness* (1991), which, following George Sessions, refers to Snyder as the "poet laureate of deep ecology." But many of Snyder's readers would go beyond seeing him as simply a poet. Sessions and Devall argue that he is a philosopher in his own right, and speak of his philosophy as "spiritual ecology." Dolores LaChapelle uses the term "sacred ecology" for Snyder's world view. These labels point out the problem in attempting to review Snyder's work. Though he is a real man, thinking and working seriously as a writer and teacher, living his life in the Northern Sierra Nevada, he has become for many of us also a kind of patron saint. He has been a physical fact, a cornerstone of our cultural geography, and also a spiritual force in our lives. It is hard to believe that any reader of *Wild Earth* would require an introduction to his work.

As a result, favorable but uncritical views of Snyder's work abound. Jack Turner, for instance, has been admiring Snyder in print

recently in both *Western American Literature* and the *Patagonia Mail Order Catalogue*. But we are better off reading Snyder than panegyrics.

Snyder's writing IS ABOUT LANGUAGE—about its importance in our interactions with the world, and about cleansing the language, as a first step in purifying our lives. From "Tawny Grammar," the third section of *The Practice of the Wild*:

...when occidental logos-oriented philosophers uncritically advance language as a human gift which serves as the organizer of the chaotic universe—it is a delusion. The subtle and many-layered cosmos of the universe have found their own way into symbolic structure and given us thousands of tawny human-language grammars. (pp. 76-77)

This is an absolutely essential point, if we are to understand Snyder. *The Practice of the Wild* is, to a great extent, about the practices of languages, finding their roots in the lives of humans, which roots are in places and in the cultural responses to places. Snyder is a multiculturalist and a primitivist of language. He trusts the old, well designed tools. In his attentiveness to the language he uses—in the phrase "Tawny Grammar" itself—Snyder acknowledges that Henry Thoreau's "Walking" is one of the basic sources for clear thinking about the false dualities of language and wilderness, nature and culture. (Thoreau's essay is required reading, if one wishes to understand how Snyder fits himself into the American tradition of writing about nature.) Snyder, like Thoreau, denies any simple distinctions between these false dualities, or between mind and body. He is attentive to the deeply interfused parts of our living on earth. And he is ever aware to warn the reader against oversimplification:

Metaphors of "nature as books" are not only inaccurate, they are pernicious. The world may be replete with signs, but it's not a fixed text with archives of varia. (p. 69)

It is not a fixed text precisely because it is not here for our reading and also because we are a part of it. As Snyder insists, the idea of a continent with all nature and no men is a delusion: "There were human beings too: North America was all populated. . . . There has been no wilderness without some kind "of human presence. . . ." (pp. 6-7)

If we have a difficult time finding our place on this continent, it is out of our failure to realize the limitations of our alienated perspective and language, yet paradoxically it is also due to a failure to realize resources languages and stories of this continent offer us. No wonder we are rootless.

Though Snyder's view is not the same as that of the new western historians, he shares a

perspective with Richard White who writes in *It's Your Misfortune and None of My Own: A History of the American West* (1991):

Since humans had not shaped the West into a landscape familiar to expectations conditioned by Europe and eastern North America, they concluded that humans had not shaped the land at all. In fact, Indians had been altering the land for millennia. (p.57)

And Snyder recognizes too that Western Americans had missed a major geographical and cultural reality as they came into this country. What they called wilderness, and what we speak of in the Wilderness Act, is a misnomer. There is no place where "man himself is a visitor who does not remain," or else all places fit this definition. Humans are part of the wilderness and it is part of them.

Snyder shares—in fact anticipated—something else of the new western historians, an awareness that there is a huge gap in our practical knowledge of ourselves on this continent, as a result of our hasty development of market economies. "Cultures of wilderness live by the life and death lessons of subsistence economies," he points out. (p.7)

What we have missed, that great gap in our cultural literacy, is precisely subsistence. As Patricia Nelson Limerick argues in *The Legacy of Conquest* (1987), the "attitude of extractive industry—get in, get rich, get out," has meant not only that Americans never did settle the West, but also that in dislodging many viable, self-perpetuating societies without learning anything from them, American invaders did not acquire those things crucial to later social and cultural geography of the area. (p. 100) Our economy, writes White, "instead of advancing in carefully calibrated stages from subsistence to commercial production had rushed headlong into world markets." (p. 236)

Whether we will ever be able to remedy this terrible gap remains to be seen. A great part of what Snyder is doing is recovering knowledge embodied in language and narratives of the subsistence economies we have replaced. Examples in this and other works by him are too numerous to list. His work begins, even as Thoreau's did, in etymology and a reattaching of words to things. It is a poet's work in part, but it is not just a poet's work. It is also an understanding of the sacred, and the sacred stories, and also our own histories, where they are accurate, and where they are delusions. It requires anthropological literacy. By the end of *The Practice of the Wild*, we might recognize it as a part of the work of what Paul Shepard calls human ecology.

The point is not simply to know, but to use this knowledge. There are practices. Language itself is a practice, not individual but

shared, even as stories are shared. Both require community. In his emphasis on community, Snyder distinguishes his thinking from Thoreau's.

Because we can not go back, we recover our knowledge these days through books: "Books are our grandparents!" he writes. (p. 61) But we should not pretend, Snyder warns us, that books are the only path to language or narrative. Reading Snyder's version of "The Woman Who Married a Bear"—which is surely not as good as hearing one of the many versions of the many stories it might have been—we acquire a good deal about the interpenetration of the wild and ourselves. Whether we understand it or not is another question. We know it is a story whose teller is several times removed from ourselves, in time and space. And what of the human experience?

"She walked off on four legs! She shook herself just like a bear—it just happened! She was a Grizzly Bear. She couldn't do a thing."

This story contains something we must stand before with wonder. Reading Barry Sanders and Paul Shepard, *The Sacred Paw*, including Snyder's epilogue, helps enlarge the possibility that we might understand more, but can we ever understand completely? For some, the story itself may embody a wildness no civilization can endure, which is probably why Snyder dwells upon it.

Though a prose work—and poets are known to take prose less seriously than poetry—this volume is a model of candid, clear, and economic discourse. It is a result of long gestation, some sections having been worked on for a decade or more. Snyder considers it one of his most important works. For me, its most important contribution is to define those languages and usages associated with wilderness, renewing them by attaching them to their older and more accurate sources, a strategy which might allow the idea to remain more tenable as we try to carry it into the future.

Finally, what I have written here does not go very far or very deep into *The Practice of the Wild*. I have followed one strand of Snyder's thought a little way. I do not feel competent to judge many aspects of Snyder's thinking, particularly those aspects with roots in Eastern cultural materials. He has written a highly diverse book, and also highly compressed. It extends in many directions.

Sincerely,

Michael P. Cohen

MAN IN THE LANDSCAPE: A Historic View of the Esthetics of Nature

by Paul Shepard; first published in 1967,
reprinted 1991 by Texas A&M University

Press, College Station, TX 77843; \$24.50 hard cover. 295 pp.

Finally, this important book is back in print. When first published, it was crucial to the development of many of the themes that later came to be called Deep Ecology. For years, I've carried around tattered pieces of this book to read at workshops and lectures; and always people were excited about these "new" ideas and asked where they could get the book. Nowhere else can you find the so brilliantly explained connections between evolution, art history, sense of place, landscape appreciation, wilderness, hunting/gathering societies, tourism, and environmental degradation.

The first chapter, "The Eye," is a masterful account of what seeing is for humans. He states that "Animals have become binocular for two reasons: predation and jumping, either or both." He explains that "The sea eye was first connected to a fishy brain and body. When taken on land it continued to see only the spectrum of light transmitted by water and to commute the 'coolness' of the blue depths with the 'warmth' of the reddish, sunlit surface in a hundred ways." Further on he writes about joy in colors and delight at sunlight entering a dusky room. These are not experienced as a local sensation, and so, being "apprehended purely as emotions," we don't know their origin. "When no association of ideas can be found to account for the ecstatic mood it is often attributed to some spiritual faculty higher than ordinary thought and thus further removed from the mere sense." Hence the slanting sunlight can come to mean a message from the Christian God up in heaven.

The bush apes, ancestors of humans, gradually moved farther from the forest. "They took the sea eye out of the gloaming and into the radiance of the open day, though not without some enduring nostalgia. The awareness of glare in the open air and a sense of vulnerability when in it have not been completely dispelled. An affinity for shade, trees, the nebulous glimmering of the forest interior, the tracery of branches against homogeneous surfaces, climbing...are all parts of the woody past." Early humans preferred being on the edge of the forest looking out over the savannah and out of this ancient predilection came the parks of the English ruling class, later copied by the early American estates in the Eastern US.

Apropos to the current 1992 "uncelebration" of Columbus Day, he wrote about the Spanish who imposed their view on the new world with "the sanction of a pastoral imagery, imposed by a political-economic-religious attitude, epitomized by the Spanish Mesta. This was a privileged class of stockmen

whose sheep had wrecked the interior plateaus of Spain even as the Inquisition wrecked the national intellectual spirit. The transplantation of Spanish sheep, goats, and pastoral customs to Mexico and the Rio Grande initiated a destruction of the habitat which continues today." About pastoralism, he writes, "the irony at the roots of our civilization is that the first agency by which man gained control of and radically changed his environment has destroyed his paradise."

Shepard's accurate account of the origins of patriarchy was years ahead of the feminist movement in general. He states that:

*Agriculture dealt the male ego a blow so terrible that his vengeance may yet destroy most of nature, for its havoc is everywhere around us. The necessities of cultivation were inescapably feminine. The whole cycle of vegetative growth from the earth, the permanent hearth, the passive waiting and receptivity corresponded as though preordained with the ambiance and psychology developed by the woman in the hunting society.**

In fact 24 years ago he clearly stated: "the feminist revolution is a ruse." He goes on to say this about women's assumption of roles in industry and military service: "Capable as they may be in these jobs, they do not actually replace the men but join them. They are swallowed by a system which is antithetical to their innermost natures." In another place he writes:

The tigerishness of American housewives does not prove the dominance of the female spirit, only its monstrous subversion... The low social and political status of women coincides with the general absence of devotion to place and of a mythology of a rootedness in nature.

Nature goddesses were supplanted by a "patriarchal succession from Yaweh to Mohammed, [which] corresponded to the application of increasingly efficient tools to agriculture, the development of irrigation works, storage cities, and the social paraphernalia of trade and commerce... With urban society and civilization in the Near East came the victory of the male gods over the ancient goddesses." Most important of all he goes into the mind change necessary to pastoralism and ends with this statement: "Paternity is the intelligent application of cause, not an enigma." Intelligent in this sense meaning the narrow rational approach to Nature, forgetting the "magic machinery of the soil...full of unseen worms and bones." For those who criticize a man for "daring" to write about the true nature of women, I want to add here that Shepard's knowledge comes from a deep background in the study of ethology and he teaches Human Ecology at Pitzer College.

In another chapter, "The Itinerant Eye,"

he explains how we "abstracted" nature. He writes: "The beginning of landscape painting and modern garden art in the fifteenth century were part of a revolution which is still going on." The word "scenery" comes from the Greek word for stage. This marked a big change from the participative life of foragers and hunting peoples. "The observer of scenery has a disinterested attitude...Scenery comes with science and with museum art, a product of analytical and detached vision...the history of scenery is the history of painting and tourism."

This concept of scenery created our first national parks. In essence the National Park concept had nothing to do with setting aside a place for natural processes; rather it was "scenery" to inspire humans. Shepard points out that present day recreation is replacing the pilgrimage, which had natural wonders as its objective. "This new version of the national park is only another form of material exploitation...because people so motivated require so many props, machines, and controls on nature."

Throughout the book Shepard contrasts the destructiveness of Industrial Growth Society with the primitive approach. "That those cultures existed for hundreds of thousands of years is the testimony of their success, against which all the progress of humanity for the past ten thousand years may yet prove but a downward spiral." Shepard points out that for perhaps 95 percent of their history humans

have been hunters. "Primitive peoples ritualize hunting except where hunting societies and the technological world have collided, where cultural deterioration has reduced customary inhibition to wanton killing." The kill is considered a gift. "Its bestowal depends on the conduct of the hunters. Without this gift the hunters will die. As Malinowski says, 'food is the main link between man and his surroundings' and by receiving it he feels the forces of destiny and providence." After completing this book Shepard realized the amount of work needed in this field so his next book was *The Tender Carnivore and the Sacred Game* (out of print).

One of the crucial sections of *Man in the Landscape*, which clearly shows what we are up against in our work to save species and life processes, deals with the generally held distinction between conservation and preservation.

Among most professionals—hydrologists, farmers, foresters and other authorities the first "means proper use, and naturally, with the vast needs of humanity, includes an ideal dispensation for most of the world. The latter means a special type of land reservation for esthetics, recreation, or science. One is, to them, a general philosophy, the other a very specialized form of land use." These resource people "learn in college an indignation and righteous humanitarian horror of 'locking up' the raw materials used by our civilization..." Shepard wrote this way back

in 1967; yet few have stated it so clearly even now. Going deeper into this problem, Shepard writes that "we must first dispose of the alternatives—conservation ('wise use') and preservation—which they offer and look at all human activity in nature as falling along a graded scale of environmental modification...Something is preserved and something used in every situation. The thing kept or lost is always a species of organism."

He ends the book with a discussion of the need for wilderness:

In wilderness are preserved all kinds of plants and animals, all those interconnecting events which are the physiology of life. We ourselves do not need all of them to live (for example, the lion catching the deer), but their loss is a diminution of the whole for which there is no remaining equivalent, like a small amputation...But nature is events, not stuff. The wilderness is like a great river of events, diverted by men into this or that irrigation ditch. Any number of patterns of ditches are possible—as long as the river flows.

—Reviewed by Dolores LaChapelle

*When Shepard criticizes "agriculture" he means the whole history of what has now become "agri-business," not the normal human "horticulture" now called "Permaculture," which Mollison developed out of a study of the Tasmanian primitive gardens.

Noteworthy Articles

A Look at Conservation Literature

by John Davis

"Flying Foxes as Strong Interactors in South Pacific Island Ecosystems: A Conservation Hypothesis," by Paul Alan Cox, Thomas Elmquist, Elizabeth Pierson, and William Rainey, and "Flying Foxes: (Chiroptera: Pteropididae): Threatened Animals of Key Ecological and Economic Importance," by Marty Fujita and Merlin Tuttle: *Conservation Biology*, 12-91, p.448-63. The 200 or so species of bats belonging to the group known as flying foxes are important pollinators and seed dispersers throughout the Old World tropics.

In South Pacific islands, where they are being killed by hunters and fruit growers, the decline and extinction of flying foxes "may lead to a cascade of linked plant extinctions."

This issue of *Conservation Biology* (Society for Conservation Biology membership \$41, c/o Blackwell Scientific Publications, Three Cambridge Center, Suite 203, Cambridge, MA 02142) has numerous other articles important for conservationists too. See especially "Nested Faunas and Extinction in Fragmented Habitats" (p.496-505) by Alan Cutler. The author's studies of mammals and birds of Great Basin mountains support his contention that extinction sequences may be more predictable than extinction rates. As habitats are fragmented, certain species tend

to drop out before others. Extinction is not so random as is sometimes thought.

Also especially worth reading is D.W. Schindler's response to ESA's SBI (p.550-1). Schindler welcomes the Sustainable Biosphere Initiative of the Ecological Society of America, but points to some serious weaknesses in the initiative as it has thus far been presented: failure to call for studies on how to most effectively reduce human populations to within carrying capacity being one glaring omission.

"Following the Nectar Trail," by Theodore Fleming; *Bats*, winter 1991, p.4-7. Bat Conservation International's quarterly makes membership in BCI well worth the \$25 fee even for those without the time to join BCI's bat-saving work (BCI, POB 162603, Austin, TX 78716). Fleming's article describes how lesser long-nosed bats follow a trail of flowering cacti northward through the

Sonoran Desert each spring, then return south along a trail of blooming agaves in the fall. The mutual dependence of these bats and succulents and other species makes protecting all of them crucial. See in this issue also "On Fruits, Seeds, and Bats" (p.8-13) by Donald Thomas, which demonstrates the great importance of fruit bats in dispersing the seeds of many tropical trees.

"Ants," by EO Wilson; *Wings*, fall 1991, p.4-13. All lovers of enigmatic microfauna should join the Xerces Society (\$25/yr; 10 SW Ash St, Portland, OR 97204) and read its thrice yearly popular magazine *Wings*. The bulk of this issue is an explanation for the lay person by North America's preeminent ant person of "the little things that run the world." Ants and the other social insects comprise only a small fraction of all insect species, yet amount to about 80% of insect biomass and 1/4 or more of the total animal biomass of most land biomes in the world.

"Networking," by Laura X. Payne, *Living Bird*, autumn 1991, p.25-29. *Living Bird*, formerly *The Living Bird Quarterly*, is an important magazine "For the Study and Conservation of Birds," produced by the Cornell Laboratory of Ornithology. (Membership costs \$30/yr, tax-deductible: Cornell Ornithology Lab, POB 223, Ithaca, NY 14853.) Among this issue's excellent articles is Laura Payne's discussion of the Western Hemisphere Shorebird Reserve Network, which is designating shorebird reserves in the Americas at key staging areas—places, such as Delaware Bay and Punta Rasa, Argentina, where shorebirds congregate to rest and feed during their migrations.

Notice also in this issue Paul Ehrlich's article (p.11-13) linking bird population declines with human population increases. Rick Bonney's column, "Beyond the Field Guide," is full of conservation insights too (p.8-9).

"Reigning in the Brumbies," *Forest & Bird*, 11-91, p.37-40. The Royal Forest and Bird Protection Society of New Zealand produces an exceptionally candid and informative quarterly, *Forest & Bird*, which makes many US environmental periodicals seem tepid and superficial by comparison. (Membership costs \$25 or more a year; Royal Forest and Bird Protection Society, POB 631, Wellington, NEW ZEALAND.) *Forest & Bird* could help continental conservationists pay greater attention to biodiversity crises that are more apparent to islanders—exotic species and overfishing being two such crises.

"Reigning in the Brumbies" tells of the severe damage that feral horses are doing to

the North Island's tussock grasslands. As in the US, horses are afforded protection not given to other feral animals. Royal Forest and Bird is trying to overturn the law preventing removal of these horses from natural areas.

See also in this issue the articles on the successful World Heritage protection of South West New Zealand, Hauraki Gulf ocean dumping, the blue duck, and kiwi recovery. It is easy to conclude after reading these articles that New Zealand conservationists are ahead of their US counterparts.

"In Praise of Yew," by Christopher Manes; *Orion*, winter 1992, p.30-39. Of the many articles published lately on the Pacific yew, this one may be the best. *Orion* is a nature quarterly published by Myrin Institute and Conservation International (Orion Subscription Dept., POB 3000, Denville, NJ 07834; \$16/yr). Christoph discusses the symbolic and utilitarian importance of yews, conifers of the genus *Taxus*, throughout recorded history, as well as the recent rediscovery of their importance by opponents of cancer. Ironically, this rediscovery may imperil the Pacific yew even more than does logging, for the Forest Service has given Bristol-Myers Squibb approval to kill yews (50,000 this year) to make taxol.

"Salmon Restoration in the Columbia River Basin," and "Least Tern Habitat," both by Matthew Kimble; *Restoring the Earth*, fall 1991, p.1-3. *Restoring the Earth* is a new newsletter started by John Berger, author of *Environmental Restoration*; which offers short articles on current restoration efforts. For salmon these include structural habitat restoration by the Oregon Department of Fish and Wildlife and revegetation of riparian areas by the Cascade Geographic Society. Efforts for the California least tern, an Endangered species, have involved relocating sand and shells to build secure breeding areas in the San Francisco Bay area and southern California, and may soon involve reintroduction of the coyote. Coyotes would, it is thought, help terns by killing or driving away red foxes, which were introduced by people and are eating tern eggs and chicks. To join RTE and receive the newsletter, send \$15 (low income rate) or more to *Restoring the Earth*, 1713-C Martin Luther King Jr Way, Berkeley, CA 94709.

"Yucca," by Walter Whitford; *Wildflower*, autumn 1991, p.246. *Wildflower* is the quarterly of the Canadian Wildflower Society, which is "dedicated to the study, conservation, and cultivation of North America's wild flora." This article describes some of this continent's 30 plus species in the genus *Yucca*, and threats thereto. Illegal harvesting of yuccas through-

out their range in the US Southwest and Mexico, for use as ornamentals, is seriously diminishing some species. Livestock are another major threat. Among the animals that use yuccas are woodrats (*Neotoma* sp.), sun spiders, scorpions, lizards, birds, and especially yucca moths (*Tegeticula* sp.).

This issue of *Wildflower* also includes excellent articles on the flora of southern New Mexico's Organ Mountains, where floraphiles can find 4 major vegetation zones, 4 endemic plants, and 29 species of ferns (p.28-33). Perhaps most important, Editor James Hodgins has reprinted "Microbiotic Crusts," by Jane Belnap, a noteworthy article that might otherwise have been seen only by the small number of *Park Science* readers. Belnap explains how the crusts composed of lichens, mosses, green algae, microfungi, bacteria, and—predominantly—cyanobacteria hold together soils throughout the arid regions of the world, such as the Colorado Plateau. Alas, ORV drivers and cows, not having been duly informed of the functions served by filamentous cyanobacteria, are wont to crush these cryptogamic crusts.

"Why Clean Birds?" by Jim Nollman; *The Interspecies Newsletter*, winter 1992. Perhaps no one else has so eloquently explained why bathing the victims of oil spills is worth the immense time and cost involved. Understandably, some biologists have questioned the allocation of limited monies to save tiny percentages of the birds and otters who become coated by oil after spills. Jim Nollman, in *Interspecies Communication's* excellent quarterly newsletter (\$25 membership: IC, 273 Hidden Meadow Lane, Friday Harbor, WA 98250), answers with an appeal to compassion. We need, he reminds us, to relate to other creatures as individuals, and not always collectivize them into species, ecosystems, or biodiversity.

"Radical Environmentalism," by Franklin Rosemont in *Encyclopedia of the American Left*, 1990, Garland Publishing; to be republished in 1992 by University of Illinois Press. Poet and historian Franklin Rosemont looks at this country's conservation and environmental movements, on the one hand, and Leftist political movements, on the other, and finds considerably more interdigitation than either commonly acknowledges. Rosemont cites numerous conservation luminaries—including John Muir, Robert Marshall, Rosalie Edge, and Benton MacKaye—as leaders who leaned left. Rosemont's article deserves a wider readership than it is getting through this little-known tome.

"The History and Tree Stratum of an Old-Growth Forest of Haut-Saint-Laurent Region, Quebec," by Jacques Brisson, Yves Bergeron, Andre Bouchard; *Natural Areas Journal*, 1-92, p.3-9. After reading this important article, you may think you have an answer to the age-old question of whether history is cyclical or linear: It is neither, and both; but even more, it is ironic and paradoxical. Biologists recently discovered in southern Quebec what is probably the northernmost remnant of the original Eastern Deciduous Forest—within that terrible swath of destruction that prevents large carnivores in not-yet-defiled Canada from migrating south to recovering-but-imperiled northeastern US. It was saved by a farm family named Muir, but its future is uncertain. Only 11 hectares in size, this old-growth remnant probably has not fully enjoyed the benefits of a natural disturbance regime, but neither has it suffered anthropogenic disruptions. The only major human-related damage to Muir's Wood has come from Dutch elm disease, which has killed most of the American elms. Already, this old-growth tract is causing biologists to reconsider some of the standard assumptions about the range and dynamics of the Eastern Deciduous Forest. Yet the forest's health, and the biologists' ability to learn from it, may soon be impaired. The land has been sold, and the new owners want to tap the sugar maples—the major component, along with American beech, of Muir's Wood. Trees in this part of the continent are already stressed by acid rain. To subject these 200-300 year old maples to the additional stress of tapping is nigh on blasphemous. Canadians may want to pressure elected officials and environmental groups to buy Muir's Wood. For the story, join Natural Areas Association, 320 South Third St., Rockford, IL 61104.

See also in this issue of *Natural Areas Journal* "Conservation of Old Growth: A European Perspective," by George Peterken. This article shows that Europe still has many small forest remnants displaying varying degrees of old-growth integrity—from old, secondary, unmanaged woodlands to virgin forest tracts. Most of the latter are in northern Scandinavia and southeastern and central Europe (especially Czechoslovakia). British conservationists recognize, and the author urges Americans to recognize, the value of all forest remnants displaying a significant degree of naturalness.

"Art Against Nature? What We Learn from Christo," by Rhonda Roland Shearer, fall 1991 *International Friends of Transformative Art newsletter* (14626-A North 78th Way, Scottsdale, AZ 85260). Christo's latest piece of "environmental art" was *The Umbrellas*, a \$26 million incursion into the California desert

involving tons of metal and cement and holes dug into the ground. Decrying the notion that "artistic intentions" "sanctify the end product," the author (a sculptor herself, and the co-author of *Chaos, Fractals, Art: Geometry of a New Frontier*, to be published next year) argues that most artists—notwithstanding their avant garde pretensions—historically have reflected the establishment's denigration of Nature. She sees hope, however, in the increasing prevalence of plants in art, presented as ends in themselves, not as mere backdrops, and in the influence that fractals and chaos theory are having in art as well as science.

"Desert Restoration: Revegetation Trials on Abandoned Farmland," by Laura Jackson, Joseph McAuliffe and Bruce Roundy; *Restoration & Management Notes*, winter 1991, p.71-79. The Society for Ecological Restoration is well served by the twice-yearly *R&MN* (\$15/yr from Journals Division, 114 N. Murray St., Madison, WI 53715), and all libraries should subscribe. Of particular interest in this weighty issue (as fat as *Wild Earth*!) is the article on restoration efforts in the lowland desertscrub of the Sonoran Desert. Erratic rainfall makes special techniques, including mulching and repeated plantings, necessary for reestablishment of natives. This issue has 4 particularly significant essays. *R&MN* Editor William Jordan III discusses restoration as ritual, as a way to renew our ties with Nature.(p.64-5) Gail Newton calls for a clear, strict definition of "restoration," warning that some of what goes under that heading now is mere rehabilitation.(p.69-70) Eric Katz argues that restoration is an anthropocentric concept; active restoration work may be necessary, but it should be done with the realization that we are creating artifacts, not natural ecosystems.(p.90-96) Eric Higgs suggests ecological restoration is the type of "engaging [with Nature] work" necessary if we are to overcome the technological paradigm.(p.97-104) Then, descending reluctantly from the ether, we reach the bulk of the field work findings in "Notes and Abstracts." (p.105-161)

"Dinosaurs in the Haystack," by Stephen Jay Gould; "Bound for Deep Water," by Scott Eckert; "Civilization and its Discontents," by Katherine Milton; "Jekyll-Hyde Mushrooms," by George Barron; "Tickling for Ticks," by Randall Breitwisch; *Natural History*, 3-92. Trot down to your local library and peruse the latest *Natural History*. You'll read about fungal predation, avian mesmerization, cross-cultural contamination and other subjects that should turn the most thoroughgoing humanist into a defender of the natural world. Consider: Recent observations support the theory that the

Cretaceous extinctions occurred rapidly, about 65 million years ago, perhaps due to an asteroid hitting Earth. Leatherback sea turtles may weigh 2000 pounds, can dive 4000 feet, have survived over 100 million years...but may not survive the age of plastic. "In Amazonia, the acquisition of a metal cooking pot can overturn a way of life." Some saprophytic fungi are predators as well as decomposers. Oxpeckers in Kenya apparently communicate with and even mesmerize the large herbivores upon which they find and eat ticks and other ectoparasites.

"Save Wild Greece," **Western Canada Wilderness Committee Educational Report**, vol. 10 #6, spring 1991; text by Stamatis Zogaris. Wetlands of international importance, flowers of endemic distribution, raptors with wingspans measured in meters...they are all part of Greece's extraordinary biodiversity and all imperiled by the usual intrusions: livestock, loggers, tourists, etc. Western Canada Wilderness Committee (WCWC) published this factually rich tabloid as part of its international WILD (Wilderness Is the Last Dream) campaign. You can contribute to the Greek Wilderness Fund and join British Columbia's most prominent wilderness group by sending \$25 or more to WCWC, 20 Water St., Vancouver, BC, Canada V6B1A4.

"Health Is a Sustainable State," by Maurice King; *Focus*, winter 1992, p.8-11. Carrying Capacity Network has begun publishing a quarterly which reprints current and classic articles on population and environmental issues, and adds original editorials and interviews. This second issue has an amazingly frank discussion from Britain's prestigious medical journal *The Lancet* (9-15-90) on the demographic trap and its implications for public health programs in the Third World. Sadly, the demographic transition theory has proven untrue in many poor countries. Improving economic conditions and thereby lowering infant mortality does not necessarily lower fertility, which fact calls into question the wisdom of providing public health programs to nations caught in the trap of increasing population and poverty.

See also in this issue the contrasting arguments by Paul Ehrlich and Garrett Hardin. Ehrlich thinks overpopulation must be dealt with at the global level; Hardin thinks only local or regional solutions will work.

Individuals can join Carrying Capacity Network for \$30 or subscribe to *Focus* for \$20. Non-profit groups can join for \$50 (or \$85 if the group has over 15,000 members): 1325 G St NW Suite 1003, Washington, DC 20005-3104.

Announcements

Sixth Annual Forest Reform Pow Wow

From coast to coast, hundreds of forest protectors will Pow Wow June 12-14 at Massanetta Springs, Virginia, in the Shenandoah Valley, to carry the message of reform within two hours drive of the nation's capitol. With 325 wooded acres, less than 30 minutes from the George Washington National Forest, Blue Ridge Parkway, and Shenandoah National Park, Massanetta Springs is the ideal place to which to invite media, congresspersons, newcomers, and presidential candidates.

The Center has campgrounds, cabins, meeting rooms, and an auditorium. The staff offers meals. Virginians for Wilderness is the local host, with Ernie and Sue Reed making the arrangements.

This Sixth Annual Forest Reform Pow Wow will be the easternmost and most participatory Pow Wow in our ever-growing grassroots movement. Field trips will inspect logging and "New Perspectives" in George Washington National Forest, and an old-growth stand. Many Networkers will go on to Washington, D.C. on Monday June 15, to visit congresspersons. Registration costs \$25 per person. Meals and lodging are bargains. Get your group to name you as its representative to the Pow Wow and to sign on as a co-sponsor of the event. For registration forms, write Forest Reform Network, 5934 Royal Lane, Suite 223, Dallas, TX 75230.

Friends of Wetlands (FOWL)

Friends of Wetlands was formed in 1991 as a response to the national legislative and administrative attacks on wetlands protection. In its brief existence FOWL has met with Congressman Pease about environmental protection, co-sponsored a meeting to educate the public about the proposed revisions to the 1989 Federal Wetlands Manual, contacted the Army Corps of Engineers regarding 404 permit applications for activities in wetlands, and developed dialogue with the area's scientific community.

Please write to us with your concerns. Membership in FOWL is \$5. We welcome contributions to help with printing and mailing. John Katko, Friends of Wetlands, POB 2016, Elyria, Ohio 44036.

PAW Projects

Preserve Appalachian Wilderness Network (PAW Net) is a non-profit umbrella corporation with 501(c)3 status, containing financial, legal, and conservation biology advisory boards. PAW Net will aid PAW activists financially, legally, and ecologically. Among PAW Net's projects are the Preserve Appalachian Wilderness Eastern National Forest Task Forces. According to the Final Environmental Impact Statement for the Resources Planning Act Program, the US Forest Service plans to triple its timber cutting and road-building on eastern National Forests over the next thirty years. PAW has successfully appealed some of the timber sales already.

According to a report in a timber industry news-

letter, "Preserve Appalachian Wilderness, has targeted timber sales in nearly every national forest east of the Mississippi, and has been working to stop Forest Service timber sales by filing last-minute appeals and threatening to take their case to the supreme court, if necessary."

For more information on PAW and a handbook on getting involved in our National Forest Task Forces, write us: Preserve Appalachian Wilderness Network (PAW Net), POB 52A, Bondville, VT 05340 (802-297-1022). All donations are tax deductible. PAW Net is a project of the David Brower Fund, Earth Island Institute.

Wilderness Outlook Legal Foundation

The PAW movement has given birth to the Wilderness Outlook Legal Foundation (WOLF), a not-for-profit activist resource and public interest law firm. WOLF's Scientific Organizing and Networking Group (WOLFSONG) is being coordinated by conservation biologist Jeff Elliott and environmental educator Janine Elliott at the former PAW Network headquarters, 81 Middle Street, Lancaster, NH 03584 (603-788-2918). Attorney Cindy Hill is coordinating legal administrative matters from her law offices at POB 421, Goshen, MA 01032 (413-268-3148). WOLF will provide scientific and legal services to grassroots groups advocating wilderness restoration and biological diversity, as well as embark on independent projects.

Forest Guardians Raft Trip

Forest Guardians is offering a Summer Solstice Raft Trip down the Rio Grande with Dave Foreman, June 20-21, 1992. The trip, a fundraiser on behalf of the forests of the Southwest, costs \$500 per person. Space is limited. Make a reservation with Forest Guardians, 612 Old Santa Fe Trail, Santa Fe, New Mexico 87501 (505-988-9126).

Clearcut: the Destruction of North American Forests

"Clearcut" will be an exhibit format book telling the story of the destruction of North American forests by government agencies and timber corporations. Using strong visuals and original essays by visionary writers on forests and human relations with forests, we seek to create an intense emotional response which will motivate the reader/viewer to work for the protection of forest ecosystems. Those already committed to contributing essays include Dave Foreman, Chris Maser, Alan Drengson, and Reed Noss.

We are seeking slides or prints of forest practices and interrelationships in the forest. Photographers will be fully credited. We solicit photographers on a pro bono basis, but have some money allocated for travel to photograph in bioregions not yet represented. We especially need photos of forests in eastern Canada and the US Southeast and Midwest.

With the cooperation of many environmental and social groups, consumer groups, women's groups and

sympathetic professional foresters, we plan to distribute this book widely as part of a public relations campaign to protect remaining ancient forests and enact ecosystem management legislation in the U.S. and Canada. This is a project of Earth Island Press and Ira Hiti Foundation. David Brower is consulting editor of the project. Bill Devall is editor-in-chief. Additional information on the project and specifications for photographers can be obtained from Bill Devall, POB 613, Trinidad, CA 95570. or FAX us at 707-822-5880. PLEASE CONTACT US BEFORE THE END OF APRIL.

John Seed Tour

In April/May, following tours in New Zealand and Australia, John Seed will spend a month in the states: April 17-19 Council of All Beings, Ocean Song, Sonoma County, CA, followed by a Council of All Beings training April 19-21 (707-874-3913); April 25 Council of All Beings and rainforest presentations, Whole Life Expo, San Francisco (415-333-4373); April 26 REMEMBERING THE EARTH: a workshop of evolutionary and ancestral memory rituals, with Ralph Metzner, Marin County, CA (707-935-7257); May 1-3 Council of All Beings, Concord, MA, John Goodrich, (617-259-9682); May 8-10 Council of All Beings, Litchfield, CT followed by Council of All Beings training May 10-12 (203-567-5738)

Heartwood Forest Council

The second annual Heartwood Forest Council will be held May 1-3 at Camp Oty Okwa, adjacent to Hocking State Forest in southeastern Ohio. The Council will offer an opportunity to learn about the native forest of the "heartland" and the traditional music and folk culture of the region. Naturalists will lead forest hikes, and workshops will provide training for public participation in the decision-making and appeals process for the National Forests of the region, including the Wayne in Ohio, the Daniel Boone in Kentucky, the Mark Twain in Missouri, the Monongahela in West Virginia, and other public forests. Educational programs for children will be provided. Admission will be charged.

Heartwood is an association of groups and individuals dedicated to the health of the native forest of the Central Hardwood region which once extended from the Appalachian Mountains to the Ozarks, and from the Tallgrass Prairie to the Great Lakes. For more information, contact Joe Hazelbaker (614/299-4529) or Andy Mahler (812/723-2430) Rt 3 Box 402, Paoli, IN 47454.

The Boycott Monthly

Each issue of *The Boycott Monthly*, which began publication in 1991, presents in depth a single, current boycott, triggered by a social justice and/or environmental issues. The newsletter's author, Zachary D. Lyons, gives corporate addresses to which to write as well as products to shun. Lyons created the newsletter as a resource for grocery cooperatives, but it is also useful for individuals. Published by the Center for Economic Democracy, POB 64, Olympia, WA 98507, it costs \$35 a year (\$40 to Canada), except to corporations and for-profit media, who should inquire as to rates.

Earth First! Journal Index

An Earth First! Journal index is now available. It covers all nine years of production, from 1981 through 1990. For copies, send \$3 to Nancy Zierenberg, POB 5784, Tucson, AZ 85703. (Sorry, back issues of EFLJ are no longer available.)

Forest Protection T-Shirts

Jim Morris Environmental T-Shirts is now selling several handsome shirts that call for forest preservation. For a free catalog of Jim Morris's shirts contact the company at POB 831, Boulder, CO 80306.

Forest Action Resources

Save America's Forests, a nationwide coalition of groups, businesses, and individuals, has released a 48-page Citizen Action Guide, packed with valuable information. Topics include how to lobby in Washington, DC, how to work with the press, tips for fundraising, and analyses of legislation before Congress as of January, 1992. The guide, which may be freely photocopied, costs \$5 postpaid from the coalition at 4 Library Court, SE, Washington, DC 20003 (202-544-9219).

Save America's Forests has also inaugurated a news service. The press department invites regional forest protection groups to submit news stories, which it edits and compiles into brief releases that it distributes weekly by fax or mail. The service can get out messages to several hundred environmental reporters across the country or supply address labels. Groups may be charged for telephone time, if the service's budget cannot absorb the cost.

Deep Ecology Workshop

The 1992 Way of the Mountain Learning Center - Deep Ecology Workshop will be held in Silverton, CO from August 17-21. Workshop presenters include George Sessions, Dolores LaChapelle, David Abram, and Max Oelschlaeger. Registration for the week is \$350 which includes lunches, materials, and a banquet. For more information write to the Way of the Mountain Learning Center, POB 542, Silverton, CO 81433 or call (303) 387-5729. Registration is limited.

Round River Conservation Studies

Round River Conservation Studies is an ecologically-oriented research and education organization dedicated to preserving and restoring wildness and to fostering awareness of the rights of nature. Round River field investigations determine, through non-invasive research techniques, the degree of wildness or health of a region by measuring species richness in relation to land use characteristics, water quality, and soil biology. Resultant policy recommendations outline measures to restore and maintain the bioregion's wildness. To help implement policies, Round River conducts local forums and works with residents to form effective local organizations. Round River academic programs are available to high school juniors and seniors, college students, and adults. The program seeks students from the local area and from various cultural backgrounds.

Round River is currently developing study sites in three locations: the San Juan Mountains of southern

Colorado, the La Sal Mountains of southeastern Utah, and the Cockscomb Jaguar Preserve of Belize. The San Juan and La Sal projects need student assistants.

Round River Conservation Studies is an independent program of Salt Lake Community College. For information contact Round River Conservation Studies, Programs Department, 307 West 200 South #5003, Salt Lake City, UT 84101. The college accepts donations in support of projects and student scholarship programs are accepted by the college.

Society for Conservation Biology Meeting

The Sixth Annual Meeting of the Society for Conservation Biology will be held at Virginia Tech, June 27-July 1. The meeting will be cosponsored by the Wildlife Society. The program will include four symposia: Managing Forests for Neotropical Migrants; Marrying Theory and Practice to Conserve Biological Diversity; Conserving Diversity: Where We Have Been, Where We Are Going; and Conservation and Sustainable Development. For information about the program and abstracts, contact Jim Fraser, Department of Fisheries and Wildlife, Virginia Tech, Blacksburg, VA 24061 (703-231-6064). For registration information contact the

Conference Registrar, Donaldson Brown Center at Virginia Tech (703-231-5182).

Natural Areas Conference

The 19th Annual Natural Areas Conference and 14th Annual Meeting of the Natural Areas Association will be held on the Indiana University campus in Bloomington, Oct. 27-30. Titled Rediscovering America: Natural Areas in the 1990s, the conference will give participants a chance to interact through presented papers, posters, field trips, and workshops. Conference topics will include forest fragmentation, old-growth forests, restoration of ecological communities, building big reserves, and climatic change. The association is soliciting papers and posters on these and other topics relating to natural areas. Those interested should submit five copies of an abstract by May 31 to Cloyce L. Hedge, Division of Nature Preserves, 402 W. Washington St., Room W267, Indianapolis, IN 46204. Inquire at this address as to the format of the abstract. Registration information will be available in late July from Natural Areas Conference Registration at the above address. (Members only will automatically receive information.)

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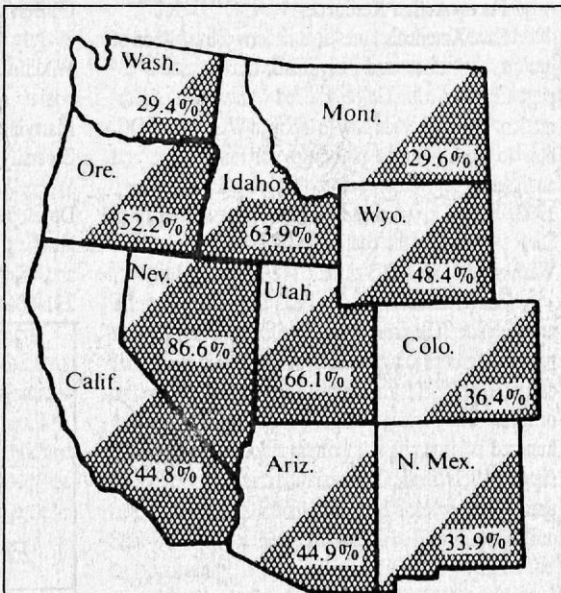


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- Elimination of natural fire
- Degradation of ecosystems

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