



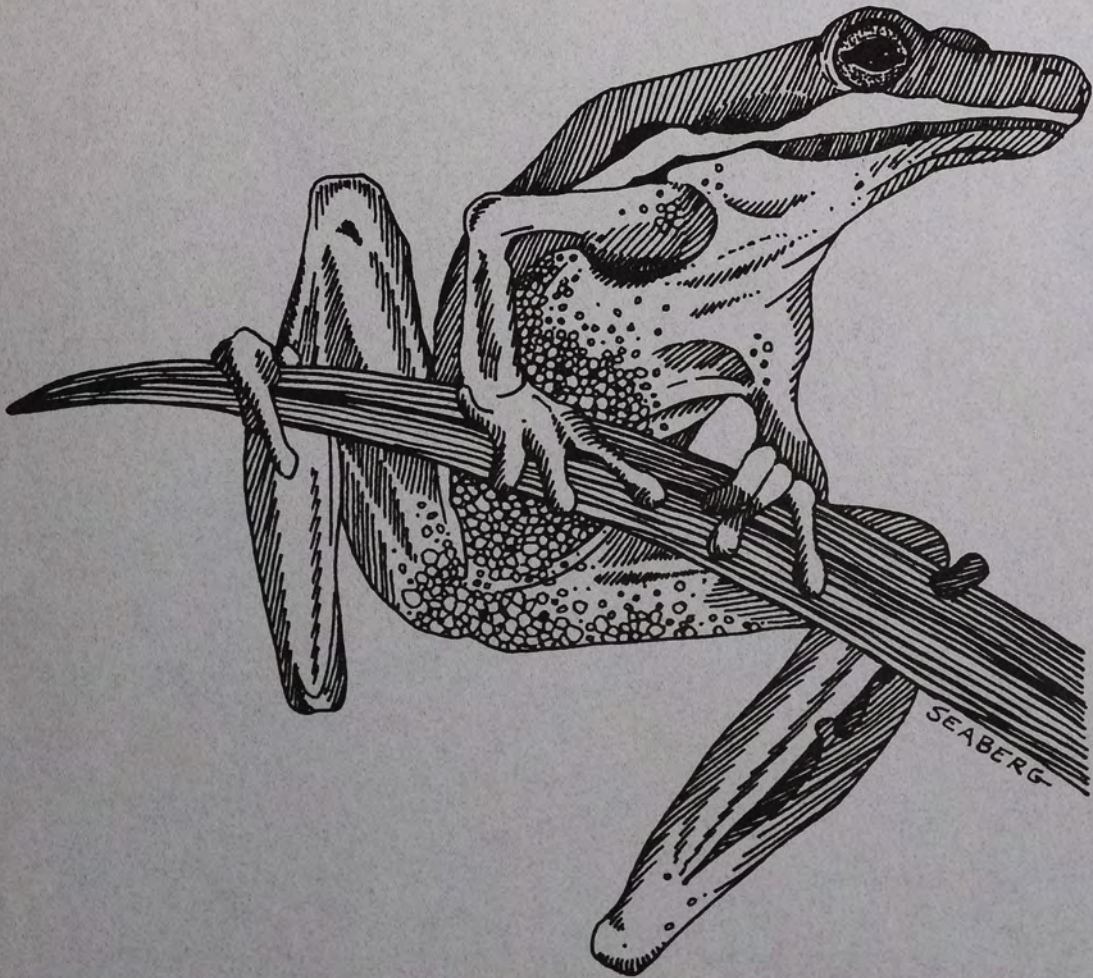
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Spring 1993



In this issue:

*Forests of the Amazon • The North Woods
Southern Ozarks • British Columbia
Red-cockaded Woodpecker • Perdido Key Beach Mouse
and other Endangered species*

Around The Campfire

"Tiger!"

Malcolm's cry rips me away from the saltator I'm trying to identify in a thick shrub. I twist around. He's pointing across Monkey River to a spot directly opposite my father-in-law, Bob Morton, who is flyfishing for snook from the sandy beach.

I dash down beside Bob. Across the river, fifty feet away, I see the movement of a large animal in the tall grass beside the river. That's all I see, no matter how hard I strain my eyes and imagination. Then there is nothing. But Bob saw the black rosettes on orange fur. Jaguar. *El Tigre* as Mexicans and Guatemalans say. Tiger as Belizeans like Malcolm say.

Here in the coastal forest of Belize in Central America I've come close to the largest cat in the Western Hemisphere, to the most perfect predator in its range from northern Argentina to southern Arizona. To my totem.

Big predators rivet our attention as no other creatures do. If we can open our souls, they can teach us humility; unless we learn humility from them, they may not survive the lifetimes of those humans recently born.

On the new poster publicizing my lectures (produced with a generous grant from Patagonia), my agent, George Greenfield, prints a quote from me that he found in some obscure location. I say, "I'm a product of the Pleistocene epoch... I do not want to live in a world without jaguars and great blue whales and redwoods and rain forests, because this is my geological era, this is my family, this is my context. I only have meaning *in situ*, in the age I live in, in the late Pleistocene."

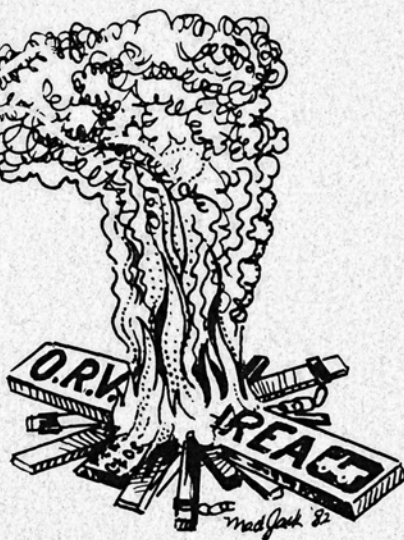
At *Wild Earth* and The Wildlands Project we focus on large predators because they are the quintessential wilderness-dependent species. Moreover, if populations of large predators are present and healthy, you can be sure that most of the rest of the land community is in good shape as well.

We conservationists are often asked what is an optimum population for humans in the United States or other geographic locations large and small. Monique Miller, a dynamic staff person for Carrying Capacity Network, asked me just that last month in an interview. I suppose I was still reeling from my encounter with the Jaguar, so I offered that a human population is within carrying capacity if all native large predators are present in healthy, linked populations. A country or a region is overpopulated if cats, bears, wolves, crocodiles, and such have been extirpated, or are in decline or in small fragmented populations, or are threatened with such.

As I chew on this definition of human carrying capacity and overpopulation, I like it all the more. I believe it may prove to be the best test for determining how near we humans are to right livelihood.

Two similar factors for determining if human population and land use are within the land's carrying capacity are 1) whether natural processes like wildfire run unimpeded, and 2) whether soil microorganism populations are healthy and diverse. I'm sure some of you can think of other ecological tests for determining optimum human population in a place. Send me your ideas at *Wild Earth* and we may run a feature on this topic in the future.

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On the cover: (In appreciation of the considerable contributions of amphibian aficionado and conservation biologist Michael Soulé)—Green Tree Frog (*Hyla cinerea*) by Kurt Seaberg.

SPRING 1993 WILD EARTH 1

It's What We Do...

The response to the Special Issue of *Wild Earth* on The Wildlands Project has been overwhelming. When I last spoke to *Wild Earth* business manager Marcia Cary, she told me that new subscriptions generated by the special issue were in the hundreds. Thanks for your response, and welcome to *Wild Earth*. Even Marcia is happy and wants to welcome you, though she's having to put in seventy hour weeks to enter all your new subscriptions! Old subscribers are renewing with record promptness as well. Thanks to you all, too!

You veteran subscribers have probably noticed how the appearance and layout of *Wild Earth* keep getting better. That's partly because of the excellent artwork we receive, but Tom Butler, *Wild Earth* art director, is the person most responsible for the crisp, distinctive look of this magazine. I'm no whiz at layout and design (anyone who remembers the *Earth First! Journal* during the years I was doing the layout will thoroughly agree), but I know a good looking publication when I see it—and Tom and our many artists put together a fine one. Tom, John Davis's best friend since high school, is also deeply involved in other publishing, editorial, and management duties at *Wild Earth*. It's a pleasure and honor to work with him.

After I express this Campfire off to Canton, Nancy and I will throw the raft and ammo boxes in the truck and dash off to take advantage of high water on the Gila River for a three day trip. Maybe the Black Hawks are back for the summer. See you on the river...or on the trail. Happy Trails.

—Dave Foreman

Gila Box National Riparian Area

Several months ago, while Kathleen was promoting the Buy Back The Dacks Fund at a conference near the Adirondacks, a snowmobiler challenged her saying, "I bet you folks just want to buy this land and set it off limits to snowmobilers and hunters." Kath coolly responded, "Sorry pal; it's *what we do*," and that became a *Wild Earth* staff motto, which we'll use here as a headline for our staff notes. Marcia, Kathleen, and Tom will give some idea of the focus of the Northeast contingent of the *Wild Earth* staff. I simply want to offer a bit of inside news: mention of projects under way, who's doing what, who's seeing whom, and such.

So ... we saw a Bald Eagle and Jasper Carlton on our recent journey West. The eagle was better looking, but Jasper was far more loquacious. Jasper and the Biodiversity Legal Foundation have helped win several major gains for imperiled species lately, as reported in this issue. Last issue *WE* covered BLF's effort to gain protection for the Mexican Spotted Owl. The owl has since been given Threatened status. In this issue, we report on other matters pertaining to the Endangered Species Act, as that forms a subtheme for this issue.

Our ongoing theme, as said in these pages before, is the North American Wilderness Recovery Strategy—The Wildlands Project. Below, Kath talks a little about the recent Wildlands Project board meeting.

WE staff want to thank all the people who made the *Wild Earth* and Wildlands Project meetings in Arizona successful. Special thanks go to Kris Sommerville, Nancy Morton, Roxanne Pacheco, Nancy Zierenberg, Kelly Treese, David Johns, and Rod Mondt (who planned meeting logistics); and to Lynne Butler (Tom's sister, who has counseled us on fund-raising and hosted a gathering of Colorado wildlands activists wherein Jasper regaled us).

Toward helping make 1993 a watershed year for North American conservation, *Wild Earth* will focus on three extra projects this year in addition to producing this quarterly periodical: promoting the Buy Back The Dacks Fund (see below), producing a second *Wild Earth* Wildlands Project Special Issue, and publishing in book form an updated survey of old growth forest tracts in the East. Associate Editor Mary Byrd Davis (currently working out of her office in KY) is finishing research for the book and we plan to have it out in time for the Eastern old-growth conference next August (see Announcements, this issue).

More good news: *Wild Earth* Science Editor and The Wildlands Project Science Director Reed Noss has been named the new Editor of *Conservation Biology*. This is sure to further enhance the cooperation between conservation activists and conservation biologists. (Outgoing *CB* Editor David Ehrenfeld, who is leaving the *CB* post to free himself for more writing, recently completed a superb book, *Beginning Again*, which I recommend to all people concerned about humanity's ill relationship with Nature.) Congratulations Reed!

—John Davis

When I took the job as *Wild Earth* business manager, I promised myself and the Cenozoic Society Board that in my effort to increase subscription levels, I would not lose sight of the importance of the hands that pick up *Wild Earth* to read, the hearts that *Wild Earth* stimulates to action, and the minds that *Wild Earth* helps to open. After five months of reading your letters of support and enthusiasm, it has occurred to me that it would be wise to try to employ your hearts and minds to reach more people. After all, a publication is only as good as the readers it inspires.

I often read letters from people who want to help but don't think they have the time or the means. Here is a suggestion straight from the galley. When going to your favorite bookstore, co-op, library or any other place of real living, take a copy of the latest *Wild Earth*. Ask if they would be interested in selling it or subscribing to it. Exercise that dogmatic economic theory of supply and demand: voice your desire to see it on the shelves. This will not only help *WE* but ultimately it should help the very creatures we hope to protect.

To reach as many people as possible and to be effective, in this age of fast information, a publication must employ modern technologies (much to our Editor's dismay). The Canton office of *WE* thus finds itself in need of a few more pieces of equipment. We would sincerely appreciate contributions of the following: photocopier, laser printer, MacIntosh computer (preferably a Mac Classic or newer), and of course, enough coffee beans to keep the Wild Earthlings operating both themselves and these machines.

Readers will notice that the cost of a 1993 annual membership to the Cenozoic Society has risen slightly. Since *Wild Earth's* premier issue, its size has increased roughly 25%. We bring you many more articles by the planet's most thoughtful conservation biologists and activists—but our production costs have increased as well. We hope readers will not begrudge *WE* the extra few bucks...Thanks!

—Marcia Cary



...Yeah, It Is

After a week and a half venture cross country, starting in the frigid cold of Canton, passing through the glorious Rocky Mountains, running barefoot in the dunes of White Sands National Monument, and camping in the Dragoon Mountains (not to mention the endless hours of claustrophobic giddiness in the car), the *Wild Earth* staff arrived in Tucson for The Wildlands Project meetings. Held outside Saguaro National Monument, the meetings were productive, and I'm happy to report that the Project is running smoothly and vigorously.

The Wildlands Project Clearinghouse is in action (except the temporarily broken elevator to Rod's penthouse office), and support for North American Wilderness Recovery is widespread. All but two of the Board members were able to attend the meetings, and it was a pleasure brainstorming with the crew. The Board should be applauded, along with the various activists and grassroots groups working diligently for North American Wilderness Recovery. *Wild Earth* will continue to update readers on the progress of The Wildlands Project.

Along with plotting and planning wilderness proposals, implementing land conservation ideas was stressed at The Wildlands Project meeting. *Wild Earth*, in cooperation with The Adirondack Conservancy, has created a pathway for conservation in New York's Adirondacks through the Buy Back The Dacks Fund. The Dacks Fund has been well received—and many generous individuals have shown their commitment to Adirondacks conservation with their checkbooks. (We gratefully acknowledge the Fund's first corporate donor, outdoor gear retailer Campmor.) We will devote considerable time and energy to the Fund, as we feel the Adirondacks deserve and need special aid. We welcome ideas and help with fund-raising projects and publicity. I encourage people to start fund-raising activities in your home regions to benefit Buy Back The Dacks: write an article about the Adirondacks and the Dacks Fund for your local paper; organize an Adirondack walk-a-thon... contact me for other ideas.

Each issue *Wild Earth's* masthead acknowledges the various staff members, artists, poets, editorial advisors and correspondents who contribute to the magazine. I would like to shine a well deserved light (solar, of course) upon another group of people whose contributions are indispensable. Every season 5000+ magazines are shipped to the booming metropolis of Canton to be labeled and mailed. Without the help of Nancy and Todd Alessi, Eric and Andy Williams, Betsy Kepez, Tom and Lee Vandewater, Doug Jones, Whitney Brice, Chris Neurath, Jane Eaton and Chris White, none of our readers would have received the winter issue; and John, Marcia and I would be drinking endless shots of Jim Beam and affixing labels. I'd also like to thank Celeste Poulin for her typing assistance, Don Hassig for his continuous support, Richard Grover and Robin McClellan for their insights, Ray for his patience in the post office, Peggy and Paul Clements for their endless supplies, Jamie Todd for office help, and Bird's Foot Farm for the superb organic vegetables. Finally, the magazine would be hand-written without the assistance of Dwight Tuinstra, our computer consultant. Many thanks to you all; we could not do it without you!

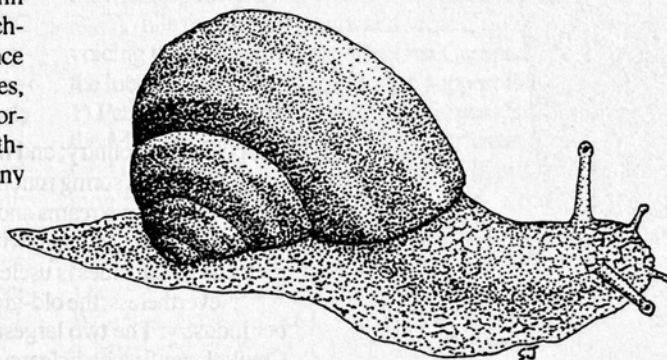
—Kathleen Fitzgerald

Splendiferous snails! Unlike John Davis, I was not privileged to be a charter member of what is reputedly the world's second fastest growing conservation group, Friends of the Gastropods (FG). I am honored, though, to be a recent convert to the ranks of slug lovers. One can imagine my pleasure, then, at the timely response of artists to John's recent plea for depictions of members of the class Gastropoda. Lovely! Look for many snails in forthcoming issues. Artists should take note that our archives are particularly short of botanical illustrations. We encourage submissions also of other, seldom-drawn species: spleenworts, bladderpods, hagfish, damselflies, dung beetles, and such would be especially prized. When appropriate, artists should include common and scientific names with submissions.

A note on advertising. *Wild Earth's* mission is clear and we will not turn into a glossy purveyor of green gadgetry and eco-porn (see José Knighton's essay this issue). We do however, accept a small amount of display advertising from like-minded groups and individuals. Most of these small business people are also committed wildlands activists—like Rick Meese of Treecycle and Jim Morris of Jim Morris Environmental T Shirts. Jim's catalog is as much an educational as a marketing tool, directing readers toward active involvement in wildlife conservation efforts. Additionally, Jim and his staff give a percentage of their profits to conservation groups (the Wild Earth Research Fund was a recent recipient).

A new advertiser in this issue is The Organic Coffee Company. Though we are aware of the ecological ramifications of coffee production, the *WE* staff's appreciation for—nay, addiction to—coffee (or, as the Lakota say, "pejútasapa" = roughly "black medicine") is a vice we're content to live with. The Editor's many idiosyncrasies notwithstanding (not the least of which is his sesquipedalian tendency), we do find John's coffee rituals helpful in promoting office productivity. He is wont to brew up a truly facinorous cup of Joe... as John says, "if the spoon stands, it's probably strong enough." So, until industrial civilization collapses (or you kick the coffee habit), consider buying beans from the folks at The Organic Coffee Company, as well as supporting the other advertisers in *Wild Earth*.

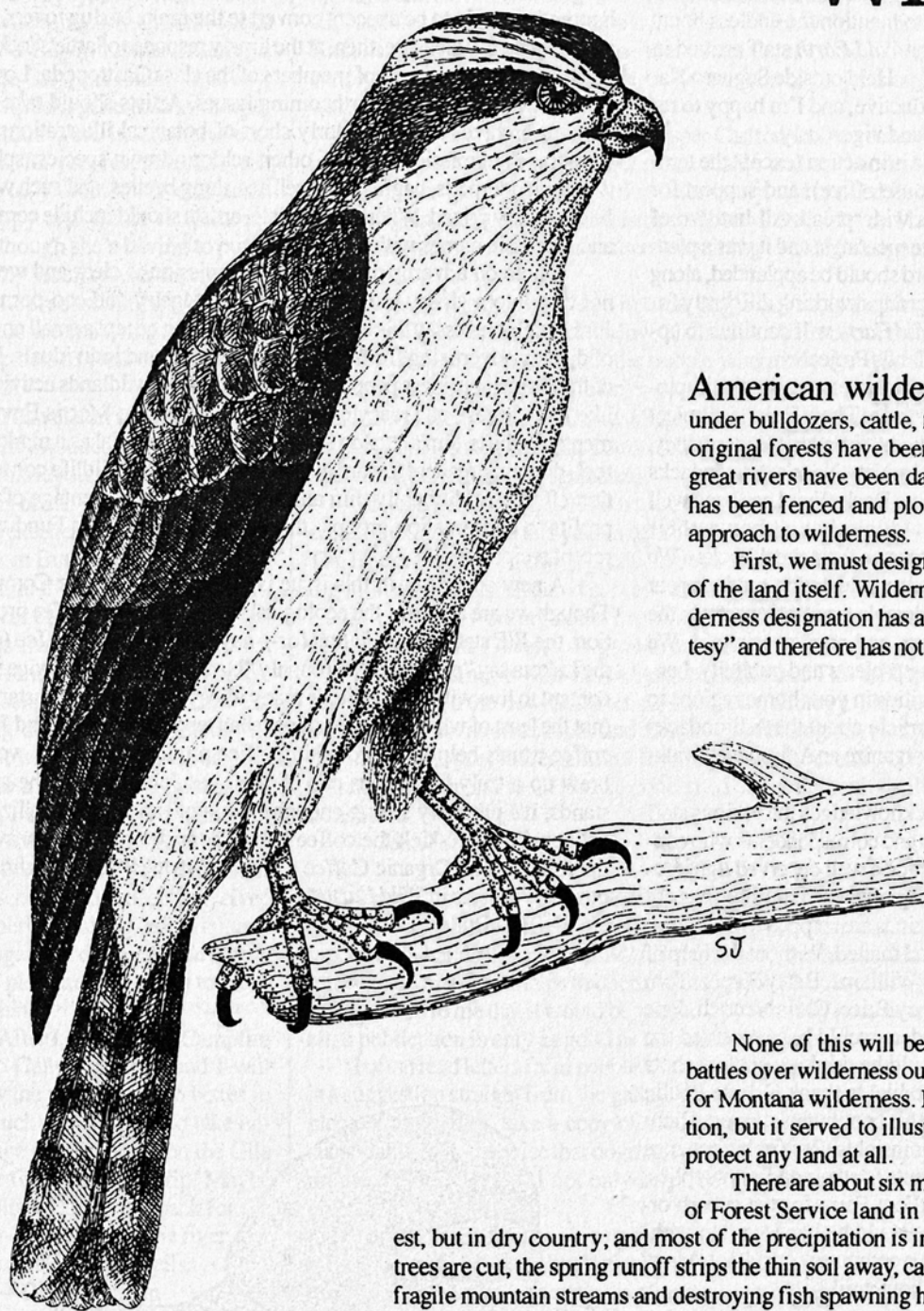
—Tom Butler



Roman Snail (*Helix pomatia*) by Sky Jacobs

Wilderness, Now!

by Margaret Hays Young



American wilderness is disappearing fast, under bulldozers, cattle, fellerbunchers, and the like. Most of the original forests have been cut: less than 5% remains. Most of the great rivers have been dammed and polluted, most of the prairie has been fenced and plowed or grazed. It is time to take a new approach to wilderness.

First, we must designate wilderness areas based on the needs of the land itself. Wilderness needs to be vast. State-by-state wilderness designation has always been hostage to "Senatorial Courtesy" and therefore has not worked. The little pockets of "wilderness"

we can create under this system are far too small to be ecologically viable. Wherever large, intact areas of habitat survive we must protect them as wilderness now.

Second, we must also designate land for future wilderness. We need to define large areas for restoration, and protect them from any further exploitation or development.

THE BATTLE FOR MONTANA

None of this will be easy. This past year saw some serious battles over wilderness out West. The hardest fought was the battle for Montana wilderness. It produced no new wilderness designation, but it served to illustrate just how difficult it has become to protect any land at all.

There are about six million unprotected but still roadless acres of Forest Service land in Montana. Much of it is old-growth forest, but in dry country; and most of the precipitation is in winter, in the form of snow. When the trees are cut, the spring runoff strips the thin soil away, causing disastrous mudslides, choking the fragile mountain streams and destroying fish spawning habitat. There is little potential for forest regeneration in Montana: with the shallow soil and the dry climate, replanting into the scoured, rocky mountainsides is useless. In Montana, logging is a one-time-only proposition.

Nevertheless, the old-growth forests of the Northern Rockies are being devoured by the timber industry: The two largest timber companies in Montana, Champion International and Plum Creek, have finished clearcutting all their private holdings, about 900,000 and 800,000 acres, respectively. In September 1991, Champion announced it would close its mills and sell off its damaged land, clearly implying that if it were not allowed to clearcut the National Forest lands (the above-mentioned 6M acres), it would pull out of the state.

Northern Goshawk (Accipiter gentilis) by Sky Jacobs

This threat was far more effective than it ought to have been. Notwithstanding the timber industry propaganda about jobs, the University of Montana's Economics Department Chair published a study last year showing that if every remaining tree on National Forests in Montana were protected, it would 'cost' no more than 600 jobs, directly and indirectly. At the current rate of job growth in Montana, those would be replaced by new jobs in about 6 weeks. Montana needs its forests far more than it needs Champion, yet that reality is lost on the public, so far.

It has also eluded Montana's Senators. Soon after Champion's announcement, Senator Max Baucus introduced what he called a Montana Wilderness Bill, which he bragged would deliver "99% of the suitable timber base" to the timber industry. What little wilderness the bill would have designated was classic "rocks and ice"; that is, land with no trees on it, which the timber industry didn't want anyway. Worse, Senator Baucus's Montana Timber Bill contained release language, drafted by timber industry lawyers, which would have guaranteed them unrestricted access to all Federal land not protected, (i.e. all the land with trees on it). It would also have denied water rights to the Wilderness Areas it did designate, and would have prevented judicial review (lawsuits) over the timber sales.

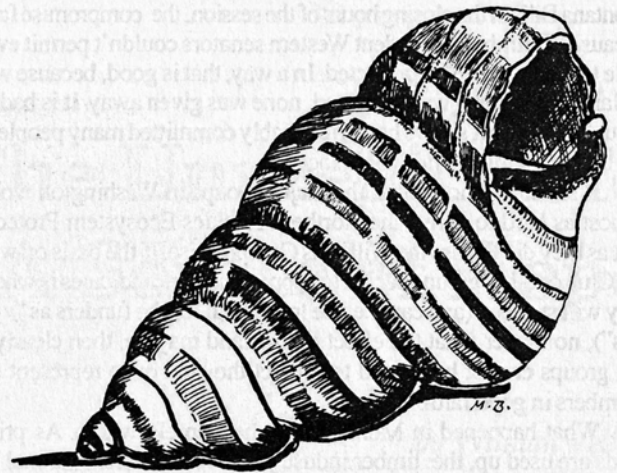
Now, Max Baucus is a very powerful Senator, and occasionally he votes the right way on safe environmental bills. For that reason some of the lobbyists from the big environmental groups in Washington are keen to stay on Mr. Baucus's good side, regardless of the cost. At this point, the cost looks like 6 million acres of Gray Wolf and Grizzly Bear habitat. Whatever favors Baucus might do environmentalists, he made it clear that saving Montana forests isn't one of them. And because of "Senatorial Courtesy," Max Baucus and Conrad Burns are considered to have absolute veto power over any wilderness designation in "their" state, Montana.

Remember, "Senatorial Courtesy" is not a law, it's just a tradition. It's just "understood" that no senator will vote for a project in a given state without that state's senators' permission. Even though federal land belongs equally to all Americans, senators are in effect permitted to dispose of the federal land in their states as if they owned it. And with big timber, mining, oil & gas and grazing as their major clients, these Western senators have been giving away the wealth of a lot of public land.

When Baucus first introduced the "Montana Wilderness Bill" as it was misleadingly known, the big groups opposed it. In fact, the Sierra Club's Vice President publicly cited the Club's opposition to the bill as proof that we are not the "Let's-Make-A-Deal-Club." Nevertheless, when activists opposing the Montana bill asked the Club's DC office for help, they were refused, as the bill "was going to pass anyway." After months of desperate opposition by the smaller, more progressive groups, 22 senators voted against the bill. Yet the Club shamelessly claimed those 22 votes as a "victory" they had somehow won!

Then the Burns-Baucus bill went to the House, and after much deal-making by the big environmental groups, it emerged in a mildly improved version and the major groups jumped on the bandwagon, supporting it. Never mind that 4.5 million acres of possible wilderness would be sacrificed. The Big 10 (Sierra Club, National Audubon Society, The Wilderness Society, National Wildlife Federation, Defenders of Wildlife, et al.) worked overtime to pass it!

Meanwhile, a much stronger, more comprehensive bill had been introduced: the Northern Rockies Ecosystem Protection Act



("NREPA"), devised by the Alliance for the Wild Rockies. This is the first bioregional wilderness bill. It would designate 20 million acres of wilderness across 5 states (Montana, Idaho, Wyoming, eastern Oregon & Washington), 1000 miles of new Wild & Scenic Rivers, and 2 new National Parks. It would establish Wilderness Recovery Areas and a Wildland Recovery Corps. It is the first bill to offer hope of achieving real wilderness.

Sadly, the big groups have opposed this proposal, claiming it is not "politically realistic" and "could never pass." And because of their opposition, it probably won't. The basis for that opposition remains unclear. Some believe these groups won't support any bill they can't take credit for. Some think that the Washington lobbyists who effectively control these groups' legislative policy care more about protecting their relationships with Congress than about protecting land. Some believe that a measure of jealousy is involved, and this is borne out by the Idaho Chapter's recent attempt to draft another version of NREPA and introduce it with the Club's name on it.

One of the best wilderness advocates in Congress, Pete Kostmayer of Pennsylvania, for two years was intimidated by the Sierra Club and others into not introducing NREPA. Finally when faced with the terrible compromise taking place over Montana's forests, he decided to defy the Club and introduced it anyway. It was a courageous move, and though the NREPA wasn't voted on in 1992, introducing it was the first step toward real wilderness protection.

While the smaller groups and some chapters of the big groups were voicing their outrage at the Montana Compromise, they were told by the lobbyists in DC that they had to support the Montana bill because: 1) Pat Williams had to have a "Wilderness Bill" pass in order to win the Montana election against Ron Marlenee; and 2) the Sierra Club (and their friends) needed a victory. (Williams, a Democrat, was running against Ron Marlenee for Montana's only seat in the House. Marlenee is probably the single most right-wing, fanatical pro-"wise-use" person in the House. Williams, however, is no environmentalist. The argument ran that Montana's voters would somehow turn against Williams and vote for Marlenee if the Montana Compromise weren't enacted. It wasn't, and Williams was elected anyway.)

As it worked out, the Big 10's Big Compromise failed when the Senate refused to accept the modestly improved House version of the

Montana Bill. In the closing hours of the session, the compromise failed, because the timber-dependent Western senators couldn't permit even a little treeless land to be protected. In a way, that is good, because while no land in Montana was protected, none was given away. It is bad too, though, because it shows how irrevocably committed many people still are to destroying the last wild places.

It should be noted that the major groups in Washington worked almost as hard to defeat the Northern Rockies Ecosystem Protection Act as they did to pass the Williams Compromise. If the basis on which the Club or other groups decide to support bills or candidates is whether they will succeed (and can then be trotted out for the funders as "victories"), no matter what the effect on the land may be, then clearly the big groups cannot be trusted to protect the land or to represent their members in good faith.

What happened in Montana will happen elsewhere. As private lands are used up, the timber industry will demand the National Forests, under threat that they will pull out and throw "lots of people" out of work. Western senators will be happy to oblige them. As long as we're shackled to the Senate convention of "Senatorial Courtesy," coupled with the Big 10's subservience to what they perceive as "political reality," no wilderness bill worth its salt is likely to pass. Those two things must be changed if we are to protect real wilderness in this country.

THE BATTLE FOR THE NORTH WOODS

Here in the Northeast, about 26 million acres of forest land are up for grabs. All across northern Maine, New Hampshire, Vermont and New York, land used as timber land, then as pulp land, is for sale. About half of the so-called Northern Forest land is owned by big corporations and a few wealthy families, most of whom are eager to sell. The other half is owned by small private concerns, who are often forced either to sell the land to developers or to sell off the trees to make ends meet.

For about 150 years, the local people had an ideal situation. The big owners managed their land as if it were public land. They permitted recreational use of the land, paid property taxes and provided local jobs. Now they want out, because their paper and pulp mills are old and dirty, and the forests are running out. Since the 1980s takeover craze, any company with large amounts of standing timber has been seen as having large amounts of non-performing assets, and is therefore a takeover target. The theory is that if the "assets" aren't producing revenue now, they should be liquidated.

Much of this land has been clearcut, and the choice tracts are being bought by land speculators, who are marketing promised new houses in the Adirondacks and Maine by mass mail. For the past few years, this process has been slowed by the recession, but it will begin again full force as soon as people have the money to buy these tacky "dream houses." The question in the Northeast is, will this land become new wilderness, or will it become tract housing.

We have the means to buy this land and start providing for the return of wilderness. More than \$9 billion now sits in the Federal Land & Water Conservation Fund, which is intended for federal land acquisition, but was used during the Reagan/Bush years to offset the deficit. To buy the 26 million acres of Northern Forest land would likely cost about \$3.5 billion. Half of that land could be acquired from willing sellers in fewer than 20 transactions. The money is there, the companies are willing to sell...

Whereas in the Northern Rockies, the locals are violently asserting their "right" to continue clearcutting the land in the name of "tradition," the local people in the Northeast are just now, reluctantly, starting to look toward a different future. In the Northeast, the paper mills are spewing dioxins into the rivers, they are small, and old; and the remaining forests are spindly, impoverished and unprofitable.

Unfortunately, much of the old-fashioned environmental movement is still wedded to state-by-state, modest, "Let's-not-ask-for-too-much" wilderness proposals which have been the rule for so long; any proposal that goes far enough to be effective, the "experts" in DC believe is not "politically realistic" and it is automatically dismissed. Like the local folks in the forested areas, they don't want to admit that what they have been doing is wrong. America is becoming the United States of Denial.

A good expression of this was printed in *High Country News*, in an article about the Poppers' Buffalo Commons proposal. (The Poppers say the Plains states are depopulating anyway, the topsoil is going and the ground water is almost gone, so let's buy the land and give it back to the Buffalo. Then we can charge the tourists to watch them, and keep the region alive.) A Colorado feedlot owner was quoted as saying "Asking us to admit that what we have been doing in trying to settle a lot of this country is wrong, has been wrong all along, is like asking us to have surgery without anesthetic." He was right. It is. Nonetheless, if it doesn't work, don't keep doing it. Clearcutting and paving this country doesn't work. Whether we like it or not, whether it hurts to admit it or not, we should stop doing it now.

So, what do we do? First, we accept that we must protect large Wilderness Areas to protect this country. Second, we realize that, state-by-state Wilderness proposals will continue to be ineffective. Third, we accept that the big environmental groups are not protecting big wilderness, because for many silly, sad and shameful reasons, they don't really want to. Fourth, we support and help those smaller, more progressive groups that are willing to take strong stands for Wilderness. Fifth, we recognize that not all possible future Wilderness is contained in the remnant unlogged areas out West, although those must be protected with fervor and a vengeance. We must also start fighting for wilderness restored, starting here in the Northeast. Sixth, we approach our senators, all of us, and demand an end to "Senatorial Courtesy"; states' rights will never protect the land. Seventh, and perhaps most important, we understand that denying what we have done will not change it; and we acknowledge that as conservationists or environmentalists (or whatever we are) the only real proof of our success is written on the face of the land.

No matter whom we elect, what bills we pass, how many members we have, how much money we raise, how much "access" or "influence" or "credibility" we have, if the land is destroyed then we have lost. As a movement, we have to try to remember who we are, we have to find our soul again. As a country, we have to do the same thing. We have to be strong enough to admit what we have done, and then we have to be strong enough to undo as much of it as we can, and try to put back what we've taken.

Margaret Hays Young is a full-time volunteer renegade leader with Alliance for the Wild Rockies, Preserve Appalachian Wilderness, Sierra Club's Atlantic Chapter and other groups.

The Unpredictable As A Source of Hope

by William Velton

The political effectiveness of the environmental movement would be greatly strengthened if a significant fraction of this group could be empowered by hope.

Even during antiquity the adverse effects of deforestation and overgrazing were recognized; and last century, "dark Satanic mills" appeared in industrialized portions of the world. But these degradations of the environment were local. Only during the last forty years has the possibility that human activity could undermine the foundation of life on Earth, whether by nuclear holocaust or by the unlimited growth of human population and industrial output upon our finite planet, entered the general consciousness. During this same time the view of Earth seen from space has become widely familiar: a lovely blue and white orb so different from the other planets of the solar system as to inspire the hypothesis that the Earth itself is a single system or organism, Gaia, that maintains the improbable and unstable mixture of gases in the atmosphere, along with the other improbable conditions necessary to sustain life as we know it. Recognition that we are both implicated in what happens to the biosphere and dependent on its continued health for our own survival, has grown with a speed perhaps unprecedented in the history of ideas. It is a fundamental change in the way we perceive the world and our relation to it. The 1992 United Nations Conference on Environment and Development in Rio de Janeiro, attended by heads of state and representatives from 160 nations, can be seen as a symbol of the environmental movement's success, whatever the shortcomings of agreements reached there. Even more impressive was the 1987 Montreal Protocol to phase out chlorofluorocarbons, which was reached only a year or two after legitimate doubts as to the seriousness of the problem were resolved. Why then do so many who are concerned about the environment feel a sense of despair? This article briefly examines the causes and consequences of that despair and then proposes that the arms race, which appears now to have ended, is a hopeful historical analogy to the environmental crisis.

One reason for despair is the gulf between the severity of the problems and the inadequacy of the responses to them. No one knows exactly how much time the human race has to work out the environmental problems, but many scientists agree that if we fail to take effective action during the next decade the problems will have become insurmountable. The collapse of whole ecosystems will become inevitable with the consequent extinction of many species and the death of a large part of the human race. Yet, environmental issues receive only occasional attention from politicians and other decision-makers and are usually subordinate to the promotion of economic growth. This was exemplified by the 1992 Presidential campaign, during which the environment was raised as an issue only by President Bush's attacks upon Senator Gore as "Ozone Man." Neither President-elect Clinton nor even Vice President-elect Gore, arguably the most environmentally sensitive and thoughtful of politicians, responded, preferring instead to concentrate on the economy in their successful election campaign. Given the inertia of institutions and old habits of thought, along with the opposition of vested interests which profit from existing conditions, one may reasonably doubt whether effective action will keep pace with mounting problems.

Another reason for despair is that what seems to be the emerging consensus for environmental action is limited to an agenda that does not contradict the prevailing values in the dominant developed nations and does not reflect the radical implications of environmental consciousness.

This emerging consensus might be roughly characterized as aiming at sustainable development within the framework of a market economy and liberal institutions. The agenda consists of accounting for environmental costs and benefits in economic transactions, reducing the resources used and the pollution emitted per unit of production, finding uses for waste generated in producing goods, and recycling finished goods. It is assumed that developed nations will assist the developing nations in obtaining energy efficiency and clean technology. It is hoped that the explosive population growth in the developing nations will be slowed by higher standards of living and an improvement in the status and education of women, both of which will make voluntary family planning more acceptable. These consensus views are perhaps best exemplified by *Changing Course: A Global Business Perspective on Development and the Environment* by Stephen Schmidheiny with the Business Council for Sustainable Development, published in 1992.

Such measures are rational and I hope that they are effective enough at least to bring about a truce in our society's war upon the biosphere; but I doubt that they will, by themselves, prevent global collapse. Because the resources of the planet are limited, growth of both population and economic activity must eventually cease, not merely slow. This is not a problem that only concerns the distant future. According to *Beyond the Limits* by Meadows, Meadows and Randers, published in 1992, human population is already beyond the long-term carrying capacity of the planet at a standard of living enjoyed by the richest countries. Yet the world's population is projected to double in the next forty years. To rescue ourselves from ecological catastrophe, we may be forced to confront and change basic assumptions concerning the structure of society and the economy. As Murray Bookchin observed in *The Ecology of Freedom*, "We must try to create a new culture, not merely another movement that attempts to remove the symptoms of our crises without affecting their sources."

Finally, some concerned persons despair over the question of what kind of sustainable planet is desirable. Should the human race, having "conquered" nature take command of "spaceship Earth" and its life-support systems, or should human beings, having almost destroyed in 200 years the biosphere developed and nurtured by Gaia over billions of years, become humble and respect life as intrinsically valuable even if without obvious utility? Mark Sagoff, director of the Institute for Philosophy and Public Policy, remarked in a lecture delivered at the University of Maryland in 1992: "The most efficient way to control the future is to invent it. That is why we spend so much more to produce valuable engineered species than to protect economically useless endangered ones. And that is why we continually turn whatever wild ecological systems we have, from rain forests ... to estuaries into carefully managed and engineered, and therefore profitable and predictable, bio-industrial ... systems." It is

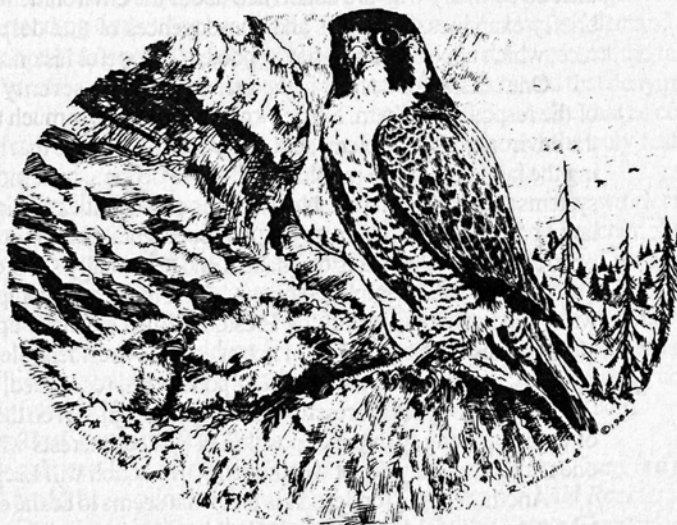
easy to imagine utilitarian dysutopias which might preserve a viable biosphere but would seem a nightmare to John Muir, Aldo Leopold, or Arne Naess. I, for one, do not wish to live in a world where all "economically useless" wilderness has been put to "profitable" use, where, for example, all diverse ancient forests have been clear-cut and replaced by tree farms in which a monoculture of fast-growing, bioengineered trees is maintained by herbicides. I do not wish to live in a world no longer shared by whales, elephants, tigers and eagles, whose right to exist should not depend upon our balance sheets and whose loss would diminish the human spirit in ways beyond our ability to calculate.

For these reasons, it is understandable that many people who try to envision a sustainable society and love nature passionately, feel despair. I know a number of such people who "cultivate their gardens" rather than take an active role in the environmental movement, either because any personal contribution seems so small as to be pointless, or because they have no faith in the ability of our society to cope with these problems. It is human nature to avoid tackling problems that seem insurmountable, and even to avoid thinking about painful subjects when there seems to be no prospect that they can be dealt with effectively. I believe the political effectiveness of the environmental movement would be greatly strengthened if a significant fraction of this group could be empowered by hope. Whereas despair paralyzes, hope inspires the bold and creative exploration of possibilities. Hope can transform a demoralized struggle into a joyous adventure. Unfortunately, hope cannot be willed into existence.

A different manifestation of despair can be found within the radical wing of the environmental movement itself, such as statements by some members of Earth First! and followers of the deep ecology movement that the human race is like a virus or cancer* killing the planet. The hostility of many radical environmentalists toward inadequate reforms, as simply smoothing the road to disaster, also seems to spring from a kind of despair. Patchwork reform, from this viewpoint, is counterproductive because slowing environmental degradation without fundamentally changing society merely allows adjustment to it, as in the example of the live frog that can be set in a pot and slowly cooked to

death without leaping out if the temperature is raised gradually enough. Despair, and the anger that sometimes arises from it, distorts judgment, blinds one to opportunities for persuasion of others to one's point of view and creates enemies needlessly.

The environmental crisis circumscribes all possible futures since environmental degradation must either be dealt with or the consequences suffered. A society is a system whose permutations and possibilities are infinite. Society's response to these problems is intrinsically unpredictable given the complexity of even a single human mind. A hopeful outcome to this challenge can not be demonstrated by logical argument or rational



Peregrine Falcon by R. Waldmire

* ed. note: See "Homo Carcinomicus," *Wild Earth*, Vol. 2 #4.

analysis. The most one can say is that our response can be creative, flexible and dynamic.

Although hope about the future of the environment can neither be forced by argument nor manufactured by an act of will, recent history provides an event that may inspire hope. I view the arms race and its ending as an evocative analogy that suggests how history can take us by surprise and transcend or dissolve seemingly insoluble problems.

For 40 years "Doomsday" or "Armageddon" was the greatest single environmental hazard facing the planet. With the recent opening of archives, we now know that the United States and the former Soviet Union came very close to war during the Cuban Missile Crisis in October of 1962. Each year thereafter, though tensions never again reached that height, the magnitude of the threat itself increased with the increase in the stockpile of nuclear weapons.

A few prominent scientists considered what the results would be if the unthinkable occurred and the stockpiles were actually used. Warning of the "end of civilization as we know it," some wondered whether the biosphere itself would be at hazard as the stockpiles continued to grow. Scientists debated whether a "nuclear winter" or "nuclear autumn" would follow an "exchange of weapons." In either case, crops would fail and hundreds of millions of persons who had survived the initial blast and the effects of radiation would starve. Jonathan Schell examined the matter in his widely read book, *The Fate of the Earth*, published in 1982. Schell concluded that neither a catastrophic breakdown of the biosphere nor the extinction of the human race, along with numerous other species, could be ruled out.

Both the United States and the Soviet Union felt that they had to be able to survive a surprise attack by the other and therefore had to have "second strike capability." In order to maintain second strike capability both sides had to acquire massive "overkill." This was the appropriately named doctrine of "Mutually Assured Destruction," MAD, under which the stockpile of weapons possessed by each side inexorably ratcheted upward. Negotiation between the powers was destined to be ineffective and confined to marginal matters by the logic of MAD. The experts asserted that unilateral disarmament, whether complete or merely partial, would actually be "destabilizing," since the enemy would seize the opportunity to launch a strike to prevent the possibility of its adversary re-arming. Perhaps there was a measure of sophistry in this argument, but it was clear that no unilateral disarmament would take place in the prevailing political climate. One could demonstrate and attend rallies and discussion groups if one wanted to vent frustration, but such activities were not changing the situation. Given Murphy's Law that if something can go wrong it eventually will, was it not almost inevitable that there would someday be a malfunction? That there would be a sortie by a rogue commander on one side or the other? That a madman or fanatic would come to power? Or that one side, perhaps miscalculating the other's intentions, would launch a "preemptive strike?" There seemed to be no hope that nuclear war could be avoided for long.

My own despair over the arms race was worst during the first Reagan administration when the United States decided to place Pershing II intermediate ballistic missiles in Germany where they could reach the Soviet Union within five minutes, thereby greatly enhancing the likelihood of war by computer malfunction or other electronic glitch. We now know that, from 1981 until the end of 1983, the KGB was convinced that the United States was preparing to attack the Soviet

Union. About the same time, President Reagan affably admitted that he enjoyed discussing with fundamentalist preachers whether these were the last days and Armageddon was at hand. President Reagan himself seemed rather cautious despite his "evil empire" rhetoric, but it was a chilling reminder that others' belief in "the Rapture" and "the Last Days" might color their judgment and that someone with such beliefs might someday be elected President of the United States. It seemed only a miracle could save the world.

Then a whole series of unexpected events occurred: Gorbachev came to power in 1986 and instituted "glasnost" and "perestroika," followed by real detente that led to the Intermediate Ballistic Missile Treaty. In 1989 the communist regimes in the satellite countries of Eastern Europe collapsed, one after another in revolutions that were almost bloodless, with the partial exception of Romania. In contrast to 1956 and 1968 the Soviet troops were not ordered to reimpose communism. In 1991 the failed coup against Gorbachev was followed by the outlawing of the Communist party in Russia and the rapid break-up of the Soviet Union into its constituent republics. At the end of the year President Gorbachev formally resigned. The world had changed fundamentally. The Cold War was over and, along with it, the arms race and the imminent threat of a nuclear holocaust, at least for the foreseeable future.

The truly amazing aspect of all these events was their sheer jaw-dropping unexpectedness, particularly the collapse of the communist regimes in the satellite countries in 1989. The whole world was caught by surprise. Not one pundit, scholar or expert predicted these events an appreciable time before they happened. Indeed, even as the events unfolded, those who had the credentials to pontificate tended to downplay the significance; reform might occur in Hungary, but it would only go so far; the Soviet Union might acquiesce to the collapse of communism in Hungary and Czechoslovakia, but it would never acquiesce to similar events in Poland and East Germany, and so on.

I do not mean to suggest that a similar series of miracles will unexpectedly save us from our environmental crisis. Most definitely, I do not wish to suggest that human resourcefulness or luck will forever find new expedients, including new technologies, to solve environmental problems. Rather, the lesson I wish to draw is that history is nonlinear and its chaotic flow of multitudinous events is inherently unpredictable. Despite our ingrained expectation of regularity, history shares with many systems in nature the quality of chaos. Seemingly small actions can lead to disproportionate consequences—the flight of a bird can set in motion currents that give rise to a hurricane, and a quiet conversation can set in motion events that change the course of history.

If I were able to see fifty years into the future, I fear the environmental devastation, loss of species and human suffering would be heart-breaking. But I also believe that if we have the courage to deal resolutely with the environmental crisis, we will be surprised by joy as well as sorrow. As we revise our relationship with nature and explore what it means to be immersed in a biosphere in which everything is interconnected, then we will also revise our view of human society in fundamental and unpredictable ways that may heal the malaise that has afflicted our society.

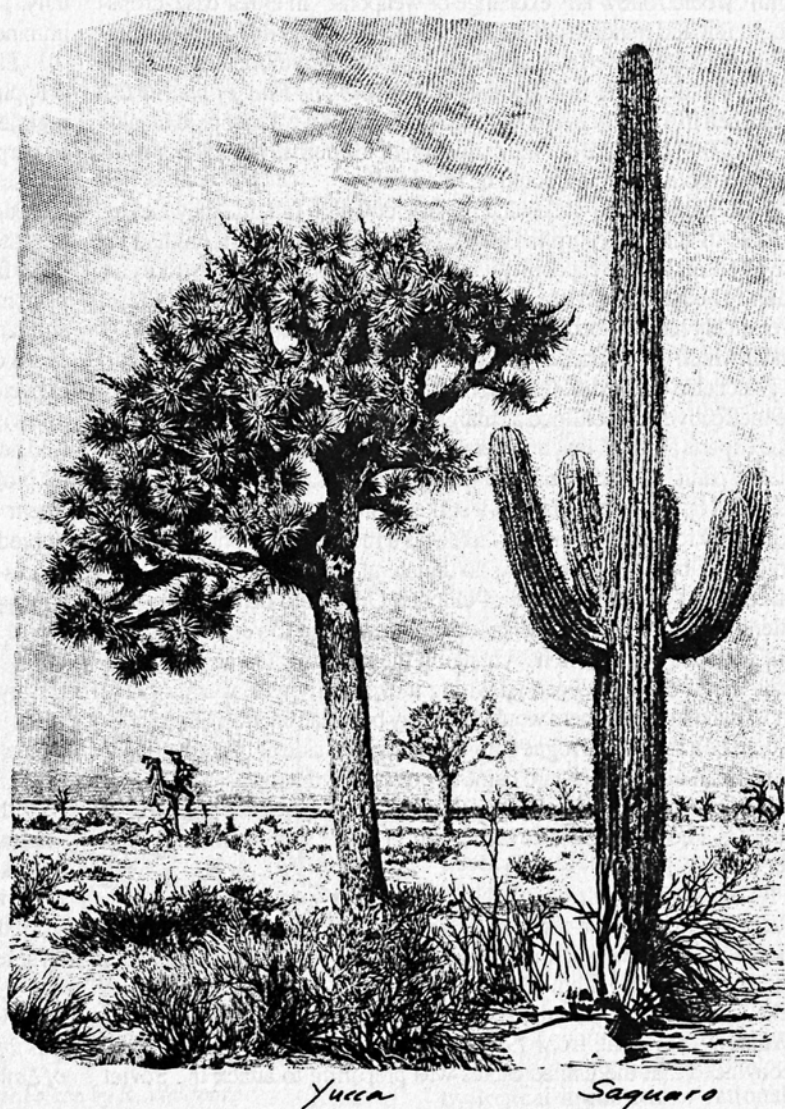
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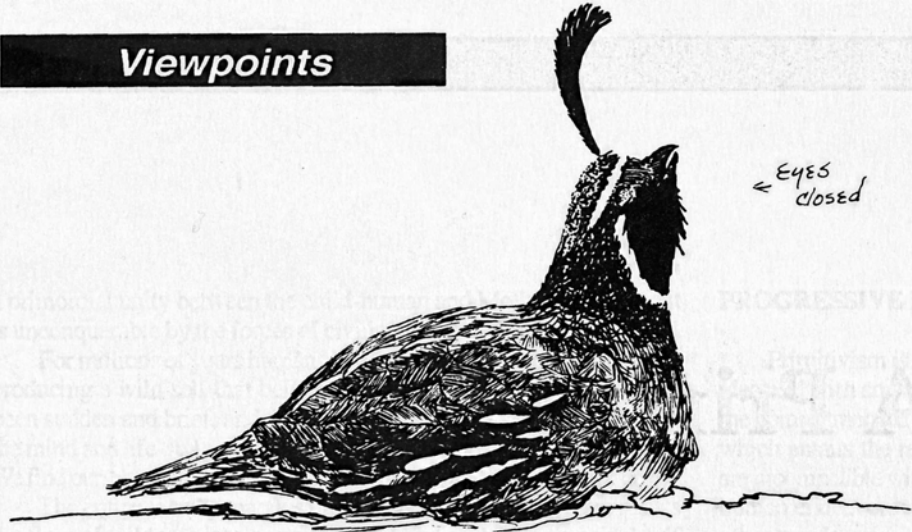
A Sonoran Polemic

by Jack Loeffler

I am hiding. Hopefully, the silhouettes of the nearby blooming Saguaros and yellow flowered Palo Verdes disguise my motionless shape. Sweat is dripping into my eyes even though the mother orb has yet to cant this aspect of her membrane out of the shadows cast by the volcanic range east of me. The Sun is not yet visible, however its light has aroused the prevailing community of diurnal creatures from slumber. All around me, I hear voices. Only I am silent. Empty. Receptive to the evidence of my senses. My predominant sense, hearing, is acute. Nearest me is a Gambel's Quail calling to the dawn in a mid-high pitch of sound, a single call uttered randomly, frequently, whimsically. Beyond the sound of the quail I hear a rhythmic staccato pattern I know to issue from a Cactus Wren. Within the same range is the more mellifluous call of a Curve-billed Thrasher. The greater panoply includes two Phainopeplas; the voices of Mourning Doves blending with voices of White-winged Doves, both nearby; the distant drumming of Gila Woodpeckers who scream into the brightening day; the random warm tones of hummingbirds' wings; more scattered quail calls fading beyond my range; the ubiquitous hum of thousands of insects' wings whose dynamic range fluctuates to my ear. Now the owls are silent, the Coyotes still, although earlier, while the sky was dark with starlight, the Elf Owls and Coyotes yipped in chorus.

I have held this same position throughout the dawn. I have not moved except to breathe, as silently and motionlessly as I can. I have remained hidden, although my presence is known and registered to the prevailing community. I am a human, a visitor—an interloper perhaps, but not a terrorist. In hiding, but without anxiety or fear, concerned only that I disturb this prevailing community as little as possible while I listen to the collective voices of its denizens. I have amplified my hearing by 300%. I am listening through headphones as I digitally record the sounds of the Sonoran Desert in stereo. I am hearing creatures in relation to each other rather than as isolated species. These creatures represent the collective consciousness of a biotic community that characterizes the basin known currently to humans as the Valley Ajo. I have just camped the night in the Kuakatch Wash. From my vantage as I face south, I can see the Ajo Range to my left and the Bates Mountains to my right. To the south is an alluvial plain, a bajada, a desert membrane as rich with life as any desert in the world. A perfect environment, a meld of biota cradled by prevalent landforms, an ecosystem characterized by geophysical and biological forms which have co-evolved in a state of mutual interdependence to found a bioregion, an entity unto its own now 10,000 years old.





How many species are currently at home here?
 How many species pass through?
 How long does it take to recover when a wave of "exotics" descends, stays, and then moves on?

Indigenous man has been at home here, at least sporadically, longer than the life of the Sonoran bioregion, or so is indicated by the presence of Clovis points and sleeping circles of stone. But is monocultured man at home without the endless accouterment, the attendant energy? Monocultured man—monotheistic, driven by techno-lust, isolated from the sense of natural habitat, perhaps collectively insane by now in the face of evidence that we may be nothing more than a malignant bloom metastasizing throughout the mosaic of life. But with an intelligence possibly capable of understanding the physical characteristics of the universe, of visualizing its primordial stuff, of hearing echoes of the primal explosion which burst forth with matter into the continuum of space and time...

Time to speculate, now. Time to regroup.

What does the evidence indicate to someone bereft of enough common sense to seek shelter from the light of the Sun which has revealed his hiding place? This white-haired, white-bearded eccentric who insists on listening to and recording birds and bugs in the wild hope of understanding the common language, the words in the chorus, the collective expression of existence in response to the urge to exist? "Good question, *frijol viejo*," says the ghost he senses by his side—whom he wishes were sitting there in the flesh, whose recorded thoughts were at least as relevant as those of any other human, and who sat just there off and on over the years.

Until recently, the solar system was the largest ecosystem I could safely imagine. But then I saw a picture, an artist's rendering of the universe in red, white and blue (no pun intended), and my meagre imagination made a quantum leap. Now, it seems perfectly obvious that the Universe is the parent ecosystem. There's time enough in a billion years or so to speculate as to what urge gave birth to the knowable universe whose provenance was a microdot—a dense compaction of energy and the potential for matter, space and time.

"Maybe God comes at the end of the universe," whispers this ghost by my side.

I have to consider this.

But first I have to shed a few biases. Like Islamic-Judaeo-Hebraic tradition. Like Brahma-Vishnu-Krishna tradition. Or even the Buddha-mind-set. Be rid of anthropomorphisms, if just for a little while—long enough to see a tree, or a desert, or the space between the stars. Rid myself of economics, the "law of the land," the system of mores into which I was born. Pull all of the nails out of my frame reference. Rid myself of everything including my sense of self, as best I can. Be rid of

my concept of Nature, my sense of the Tao. Eradicate the mythic process from my being. Decongest my frontal lobes. Empty myself of all preconceptions and try, with all my will, to become a *tabula rasa*.

And then try to imagine entering death in this state of mind. With this kind of honesty and resolve.

"That's what it takes," murmurs my buddy's ghost.

Be rid of my buddy's ghost.

Now what? I am still conscious. Take stock. Do I feel rapport with this place and its denizens? Am I related by some common denominator? Is there a fundamental tie between this organic entity in which my mind presides and this semi-shaded place where I crouch? How far does it extend? What are the shared characteristics?

Many of the fauna here in this desert, this bioregion, this planet have, more or less, the same sensory apparatus as I. My territory has been invaded. A red ant is biting my ankle. I flick it off, hoping I haven't injured it. I feel empathy for the ant, for the organic creatures, floral and faunal. This empathy extends to the place itself which I perceive to be an integrated system with a consciousness of its own that is comprised of a collective sensory apparatus constrained within the prevailing biota of which I am currently a member.

I am a member of a biotic collective. No more. No less. This is now a fundament of my consciousness. And to a certain extent, probably far more than I realize, this is understood as fundamental to the coalesced consciousness of this biotic collective. Does this consciousness extend beyond the biota to include the inorganic? In truth, I cannot say. However, my intuitions respond affirmatively. Are my intuitions adequate to be trusted? Again, I do not know.

For a while, thinking stops as I observe without reflection. Life feeds on life. I hear it, see it happening—taste it, feel it, smell it. Entropy. Yet life, evolution, favors the complex.

It comes to me that life and consciousness are in some way a response to the very urge that gave birth to the universe. Seems reasonable. Scattered throughout the universe there must be myriad circumstances of similar consciousness. And dissimilar consciousness. Is it possible that the universe is home to a seemingly infinite number of collective consciousnesses whose bodies are of equal number? Is each life-bearing planet like a single brain cell complete with an encoded transcript of its experience of existence? What of non-life-bearing planets? Or solar systems? Or galaxies? Or galactic clusters?

Perhaps the universe is a single entity, an organism, itself evolving to accommodate a single idea, a single thought comprised of all the data recorded by all the biota, and quasi-biota, and non-biota that exist, have existed or will exist—an idea 30,000,000,000 years and 59,000,000,000,000,000,000,000 miles long—an idea that is completed at the moment the universe collapses in on itself in a monstrous implosion.

"Whose idea was it, anyway?" mutters the ghost by my side.

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Why I Am A Primitivist

by Glenn Parton

Recently, I have come to think that primitive society is best for human beings and non-human beings. By primitive society I mean, basically, a form of human association in which people live and work in the wilderness. By wilderness I mean a place where the whole determines and balances each and every part. A wilderness is not necessarily a place devoid of humans; rather, it is a place where all the parts exist on an equal footing—all embarked together on an evolutionary and ecological odyssey. Everett Ruess¹ spoke of being "overwhelmed" by the Canyonlands of Utah and Arizona, and this is a good way of defining a wilderness environment.

Pre-Columbian America, for example, was an unbroken wilderness, containing a diversity of flourishing human cultures, because the living context of wilderness was the overwhelming, dominant reality. It is shallow to distinguish between wilderness on the one hand, and aboriginal settlements and work places on the other hand; in comparison with the deep insight, needed today, that primal human places and processes may be distributed throughout a wild landscape, as working elements of a biotic whole. Primitive peoples are "in" the wilderness because their way of life fits into the pre-given natural world; in contrast to modern society which alters, more or less permanently, first nature. In other words, primitive society is a sustainable society in the sense that it adapts to wilderness; whereas modern society sustains itself through the termination of wilderness.

Historically, the Neolithic revolution (beginning about 10,000 years ago) was the beginning of the end of humans dwelling in the wild because it augmented, disproportionately, human power over nature. By the time civilization proper was established (about 5000 years ago), humanity was too much in control of natural events, despite uncontrollable consequences, to be considered an equal member in the larger

scheme of things. The laws, institutions, and technologies of modern society, which have removed us from wilderness, are agriculture, metallurgy, division of labor, property, multiplication of needs, production for the market-place, commerce, and the State (see Rousseau's *Discourse on Inequality*). The rise and development of modern society has been inextricably bound up with the growth of dependency, isolation, and competition. No primitive society has been able to preserve or pass on its core values—self-sufficiency, community, and consensus, for examples—once the wilderness has been vanquished. In short, the freedom and happiness of Paleolithic peoples (which requires no

argumentation or documentation by me; see Nathan Cohen's *Health and the Rise of Civilization*, Marshall Sahlins's *Stone Age Economics*, and other anthropological works) is infused and defined by wildness; while the misery and wretchedness of "advanced" life has increased along with the GNP and our alienation from the wild.

THE WILD SELF

The notion that future human beings may obtain peace, security, and joy while nature remains unfree or tame is a fiction. History not only tells what has been the case, but also what must be the case, at least in one very important sense: biologically speaking, *Homo sapiens* is the same creature now as it was 50,000 years ago. Primitive society is best because the supreme reality (wilderness) that fashions it is so much a part of what we are,

of essential human nature, that it is impossible, physically and psychologically, to achieve health and well-being without due regard for our ancient heritage.

I suggest that humankind has an instinct for wilderness, which swells up from its somatic source in our larger body and demands, relentlessly, satisfaction, even if only in our dreams. This instinct is a vital need to return to an earlier, original state of nature, wherein exists



a primordial unity between the child-human and Mother Earth; and it is unconquerable by the forces of civilization.

For millions of years humans lived and worked in the wilderness, producing a wild self that belongs there. The rise of civilization has been sudden and brief, and the result has been traumatic, a rupture in the mind and life-style of humans, which is the origin of our suffering. We find ourselves in a world of our own making that we are not made for.

The entire social apparatus built over the last 10,000 years resists the flow of wildness into our minds and bodies, but the original self still abides, and because we are no longer in direct and regular contact with the forces and faces of wild nature, we languish and despair. Humanity must, because of history and pre-history, fulfill the urges and desires of its wild self, if we are to be free and happy again. We are 9/10—nay, more—pre-civilized, linked in billions of unseen and unknowable ways with air, wind, water, rain, sun, soil, and fire.

NEW FORMS OF HUMAN FRUSTRATION

All attempts to create a landscape of harmony between humanity and nature that is not wilderness but semi-wild, rural, or pastoral will not gratify our wild self, even if we succeed in minimizing pollution, scarcity, and extinction. The pastoral ideal, sometimes called the sustainable development ideal, is said to be a life close to nature—perhaps so, but it is undoubtedly a life far from wilderness. To make this ideal the focus of our efforts to heal the planet is misguided because what is crucial is not mere survival, comfort, or easy living, but adventure, spontaneity, wisdom, and companionship with self-willed nature. Sustainable development puts humans in the role of managers and stewards, thereby effectively excluding us from a life with nature on its own terms, from participating in the complexity and autonomy of undomesticated nature.

Nor will a wilderness preservation strategy that sets aside large natural areas—free from destructive human activities like roading, grazing, logging, and mining—suffice to sustain wild human nature. An interconnected system of nature reserves, although absolutely vital for saving biodiversity in the short run, is not a complete or lasting solution. Human visitation of the wilderness can never amount to a genuine wilderness experience. What is critical is not playful re-enactment of the past, but on-going interactions between humans and nature, set in an existential milieu, where issues of life and death are determined. It is impossible to be integrated into the wilderness if the major decisions of one's life depend on external laws and institutions.

Both of these conservation strategies—the pastoral and the designatory—are new manifestations of human frustrations, results of the wild self not achieving its aim of enduring oneness with the wilderness. Authentic planetary health is the work of Eros, or life instinct, binding together native plants, animals, people, and landscapes into a wild Earth. A true biocentrism, which does justice to the vast diversity of wild lives, including human beings, must, as John Davis says, "Let the matrix be wild."² This is the only way to protect and enhance all of life on this planet; for when humans are separated from wilderness, by either a garden scenario or designated Wilderness, we fall ill over the long run—witness network TV for one evening as proof of our sickness—and thereby place the entire planet in jeopardy. **The kind of change we need is primitive society once again—back to the Pleistocene.**

PROGRESSIVE PRIMITIVISM

Primitivism is not a static form of human association, so it is not identical with any of its historical manifestations. It is, fundamentally, the commitment to wilderness "everywhere,"³ as Dave Foreman says, which entails the rejection of all human activities and structures that are incompatible with wilderness, but leaves open the possibility of new human endeavors and inventions that harmonize with wilderness. In other words, primitive society does not set limits on human imagination and ingenuity, so long as wilderness carries on everywhere, or is not displaced anywhere. This means it is not necessary to go strictly back to the Stone Age in order to regain tribal human dwelling. The Buffalo, Lakota Indian, and Spanish horse were, respectively, additions to an older wilderness. New social forms are possible and desirable, in keeping with a new kind of progress that draws wildness into the highest pinnacles of leisure, work, art, religion, and philosophy. Listen to Luther Standing Bear:

I am going to venture that the man who sat on the ground in his tipi meditating on life and its meaning, accepting the kinship of all creatures, and acknowledging unity with the universe of things was infusing into his being the true essence of civilization. And when native man left off this form of development, his humanization was retarded in growth.⁴

Thus the great societies of the American Plains Indians were still young, still unfolding, before the massacre.

A "future primitive"⁵ society, as Gary Snyder terms it, will look very different from anything we have seen and suffered since the Neolithic. As Christopher Manes, following Heidegger, argues: "technology that treats nature as a 'standing-reserve' for human utilization must end."⁶ Handicrafts, horticulture, foraging, story telling, tracking, and walking are time-tested ways of staying in touch with the common ground of our identity, and they will always remain so. However, there are probably new and significant human/nature relationships reconcilable with, or absorbable by, a wild Earth. Obviously, large cities and populations, mega-systems of production and distribution, automobiles, and so on do not qualify, but who knows the heights of true humanity? Only our colossal mistakes are certain.

THE PRIMARY TASK

Our primary task is, as Edward Abbey knew, to "unbuild"⁷ our civilization, and restore wilderness. (There's a job waiting for every deconstruction worker.) Lame Deer has a plan: "Let's roll up the world. It needs it." Roll it up, he says, "like a carpet with all the white man's ugly things—the stinking new animals, sheep and pigs, the fences, the telegraph poles, the mines and factories. Underneath would be the wonderful old-new world as it had been before the white fat-takers came."⁸

Jerry Mander puts the task before us in proper perspective: "In fact, it is not really going back; it is merely getting back on track, after a short unhappy diversion into fantasy."⁹

Kirkpatrick Sale agrees: "There is only one way to live in America, and there can be only one way, and that is as Americans—the original Americans—for that is what the earth of America demands."¹⁰

Needed now is the awareness that wilderness is fragile when it comes to human impacts, together with the sensibility not to tolerate

anything that compromises it. If a thing cannot be made to fit into a wild ecosystem, then it should not be made at all (including the making of babies). We can and should reinhabit the wilderness. In North America, this means restoring the natural world that Lewis and Clark traversed, that George Catlin observed fading away, and that Audubon could no longer find, with its wild lilies, plum trees, gooseberries, strawberries, cherries, currants, rose bushes, prickly pears, herds of Buffalo, Elk, Pronghorn, wolves, Mountain Goats, oceans of prairie...and where (as Catlin said) "it is natural to laugh and be merry."¹¹

The established dogma that "You cannot go back," is not true. We can "go back" because the intellectual and material means exist now for undoing much of what we have done to this wild planet. Furthermore, psycho-biologically, as Paul Shepard says, "we go back with each cycle of the sun, each turning of the globe."¹²

ULTIMATE VALUE

Aldo Leopold said, "the ultimate value in these marshes is wilderness."¹³ No human values should override or supersede wild places. Whoever enters the crane marsh, river canyon, Elk valley, or Moose meadow stands or falls under an ultimatum—Let wildness be. No earthly places lack ultimate value; no places should be sacrificed to so called higher human ends. There is so much accomplishment, intelligence, goodness, and beauty in everything wild that each human project should embody a spirit of awe and humility. Wilderness is vastly superior to anything we have done or could do. Our challenge is to live and blossom without killing it.

Roderick Nash wants to know what is wrong with universities and modern medical technology.¹⁴ I answer: the same thing that is wrong with plastic trees—namely, they are not rooted in the real world, the actual world, the world of absolute value. To be rooted in the wilderness means to be sustained by the wilderness. The foundation and infrastructure of universities and modern medical technology necessarily replaces wilderness. Until recently each area of our planet had been forming and improving itself for billions of years. Are we to suppose that humans, in a mere 10,000 years, have discovered something better? It is hubris to think that a philosophical dialogue, symphony, new medicine, or even a whole collection of uniquely human values—i.e., human culture—is as great as wilderness. What are human works in comparison with the jungle, desert, ocean, river, moon, and stars! The most that we can achieve, and should aspire to, is a contribution to what is already there, much of which we have only begun to understand.

As one life-form among many, humans have the right to pursue their species-being, but it is strange indeed to turn against that which created us and nurtures us still. We need not remove culture from wilderness, or wilderness from culture, in order to learn and be healthy. On the contrary, this conflict is the reason "higher" culture is failing so miserably to reach the inner-person. The promise of new ideas and devices is undermined by the dominant message in universities and modern medical technology that the good life for humans depends on pushing wilderness aside. Genuine learning, like John Seed's Council Of All Beings, preserves the continuity between humankind and primeval nature. Continuity, it seems to me, is a basic law of things serene, strong, and sane; and is but another name for health. Modern society breaks this law.



CONCLUSION

We have fallen under civil amnesia, oblivious to what is of true value in life. Therefore, anything that speaks to, stimulates, or probes the true self has efficacy, even if most of us, like catatonic patients, reveal little or no response. The long-term outcome depends on what happens in the privacy of our minds. In moments of inner-solitude—between the work spaces and holiday races—memory is activated by urges within, and by the atmosphere, water, stars, and four-legged ones, flying ones, swimming ones.... It will be difficult for us to accept wildness, within and without, because it means acknowledging that we have wasted life. Reality and counter-reality, primitive society and modern society, the wild self and the programmed self are adversaries in a war that will decide the fate of the Earth and its inhabitants in the coming century.

Glenn Parton (POB 1997 Weaverville, CA 96093) describes himself as a plain member and citizen of wild Earth.

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ARE COMPUTERS LAND-COMPATIBLE?

I'm now reading the excellent Special Issue on The Wildlands Project, and I must respond to Sandra Coveny's article "Technology Isn't Entirely Evil." The author doesn't actually address the topic implied by the title, but allows the reader to reach her conclusion by describing the wonders and uses of the GIS system. As a resident of the same state, I'm familiar with the system she refers to. It's impressive. Colorful. Maybe even accurate.

Users and developers of such tools would do well to keep in mind that they are just that—tools. And any tool is a reflection, good or bad, of its maker. His or her lapses in attention, incomplete or biased recording of information, and the inherent limitations of the medium can subtly change whatever reality proceeds from the toolmaker's concept. When such an effort is the work of many, this can be compounded. Not to say the result is useless, but it is dangerous in the case of an attempt to represent a system we do not fully comprehend with one that we think we do. As an example I would

refer to the difference in game "management" between the Cree Indians and the government authorities in Boyce Richardson's book *Strangers Devour the Land*, or Farley Mowat's *People of the Deer*.

The main difference is one system assumes identity with the land, the other assumes facility with an abstraction. They are not the same, and the choices made reflect that difference.

—Brian Carter, Concord, NH

CATAMOUNT IN THE DACKS?

The Governor's Commission on the Adirondacks in the 21st Century made the Oswegatchie Great Wilderness a 1990's priority. Broad ecological brush strokes were painted. The Aldrich Pond Wild Forest was to be given Wilderness status, thus creating a vast area contiguous with the 5 Ponds Wilderness area near Cranberry Lake.

The most exciting aspect of a Great Wilderness along the Oswegatchie River will be the enhancement of mountain lion habitat. Catamount tracks and tail sweeps have been

seen, with 20 feet of perfect snow blanket in between, here in the Aldrich Pond Wild Forest. The rugged terrain of foothills and rocky ledges provides home range suitable to denning.

Mountain lions are a reality in the Eastern US. Information gathered by the Eastern Puma Research Network of Baltimore, Maryland substantiates an estimated population of 3500. Due to growing deer numbers the mountain lion is gaining ground in New York State. Currently, Pennsylvania and West Virginia have higher numbers of sightings. By expanding the wildernesses of the Adirondacks we can welcome the mountain lion back here. Reports of mountain lion sightings help build momentum for establishing the Oswegatchie Great Wilderness. If you have any information relating to the Catamount's presence in the Adirondacks please contact:

Catamount Investigation Network, Rt 1, Box 159, Ogdensburg, NY 13669

(315)393-1975, Don Hassig

Eastern Puma Research network, POB 3562, Baltimore, MO 21214

(410)254-2517, John Lutz

—Don Hassig, North Country

STATEMENT OF PURPOSE

Wild Earth is a non-profit periodical serving the biocentric grassroots elements within the conservation movement. We advocate 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 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*.
- ✧ We are working with The Wildlands Project to complete, and subsequently publish in book form, a comprehensive proposal for a North American Wilderness Recovery Strategy.

GOOD SCIENCE

Howie Wolke's piece "Bad Science Lacks the Visceral Connection" in the Winter 92/93 issue of *Wild Earth* prompted me to write. It seems that science and passion repel one another, judging from the infrequency that they are found in the same individual. Activists dismiss scientists as egg-heads, scientists dismiss activists as eco-ravers. Both may be true to some extent, but we cannot afford to perpetuate these burn raps. Until passion itself is valued more highly in conservation decisions, we need science on our side.

An ideal world would provide us with scientists driven by a visceral connection to the Earth, and with committed activists skilled in using science as a tool. There are a few of each, but far from enough to cope with the flood of issues which need research and action. The supply is limited partly by the sources; few university and graduate programs exist to provide scientific training in the context of conservation. I want to inform the readers of *Wild Earth* about one such graduate program: **The Field Naturalist Program** at the University of Vermont.

Established in 1982, the Field Naturalist (FN) Program counters the trend toward sci-

entific specialization by emphasizing a landscape approach to environmental problems. Students receive field science training in ecology, botany, zoology, geology, and soil science and are expected to integrate across these disciplines. Coursework is often placed in the context of current issues to encourage the development of research and problem-solving skills. Constant attention is also given to the refinement of writing and public speaking skills.

Field courses in Alaska, Central America, and New England compliment training received at the Burlington, VT campus. The program is located in the botany department, an appropriate address given the liberal arts tradition of that field.

Each class is limited to five mature individuals who demonstrate a strong commitment to the environment. All students are awarded assistantships without teaching responsibilities and full remission of tuition. The small class size and the financial package ensure that students can focus on their work.

After ten years the program is well-established, with an excellent reputation and a strong placement record. Respected scientists E.O. Wilson and Stephen Jay Gould have referred prospective students to the Field Naturalist Program, and graduates are actively sought for employment by conservation organizations.

Passion and science in one package; what more could we ask for? Nothing, except perhaps more programs like this one.

Interested persons should contact:

Dr. Jeffrey Hughes, Field Naturalist Program, Botany Department, The University of Vermont, Burlington, VT 05405.

—Brad Meiklejohn, Field Naturalist

Howie Wolke's confusion over the meaning of the word "instinct" (Bad Science Lacks the Visceral Connection, *Wild Earth*, Winter 1992/93) mirrors our society's confusion over this word. To a biologist, instinct is a genetically programmed behavior. In contrast, to most people instinct is a synonym for intuition. As a biologist, the popular use of the word instinct bothers me because it ultimately causes confusion when biologists use the word in its correct sense. Since this usage is probably too deeply entrenched to be changed, we ought to at least be aware of these different meanings.

Keep in mind that animals (human or

non-human) may obtain information through intuition, and then behave in an instinctual or non-instinctual way based on this information. Wolke's mountain goats intuitively know something about the coming weather (although they probably also rely upon sensory input), and they instinctively move up or down the mountain based on the information available to them from various sources. Of course, the above statement about the goats' intuition is at odds with the prevailing scientific worldview, but that is another story.

—Bill DeJager, Fremont, CA

MILITARY OBSTACLES TO NEVADA WILDLANDS

In his excellent article, "A Greater Desert Wildlands Ecosystem Proposal," George Wuerthner only briefly touches on what is probably the greatest obstacle to formal protection of any truly large wilderness in southern Nevada—the military presence.

The Nevada Test Site (run by D.O.E.) is trashed, as one might expect, by decades of atomic tests, both above-ground and underground. But what is not so widely known is that the test site and the much larger Nellis Air Force Range are host to much non-nuclear activity which leaves lasting—and almost certainly toxic—effects. The extent of this activity is said to have picked up considerably since the debut of the "Star Wars" boondoggle.

I realize that Wuerthner is not contemplating the Test Site or the bulk of Nellis Range as part of his proposal. But the Desert National Wildlife Refuge is the centerpiece of his proposal. And indeed, the Refuge must be included in any meaningfully large preserve.

As Wuerthner points out, the "west half" of the Refuge is part of Nellis Air Force Range. Actually, somewhat more than half of the Refuge is within Nellis Range. While aerial gunnery may be the principal use, there are activities happening on the ground within the Refuge. Given the sorry record of the military in Nevada (not long ago, substantial areas outside of the Fallon Naval Air Station were found to be contaminated with unexploded ordnance and toxic chemicals) I would be highly uneasy as long as the Air Force continues to operate within the Refuge.

Are there any meaningful checks on Air Force activities here? Does the U.S. Fish and Wildlife Service have any control over what

the Air Force can and cannot do? Given the proposed and actual cuts in military budgets, what chances are there to restore this part of the Refuge to its original purpose?

I believe there is a real opportunity for a large wilderness preserve in southern Nevada. Even the proximity of Las Vegas, a mecca of greed and materialism, is more of an asset than otherwise. For as bizarre as it may seem, Las Vegas is the stronghold of what progressive, pro-environmentalist vote there is in the state. It would be much more difficult to establish a large preserve in, say, Elko County, with its millionaire welfare ranchers. (Clinton carried Clark County but came in third in Elko.)

Oh, by the way, George, Charleston Peak isn't the 3rd highest in Nevada—among named summits, it's at least #7.

—D. Rat

OVERCOMING OVERPOPULATION IS KEY

Many thanks for the (several) copies of the special Wildlands Project issue. I've put them into appropriate hands. Without reservation, I can say that you folks up there in Canton have outdone yourselves by getting this rag into print & wide distribution. Let's implement.

Now, for my beef. (Sorry veg-heads, but I'm going down with a burger in one hand and greasy fries in the other.) All the hypothetical restorative efforts in the world can't dodge the keenly obvious realism underfoot: too many people. Even if, say in 150 years, we and those who follow somehow manage to reverse the present societal plunder and set aside every wild area proposed by The Wildlands Project—to what avail if our population continues to increase exponentially?

New World Order notwithstanding, it's still "growth for the sake of growth" around here—which fits nicely into the corporate oligarchical long range way of doing things. Either we 1. Quit consuming, or 2. Quit producing consumers—in order to facilitate the Grand Scheme. Even with every core area and corridor in place, a simple politically motivated stroke of the pen (digital?) could easily undo what it will take "us" decades to restore to a quasi-approximation of wholeness.

We've been through all this before—land hungry homo erectus asphaltus expanding into every niche and cranny conceivable, and some that aren't.

Thus, and not to belabor the point, any visionary ecological New Conservation Movement agenda must begin with the premise that overshoot is real and we're already there. Ghost acres aside, we're living on borrowed time.

"The movement" has to be willing to seriously take the population issue to the streets, to the board rooms of corporate America, and to the commissars at every level of power. This is not a pro-choice/pro-life thing. Unless you define pro-life as pro-biota. And we do.

Rather, we must conceive and formulate a comprehensive and workable long range schematic for reducing America's (and global) population in concert with our broad based wilderness recovery work. Abbey thought that the U.S. of A could be improved by getting the population back to about 75 million. That's a good start, as far as short term goals are concerned.

Perhaps we can just enlist our legions of conservation biologists to reckon just exactly what the carrying capacities of the various bioregions are, broken down into micro-bioregions, etc.

In essence, when we look at those nice maps which appear in the Special Issue, we should see optimum human population numbers in correspondence with each geographical locale. If the marshlands of the west coast of Florida can only tolerate 6000 people operating at current technology, then so-be-it. That should be as central a focus to the work as re-establishing cores, etc. Sorry, Tampa.

Of course, I am in no way suggesting we minimize the strategy of The Wildlands Project's mission; rather that we escalate the "audacious plan's" scope to put population issues where they belong—on the front burner.

Now that I've broached the most politically incorrect topic of the day, I think it's time to get back to safer climes: a hot shower and a cold brew....

—Ned Mudd, POB 130411, Birmingham, AL 35213

[Ned Mudd is a correspondent for *Wild Earth*, staff attorney for the Biodiversity Legal Foundation, plays in a band called the Fabulous (Alabama) Swamp Dogs, and has no children.]

The theories Paul Martin presents in *Wild Earth* Winter 92/93 to explain the wave of Western Hemisphere extinctions after the Wisconsin glacial stage are questioned by E.C.

Pielou in her book *After the Ice Age*. The scholarly but very readable book is available from Dave Foreman's Book Shelf.

Pielou is also skeptical of climate change as a cause for extinction and suggests a possible, unknown catastrophic event.

I do not believe the theories are disjoint. Martin writes that population growth could have been 2 to 4 percent annually during the time of greatest hunting opportunity. Such an exponentially growing population would double every 35 to 17.5 years (approx.). The impact of such rapid doubling must be considered a catastrophic event.

Examples may be illustrative. Human population has doubled about 16 times in the last million years. Doubling at a 35 year rate, that growth would have been accomplished in only 560 years; at a 17.5 year rate, 280 years.

To fill the entire Earth's surface, with a 2' square for each person, the present population would have to double about 19 times. Doubling at the present 40 year rate, that would take about 760 years; at a 17.5 year rate, about 335 years. In any case the effect comes of a sudden.

I think we would do well to occasionally remind ourselves of the insidious nature and tremendous impact of exponential population growth, or for that matter, growth of anything with physical dimensions. Such growth is indeed comparable to other events generally considered catastrophic.

We fail to be alarmed by exponential growth today only because we perceive time in an extremely short frame of reference. In historical perspective, where a few hundred years margin of error is routinely accepted, the true character of exponential growth is revealed.

—Henry Bruse, 235 Travis Drive, Wisconsin Rapids, WI 54494



THE QUESTION OF MANAGEMENT: RESPONSE TO "RESPONSE TO SEIDMAN"

It seems the depth of my critique of "management" went unnoticed. I thought it was clear that my letter was about overall conservation goals and not whether this small reserve in Nebraska required human intervention now. I was not calling for the immediate and final cessation of all human manipulation of the land. And I was certainly not saying we should allow degraded ecosystems to run down or species to become extinct.

I understand that small fragments of nature, unable to maintain any sort of dynamic balance, must be managed if certain vulnerable species are to persist. Etc. But from this conclusion, one's thinking may go in one of two directions: either to accept an emasculated nature that will require eternal human intervention or to work for the restoration of reasonably complete ecosystems which, in time, will be self-managing.

There seems to be a schism among conservation biologists. On one side are the "realists": convinced that the forces in our culture causing extinction cannot be stopped, they hope merely to salvage (for our aesthetic pleasure?) some of what non-human life remains. Then there are the visionaries who dare to hope that we will soon accept our role as one species among many and relinquish the land necessary for wild ecosystems to continue functioning. (The collapse of this mad civilization is another pathway to that goal, if we don't take too much with us.)

Reed Noss, his disclaimers to the contrary, actually provides most of the response I had hoped for in his critique of Diamond's Yellowstone remarks. It's because Diamond accepts cattle ranching and other disruptive uses of public land that he posits an ever-increasing need for management to counteract them. It's his acceptance of the disruptive as well as the beneficial (?) types of management that makes him an apologist for the system (at least in his *Natural History* essay). In his insistence on taking control of the external world—instead of our appetites—he is in accord with the conventional values of our society, according to which humans have the unquestioned right to impose their will on nature.

Noss's impatience with Diamond's anthropocentrism is what I had hoped to draw out, not for me but for the trusting readers of

Natural History magazine, who need to hear that complete and healthy ecosystems are still possible if we have the vision and will to let them happen.

That said, I must admit to being suspicious of our desire to manage landscapes even where it clearly seems necessary. We in this culture are uncomfortable with nature, inside ourselves and out, and this anxiety creates a compulsion to subdue it. Management of nature, no matter how benign the original intent, easily becomes an end in itself, as every success builds in us an illusion of omnipotence that we cannot resist. And which we rationalize as "stewardship".

—Mike Seidman, Arizona

RESPONSE TO SOULÉ

Michael Soulé surprised us with his middle-of-the-road "Vision for the Meantime" in the *Wild Earth* special issue on The Wildlands Project. Whatever possessed him to suggest that conservationists should patiently accept continued logging in old growth on the national forests and in wilderness recovery areas because some of the predators we hope to see reintroduced "won't need the corridor for 40-50 years"? Granted, there is a need to reduce the fear and antagonism heaped upon environmentalists by their adversaries, but Soulé's hypothetical example of how to do it misrepresents the nature and importance of current national forest controversies over old growth. We don't know if this is a real event he cited or a fabricated one, but in either case it requires a response.

First of all, any remaining old-growth forests are extremely rare habitats which support a high level of species diversity and which should be afforded the highest levels of protection. The fact that there is so little old-growth forest left anywhere in the lower 48 states, especially in the East, makes it unconscionable to suggest that it is not important to preserve the remaining patches on the national forests. Even the moderate environmental groups and a large contingent of politicians in Washington are supporting an old growth logging ban on the national forests. In fact even a sizeable percentage of employees of the Forest Service agree that remaining old growth should be preserved. The question that should be asked is not whether we can wait 50 years for a second growth forest to recover in the next clearcut, but whether industry and agency

foresters can learn to accept limits and manage timber production sustainably and cooperatively on the existing commercial timberland base without constantly reaching into the hinterlands to consume the least accessible vestiges of old growth.

If Soulé had said we should negotiate with private property owners or compromise in cases where the Forest Service wants to log in existing, roaded, second and third growth forests, then we would have little quarrel with him. But he advocated acquiescence in a case where more old growth was to be liquidated simply to satisfy current (probably unsustainable) lumber market demands. Clearly, the national forests—being public lands—are an appropriate venue for advocating non-market management strategies. Despite recent convention (since World War Two), there is no "right" to log everything log-able on the national forests.

Soulé says we should make these sacrifices so that rural communities dependent on national forest timber don't react with defensive outrage. We share his sympathy for those communities, but his solution only perpetuates the problem. Cutting more old-growth will not keep these people employed. We must look at the big picture. Communities faced with impending mill closures are not victims of environmentalists' intransigence; they are victims of historic overproduction, short-sighted busi-

ness decisions, erratic market conditions, and a migratory lumber industry with little loyalty to the communities they helped create.

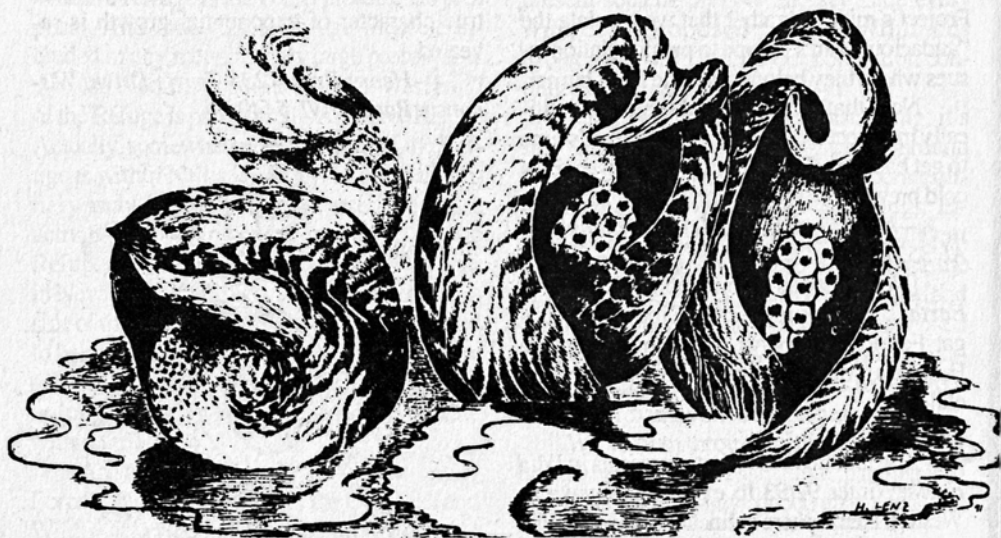
At a conference on the future of the wood products industry in Missoula, Montana in September 1991, William Galligan of the Forest Products Research Society said in his keynote address that arguments about jobs and the impact on communities may sometimes be helpful in dealing with politicians, but community stability "is not why we're here."¹ Until the forest products industry accepts responsibility for its business practices and stops shifting blame to the public for "demanding wood products," rural timber community instability will remain a fact of life.

It is a role of the environmental advocate and the conservation biologist to offer a strong alternative to the vision of the Galligans of this world. And it is government's role to channel America's social and industrial energies in ways that are responsive to a diversity of values and responsible to future generations and the health of the planet.

—Paul Hirt, Program in Nature, Culture and Technology, University of Kansas.

—Diane Debinski, Asst. Professor, Environmental Studies Program, University of Kansas.

1. Quoted by Jim Ludwig in his article, "Pin arguments on demand, forest researcher advises," *The Missoulian*, Sept. 13, 1991.



Skunk Cabbage Melting The Ice, by Heather K. Lenz

Natural World News

YELLOWSTONE'S NORTH FORK ROAD CAN ONLY BE WORSENERD BY WIDENING

The North Fork of the Shoshone River runs eastward out of Yellowstone National Park and through the Shoshone National Forest, flowing first through heavily forested terrain, then through progressively drier country characterized by rock formations reminiscent of the Southwest. Twenty-eight miles east of the Park, as one is leaving National Forest and entering private land, the Valley of the North Fork widens dramatically into what is known as Wapiti Valley, its floor three to five miles wide and about 10 miles long. To the north are the peaks of the North Absoroka Wilderness Area, and to the south those of the Washakie Wilderness, both segments of the Absoroka Range. The portion of North Fork Valley known as Wapiti, then, is a deep intrusion of private land into a mountain wilderness. Until fairly recently Wapiti was almost exclusively given to ranches of substantial size, but with the subdivision that has occurred in recent years the Valley has taken on something of a suburban character.

The Yellowstone Ecosystem, of which approximately one-sixth has been set aside as Yellowstone Park, is a natural entity. Despite its jagged outline—its tendrils of Teton and Gallatin and Wind River ranges

springing forth from a centerpiece of lake and plateau—it is a tightly knit family of interdependent parts. A sense of continuity among parts comes from knowing of the region's great mammals which, by the thousands, make annual altitudinal migrations. In summer Elk and Mule Deer and Bighorn Sheep graze the meadows above timberline. As summer wanes, they begin a descent over ancient trails to ancestral wintering grounds in the valleys. Then, as winter gives way to spring, survivors begin another slow trek upward toward the brief high country summer. It's a rhythm as steady as a great, slow heartbeat, without which the mountains would become just so many pretty rocks.

With respect to Wapiti and environs, the migratory needs of great beasts draw together valley floor, alpine tundras, and intervening tree zones into a single cohesive unit. To dissect and isolate portions is to damage the whole. To the holistic eye, then, Wapiti Valley should be an inviolate winter range.

Yet as a segment in the migratory cycle of animals, the valley floor is all but destroyed. The subdivision has accelerated and is spreading up the hillsides. Ever more houses are being built, every one with its own unsightly, bulldozed gash of a road.

At the eastern end of Wapiti Valley, just before it flows out of the mountains and into the Bighorn Basin, the North Fork has been dammed to create Buffalo Bill Reservoir. Between the reservoir and the National Forest boundary, highway "improvement" in recent years has made that stretch of 14-16-20—the road connecting Cody, Wyoming with the East Entrance of Yellowstone Park—a straight raceway. It is a road you simply cannot ignore. From the crest of the Wapiti Ridge, miles within the Washakie Wilderness, the road appears as a distinct line in the valley below, intruding like a fracture in a porcelain sculpture. Reflections of sunlight from windshields transmit to the very mountain-tops a sense of pistons and fumes.

Driving west from Cody toward the Park one passes through Wapiti over that "improved" stretch. Then, as one enters the Shoshone National Forest, the road narrows and proceeds to meander through the Valley of the North Fork for the 28 miles to the Park's East Entrance. At the moment, this 28 mile segment of 14-16-20 is as it has been for many decades, following the natural contours of the valley floor. Vegetation grows to its very edges. Narrow as it is, it impedes animal movements as little as one could expect a paved road to do. But political and economic powers have judged the North Fork Road inadequate for the multitudes on tight schedules and for those abominable cracker boxes on wheels, the recreation vehicles. Through it all only one reason is given for improvement: they say the present road does not conform to modern highway standards.

But it should not be a highway. The biology of the valley and the matchless scenery there call not for highway speeds but for slow meandering. Those intent upon



seeing the wonders of Yellowstone should not be herded with all due haste to the East Gate but prompted to discover that in North Fork Valley they are already in Yellowstone, in one of the Ecosystem's finest parts at that.

In the public mind is a misconception that Yellowstone, so much a part of American lore, is sacred and therefore safe from commercial exploitation. Indeed, few are even aware of the difference between Yellowstone Park and the Greater Yellowstone Ecosystem, of which the Park is just a portion. Few understand that the boundaries of the Park—mere lines on a map—have nothing to do with the natural rhythms of the larger Ecosystem, and that the health of the Park depends upon the health of the whole. Of course Forest Service officials, in sync with local industrial groups and their politicians, are happy to keep it that way, because they know that an informed citizenry, if given a choice, would not let Yellowstone be developed to death. Which is exactly what is happening now.

An improved highway in the North Fork would be a much grosser stab wound into the heart of Yellowstone. It's not too late to stop the road, though; construction has not yet begun. But enough people will have to raise enough hell to outvote local industrial interests. Furthermore, the whole issue of Yellowstone's future will have to go national, because the road is but one strand in a noose of development tightening about the region. In fact, the greatest threat to Yellowstone comes not from any single clearcut, or mine, or road, or subdivision, or herd of domestic livestock, but from the cumulative effects of all of these, causing the piecemeal disintegration of the Ecosystem.

WHAT YOU CAN DO:

Compose a letter in which you express your concern for the ongoing breakdown of ecosystem integrity in Yellowstone. Draw particular attention to the North Fork Highway. Send the letter to your representative and both senators (US House of Representatives, Washington, DC 20515; Senate DC 20510), and copy it to the Chamber of Commerce, Cody, Wyoming, 82414.

Even more important, support the organization in the Northern Rockies that advocates without compromise on behalf of wilderness values in the Yellowstone Ecosystem: Alliance for the Wild Rockies, Box 8731, Missoula, MT 59807. Another deserving organization is the Biodiversity Legal Founda-

tion, POB 18327, Boulder, CO 80308-8327. In my opinion, you should avoid any form of support for the Greater Yellowstone Coalition, which I believe is so thoroughly infiltrated with commercial interests that it has long since lost effectiveness as an environmental organization.

—*Bill Willers, Professor of Biology at the University of Wisconsin at Oshkosh, and Executive Director of the Superior Wilderness Action Network (SWAN)*

SAVE ENOLA HILL!

Native Americans for Enola, and other concerned parties filed suit on 2 December 1992, charging the U.S. Forest Service (Zigzag District, Mount Hood National Forest, Oregon) with violations of the National Historic Preservation Act, for failing to consider the traditional cultural use of Enola Hill by Native American people. The Forest Service issued a blanket permit to Caffall Bros. Forest Products, Inc. and Ray Schoppert Logging to cut timber on the hill, which is considered a sacred site by many Native Americans. Log-

gers have already clearcut approximately 20 acres on Enola Hill.

Enola Hill's forest cover includes Douglas-fir, Pacific Silver Fir, Western Hemlock, Western Red Cedar, Red Alder, and Lodgepole Pine. The understory includes rhododendron, huckleberry, Salmon Berry, strawberry, Thimble Berry, trillium, Vine Maple, Salal, and manzanita. Groundcover species include Beargrass, Swordfern, Oxalis, Oregon Grape, and Vanilla Leaf.

Included among the fauna are Great Horned Owls, Bald and Golden Eagles, Black Bear, Cougar, River Otter, Beaver, and Coyote. The Forest Service has observed Spotted Owls. Due to its remarkable natural and cultural features, an effort is under way to place Enola Hill on the National Register as a traditional cultural property.

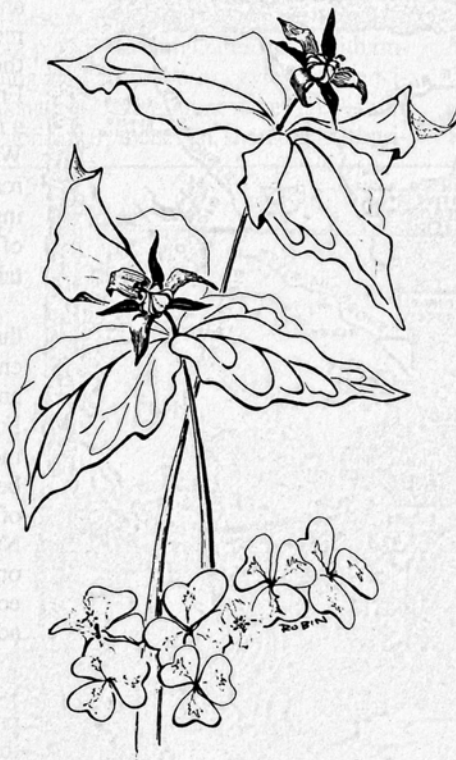
Native peoples from the Grande Ronde, Warm Springs, Yakima, Umatilla, Nez Perce, and Siletz reservations, as well as Wyams from the Columbia River region regard Enola Hill as sacred, and have practiced rituals at the site. The Mount Hood National Forest has failed

to complete a thorough Traditional Cultural Property Evaluation of Enola Hill, as required by a 1991 court order. Such an evaluation must include interviews with traditional elders and spiritual leaders in order to comply with historic preservation laws.

The Forest Service has displayed a pattern of abuse and neglect when it comes to recognizing and protecting Native American traditional cultural properties. At a prior hearing, U.S. attorney Tom Lee exclaimed, "They would want us to believe that the forest and the hill are like some kind of church!" That's right, Tom, they would.

Nation-wide expressions of support for the protection of Enola Hill are important. Send letters to: Mike Edrington, Forest Supervisor, Mount Hood National Forest, 2955 NW Division St., Gresham, OR 97030. Letters in support of placing Enola Hill on the National Register can be sent to: Cascade Geographic Society, POB 398, Rhododendron, OR 97049.

—*Paul Faulstich, Portland, OR*



Western Trillium by Robin Peterson

FOREST SERVICE TRIES TO WHISTLE SWEET BYE AND BYE TO THE RED-CKAKADED WOODPECKER IN DIXIE

The Red-cockaded Woodpecker (*Picoides borealis*) is an Endangered species that inhabits the mature, open pine forests of the southeastern United States. Historical distribution of the bird included 15 states from Texas to Maryland to Florida. Currently populations are known to exist in 13 states. Historically the woodpecker was known to exist in 16 counties in Tennessee. *Today, there is one known bird left in the entire state of Tennessee.* Why is this bird, along with many other listed species, losing ground at a time when the American Forest Council tells us there are more trees than 70 years ago?

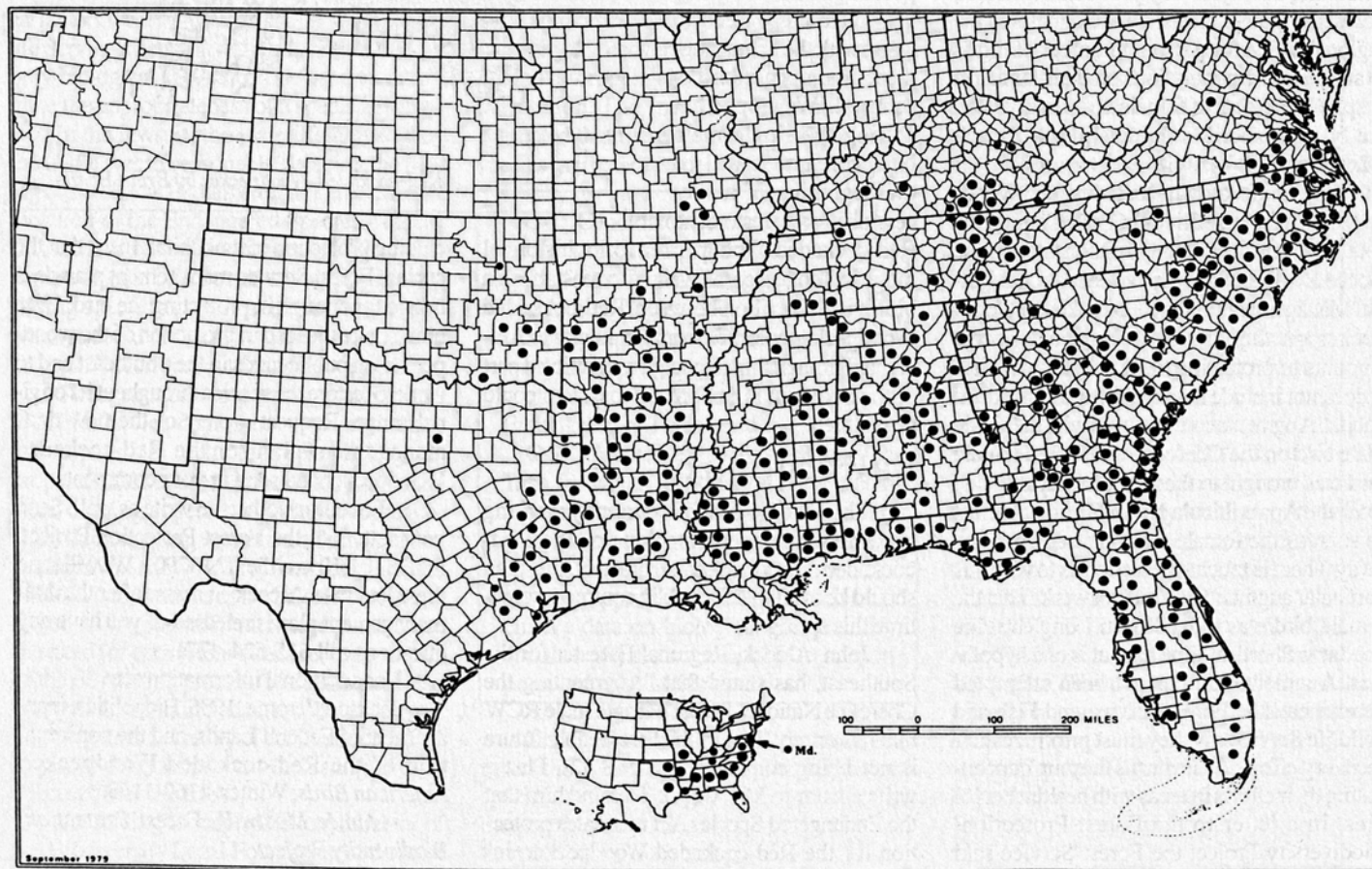
Tree farms are different from natural ecosystems, but the American Forest Council, a coalition of timber industry corporations, is either ignorant of this or forgets to mention it in their *National Geographic* advertisements. Loss of habitat is the number one reason behind species extinction worldwide. To better

understand the loss of habitat specific to the Red-cockaded Woodpecker, one must understand the ecosystem that it needs, the Southern Pine Forest Ecosystem. The Red-cockaded Woodpecker (RCW) is an indicator species of the Southern Pine Forest. When an indicator species is in decline, the overall health of its forest ecosystem is probably in decline. The Southern Pine Forest Ecosystem, broadly defined, includes four pine species: Longleaf, Slash, Loblolly, and Shortleaf. Fire plays an extremely important role in the Southern Pine Forest Ecosystem. Thunderstorms occur in the Southeast at a higher frequency than in any other region in North America. The lightning associated with these thunderstorms causes frequent fires, but human fire suppression techniques have disrupted the natural fire regime. Lack of fire in the Southern Pine Forest results in growth of a thick understory of hardwoods which will eventually shade out the pines. Currently most pine trees in the South fall prey to the forest industry's practice of clearcutting pines at 20 years of age for pulpwood or 40-60 years of age for lumber.

When a species is listed under the En-

dangered Species Act, a "recovery plan" for the species is required. A Recovery Team was first appointed for the Red-cockaded Woodpecker in 1975. This group included biologists from governmental and academic sectors plus a heavy representation from forest industry. They presented their recovery plan to the U.S. Fish and Wildlife Service in 1979. Backlash from the Forest Service and other timber interests resulted in this original plan being revised to make management of the bird compatible with modern forestry practices. The U.S. Fish and Wildlife Service (FWS) has the responsibility of monitoring Endangered species. Much research has been done on the Red-cockaded Woodpecker, yet FWS still has no program devoted to restoring the bird to its original historic range. Even in the few select areas on Forest Service land where the bird has increased in population, the Forest Service is not acquiring more habitat or allowing areas to grow back into potential habitat.

Red-cockaded Woodpeckers generally weigh about 50 grams (a little less than two ounces). They are about the same size as a Cardinal or a Robin. These woodpeckers live



Historical distribution of red-cockaded woodpecker, by county and state.

in family groups, called clans, that occupy stands of cavity trees; called colonies. They need old pines that have red heartwood rot; averaging 95+ years for Longleaf Pine and 75+ years for Loblolly and other pines. Excavation of a cavity may take several years since the bird is relatively small and excavates its cavities only in live pine trees. A clan may include as many as ten birds. The use of the term "colony" even when there is only one breeding pair in a clan gives a false sense of abundance. A clan never includes more than one breeding female. RCWs nest between late April and July. The females lay two to four eggs. The eggs hatch in 10-12 days. Often, the entire clan of birds helps with incubating eggs and raising the young. Young male birds often remain in their natal colonies to help around the nest. Young female birds leave the colony in search of other colonies needing a female bird. Every year there is an excess number of female birds.

Part of the RCW recovery effort is augmentation. Augmentation involves moving a bird, generally female, from one colony and pairing it with a single bird, generally male, in another colony. Every year some National Forests in the Southeast put in requests to the regional office for a certain number of birds to augment the populations on their land. Yet despite the excess of female birds every year, the National Forests do not fill all of each other's requests.

The single known Red-cockaded Woodpecker in Tennessee lives in Polk County, the southeastern-most county in the state, on the Ocoee District of the Cherokee National Forest. Management for the Red-cockaded Woodpecker on the Cherokee National Forest amounts to protecting the single known bird. It does not include managing for future RCW habitat. Augmentation was tried with the single male bird on the Cherokee in 1990. A female bird was brought to the Cherokee by airplane from the Apalachicola NF in Florida. Almost as soon as the female was released she flew away. There is much speculation as to why this particular augmentation did not work. That the female bird was moved from Longleaf Pine habitat to Shortleaf Pine habitat is one hypothesis. Augmentation has not been attempted here since. The Forest Service and Fish and Wildlife Service say they must prioritize their recovery efforts. This means they are concentrating their efforts in areas with healthier colonies. In a letter to the Forest Protection/Biodiversity Project the Forest Service said

that the colony on the Cherokee is "low priority."

Global Sustainability's Forest Protection/Biodiversity Project and the Sierra Club in Knoxville believe it is time to begin a comprehensive and aggressive augmentation program for the single known bird left in Tennessee. Since the Forest Service is not working to find a female bird, the two groups are attempting to get a bird from the Daniel Boone National Forest in Kentucky or the Talladega National Forest in northern Alabama. We have been in contact with Jerome Jackson, a biologist at the University of Mississippi, who has been working with the Red-cockaded Woodpecker for over twenty years. He has agreed to assist with the actual augmentation once a bird is secured. We hope that pairing the single male bird with a mate will be the beginning of a successful effort to restore the Red-cockaded Woodpecker to its historical range in Tennessee, as well as to reestablish a biological corridor between Red-cockaded Woodpecker colonies from Kentucky to Alabama. Through this campaign a significant part of the Southern Pine Forest Ecosystem could be restored.

WHAT YOU CAN DO:

The Forest Service is currently working on a new management plan for the Red-cockaded Woodpecker. A draft of the plan should be available for public comment sometime this spring.

John Alcock, Regional Forester for the Southeast, has stated that "Augmenting the Cherokee National Forest's single male RCW this fall or any time in the foreseeable future is not being considered..." (9/8/92). Please write a letter to Mr. Alcock. Remind him that the Endangered Species Act mandates protection for the Red-cockaded Woodpecker, in-



Red-cockaded Woodpecker by Brian Evans

cluding protection of its habitat. Insist that the current Forest Service management plan does not go far enough in protecting the bird. Urge him to take the lead in protection of the woodpecker on public lands in the Southeast and to work to restore the species throughout its original range. Request a copy of the new draft management plan for the Red-cockaded Woodpecker and send in your comments.

Encourage others to write as well. Send your letters to the Forest Protection Project, POB 1101, Knoxville, TN 37901. We will send these letters to Alcock en masse after the draft management plan is released. If you have any questions call 615-524-4771.

For additional information see:

Jackson, Jerome. 1986. Biopolitics, management of Federal Lands, and the conservation of the Red-cockaded Woodpecker. *American Birds*, Winter: 1162-1168.

—Aimée Mostwill, *Forest Protection/Biodiversity Project*

INTERIOR DEPARTMENT TO EXPEDITE FEDERAL PROTECTION FOR HUNDREDS OF IMPERILED SPECIES UNDER THE ESA

In one of the broadest settlements ever of a lawsuit under the Endangered Species Act (ESA), the U.S. Department of the Interior has agreed to expedite federal protection for hundreds of candidate animal and plant species now facing extinction and to take steps to protect more than a thousand additional species. In total, nearly 1400 species are affected by the agreement.

On 15 December 1992, the U.S. Department of the Interior (USDI) officially agreed to an out-of-court settlement of a lawsuit filed by nine grassroots activists, the Fund for Animals, and other environmental organizations in May of 1992. The Biodiversity Legal Foundation developed the legal strategies in the case while closely monitoring ESA listing activities in all eight U.S. Fish and Wildlife Service (FWS) Regions. [FWS is in the Interior Department.] In its monitoring, the BLF discovered numerous cases in which economic and political factors were influencing the Fish and Wildlife Service's listing priorities. Under the ESA, only biological factors can be used to determine the appropriateness of a species listing.

In the lawsuit, the plaintiffs argued that the USDI was unreasonably delaying the listing of species as Endangered or Threatened in violation of the Endangered Species Act and the Administrative Procedures Act. They also argued that the USDI acted unlawfully in classifying species as "warranted but precluded" when it could not demonstrate "expeditious progress" in carrying out listing responsibilities.

The agreement also formalizes a Fish and Wildlife Service commitment to emphasize, where possible, multiple-species listings or proposals that address entire ecosystems instead of using a species-by-species approach. In addition to being more cost effective, these methods will allow FWS to focus on the needs of biotic communities as a whole. In settlement negotiations, plaintiffs' attorneys pointed out the need for ecosystem status reviews as part of the ESA listing process. The settlement also plugged an administrative loophole that was allowing then-Secretary of the Interior Manuel Lujan to delay or prevent the listing of sub-species under the ESA.

According to Jasper Carlton, Director of the Biodiversity Legal Foundation and one of

the lead plaintiffs in the case, "This settlement will result, in the next few years, in a huge increase in the number of species that are protected under the Endangered Species Act. It represents a desperately-needed and long-overdue commitment by the government to take more seriously its obligation to protect our nation's dwindling biodiversity." The settlement agreement provides a time table under which species in need of ESA protection will be listed or proposed for listing.

With a growing backlog of species in need of federal protection, FWS, the federal agency responsible for the implementation of the ESA, was not making expeditious progress in listing species. The delays, according to a 1990 Inspector General's report, have resulted in the extinction of species before federal protection could be granted. By FWS's own admission, between 1980 and 1990, for example, 34 species perished while awaiting listing under the ESA. Some C-1 candidate species had languished in the "warranted but precluded" category for as long as eight years without federal protection. In addition, as a result of the bureaucratic footdragging of the Reagan and Bush administrations, we may have lost the opportunity to recover hundreds of species imperiled by on-going habitat fragmentation and destruction. The Inspector General's report estimated that there may be as many as 3600 species in immediate need of ESA protection.

C-1: Candidate Species for addition to the List of Endangered and Threatened Wildlife and Plants, Category 1. Taxa for which the U.S. Fish and Wildlife Service currently has substantial information on hand to support the biological appropriateness of proposing to list the species as Endangered or Threatened.

C-2: Candidate Species, Category 2. Taxa for which information now in possession of the U.S. Fish and Wildlife Service indicates that proposing to list the species as Endangered or Threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat(s) are not available to support proposed rules at this time.

The Biodiversity Legal Foundation estimates that over 6000 native plant and animal species are now biologically threatened or endangered in the United States. Of these, less than 20% have adequate protection and only

Natural World News

755 have been listed under the federal ESA. FWS is also failing to recognize and classify hundreds of species as C-2 candidates.

Of major concern to plaintiffs, following the settlement agreement, is the present inadequate level of FWS funding for ESA listing activities. Conservationists are writing to the new Secretary of the Interior, Bruce Babbitt, and to members of their congressional delegations requesting increased funding for ESA listing activities.

A few of the species that will benefit from the agreement are the Southwestern Willow Flycatcher, California Red-legged Frog, Spotted Frog, Puerto Rican Broad-winged Hawk, Sherman's Fox Squirrel, Appalachian Bewick's Wren, Texas Ayaia, Saddle Mountain Bitter Cress, Limestone Flameflower, Arkansas River Shiner, Florida Black Bear, Mariana Flying Fox, Ponape Short-eared Owl, Eastern Hog-nosed Skunk, Flat-tailed Horned Lizard, Southwestern Pond Turtle, Oregon Semaphore Grass, Steller's Eider, San Bruno Mountain Manzanita, Peirson's Spring Beauty, and the Callippe Silverspot (butterfly).

Of particular interest in this legal action is that the government did not file a motion of dismissal based on inadequate standing. The reluctance of Justice Department attorneys to pursue this defense was due in large part to the extraordinary participation in the case by co-plaintiff/grassroots activists from around the country. They include Jasper Carlton (CO), Keith Hammer (MT), Ned Mudd Jr. (AL), Julia Fonseca (AZ), Joanne Duffey (FL), Dave Hogan (CA), Mitch Friedman (WA), Andrew Weisburd (IL), and Anne Peterman (VT). BLF thanks all these activists and attorneys Eric Glitzenstein and Kathy Meyer for taking a strong stand on behalf of the restoration of imperiled species and natural ecosystems.

The BLF (POB 18327 Boulder, CO 80308-1327) welcomes donations as it continues to integrate biology with law in the effort to protect the elements of natural diversity in this country. Concerned readers can write to Interior Secretary Bruce Babbitt at C St. between 18th & 19th Sts., Department of Interior, Washington, DC 20240; their Senators at US Senate, Washington, DC 20510; and their representatives at House of Representatives, DC 20515.

—Reported by the Biodiversity Legal Foundation

ECOSYSTEMS WITHOUT SPECIES? LEGAL CHALLENGE OF FOREST SERVICE MANAGEMENT BEGINS

Are "biodiversity" and "ecosystem management" more than popular buzzwords to the US Forest Service? Can the Forest Service (FS) protect whole natural ecosystems without concern for how the components of those ecosystems relate and function? To Rocky Mountain Region (Region 2) FS officials, ecosystem management seems to be a way to circumvent requirements for giving special management emphasis to individual species that are in trouble as a result of habitat destruction.

To date, the Rocky Mountain Regional Office of the U.S. Forest Service has failed to promulgate a sensitive species list or program for any of the sixteen National Forests under its management. The Region includes all National Forests and National Grasslands in Colorado, Wyoming, South Dakota, and Nebraska. The Rocky Mountain Region has been the only region in the entire country for many years without a sensitive species program.

An effective sensitive species program is valuable as a proactive mechanism to prevent species from becoming threatened or endangered. The Forest Service's own Manual (FSH) requires it to identify sensitive plant and animal species within its regions. Identifying and classifying sensitive species and determining their habitat requirements are critical steps in protecting native diversity and ecosystems. The regional Forester, Elizabeth Estill, is talking of ecosystem management, without a sensitive species program in place. No National Forest in the Region has completed a comprehensive flora or fauna inventory.

For two years, the Biodiversity Legal Foundation (BLF) has tried to find a solution to this critical problem through the administrative process. On 8 February 1993, it filed formal notice of intent to file suit against Secretary of Agriculture Mike Espy and Forest Service Chief F. Dale Robertson because of the Forest Service's failure to implement a sensitive species program in the Rocky Mountain Region. Joining the BLF in this legal effort are the Native Ecosystems Council, Friends of the Bow, Ancient Forest Rescue, and twelve grassroots activists from Colorado, Wyoming, South Dakota, and Nebraska. In their notice, prospective co-plaintiffs argue that the Forest Service has violated the National Forest Management Act, Forest Service regulations (in-

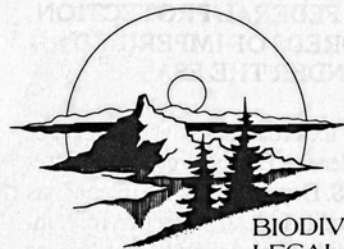
cluding those contained in the Forest Service Manual), the policies of the Endangered Species Act, and the Administrative Procedures Act.

The BLF has identified more than 200 native species in need of special management emphasis in Region 2. Without classification as sensitive species, their future viability is at stake. Agency guidelines that do not ensure the viability of native species violate the National Forest Management Act (NFMA) and all guidelines must serve to adequately protect native species classified as "sensitive." Region 2's lack of a sensitive species list allows species such as the Western Boreal Toad, Lynx, Rocky Mountain Capshell Snail, and Penland Alpine Mustard to continue sliding inexorably toward extinction. In the case of the Fen Mustard in Colorado, lack of proactive management allowed mining claims to be filed on top of a major population of this endemic plant. The claims were then used in an appeal of proposed Research Natural Area designation for the area, resulting in its withdrawal. Nor has the FS stopped recreational ORV use in the Fen Mustard's delicate alpine habitat.

A "sensitive" species is one for which population viability is a concern. Downward trends in population numbers, density, or habitat capability that would reduce a species's existing distribution are criteria for classification as "sensitive." The viability of native species cannot be assured if the Forest Service does not identify and classify species as sensitive, then give these species special management emphasis in ongoing forest planning.

Any biologically sound plan for protecting rare species must protect the ecosystems upon which they depend. This was the intent of Congress in passing the Endangered Species Act. Region 2 officials have ignored the clear mandate of Congress as well as recommendations from the scientific community. This Region has long favored resource exploitation over natural diversity, and evidently intends to continue this destructive policy.

This case holds con-



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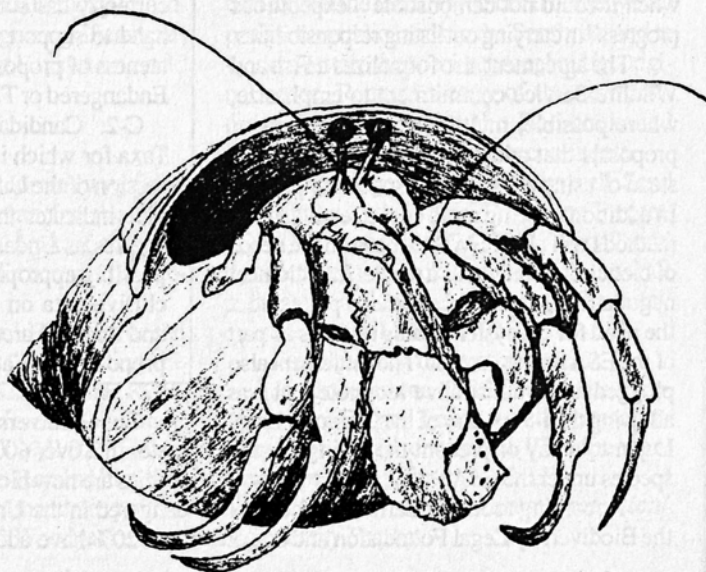
siderable interest for activists defending biological diversity because of the lack of legal case precedents. The case could determine whether we can legally force the Forest Service to initiate a sensitive species protection program.

If the Forest Service does not take the necessary steps within sixty days of the date the notice was filed, prospective co-plaintiffs will bring the appropriate legal action in United States District Court.

What you can do: Write to F. Dale Robertson, Chief, U.S. Forest Service, POB 96090, Washington, DC 20090-6090, insisting that the Rocky Mountain Region implement an effective sensitive species program immediately.

Send a tax-deductible contribution to the Biodiversity Legal Foundation, POB 18327, Boulder, CO 80308-1327, in support of this legal action. Thank you.

—Reported by Jasper Carlton



Hermit Crab, by Jennifer Wiest

Hydro-Quebec Dams More Rivers and Natives

by Scott Thiele

Edward Tapiatic is Cree and he lives,

some of the time, in the village of Chisasibi, where the powerful Chisasibi River enters James Bay. When Edward isn't in Chisasibi, he is usually some 200 miles to the east, hunting and fishing on his family's traditional wilderness hunting grounds. Edward's family has lived off this land for many generations; and now the next generation—Edward's teenage son—accompanies him into the bush, following Caribou or geese, or learning to fish through thick winter ice when the wind chill is thirty below.

Their wilderness home is a simple lodge of small pines laid together in an A-frame covered with sod and canvas. A small metal box with a flue serves as a cookstove. Upon returning from a day's hunt, Edward sets fire to a handful of sticks, and eventually the stove warms the lodge. When the lodge is warm, he removes his Caribou boots and hangs them on a rack of pine branches to dry.

Edward's lodge rests on the western slope of a low hill, near the shore of a large lake, in a primeval wilderness that has seldom seen a white man's footsteps, if ever. Across the lake, many miles away, a small mountain stands alone against the western sky where the winter sun sets, and darkness moves in, then is chased away by the glimmering aurora borealis. This is Edward Tapiatic's life, and he loves it.

In the spring of 1993, Hydro-Quebec will close the gates on its new dams downriver from Edward's lake. Behind the dam the water will rise, and will cover Edward's lodge and the hill. Edward's lands, his family's legacy, will disappear beneath the waters of Hydro-Quebec's reservoir.

Part of Edward will disappear with it.

Quebec City and Ottawa are both about 800 linear miles and a world away from Edward's lodge. There, in the offices of Hydro-Quebec, Quebec Premier Robert Bourassa, and Canadian Prime Minister Brian Mulroney, the decisions to destroy the Cree's ancestral homeland are made. Their latest actions reek of hostility against native peoples.

On 8 January 1993 Hydro-Quebec and the Grand Council of the Cree signed an Agreement allowing H-Q to build two more dams. Under the Agreement, H-Q will pay the Cree \$50 million, and the Cree will cancel lawsuits they launched to block the construction. Most of the money will go to the public works, recreation, and other programs in the villages of Chisasibi and Wemindji; and the Grand Council will receive \$5 million.

Casual observers have accused the Cree of selling out. This is untrue. As has happened in the past, the Cree were bullied into a corner and forced by circumstances into the Agreement.

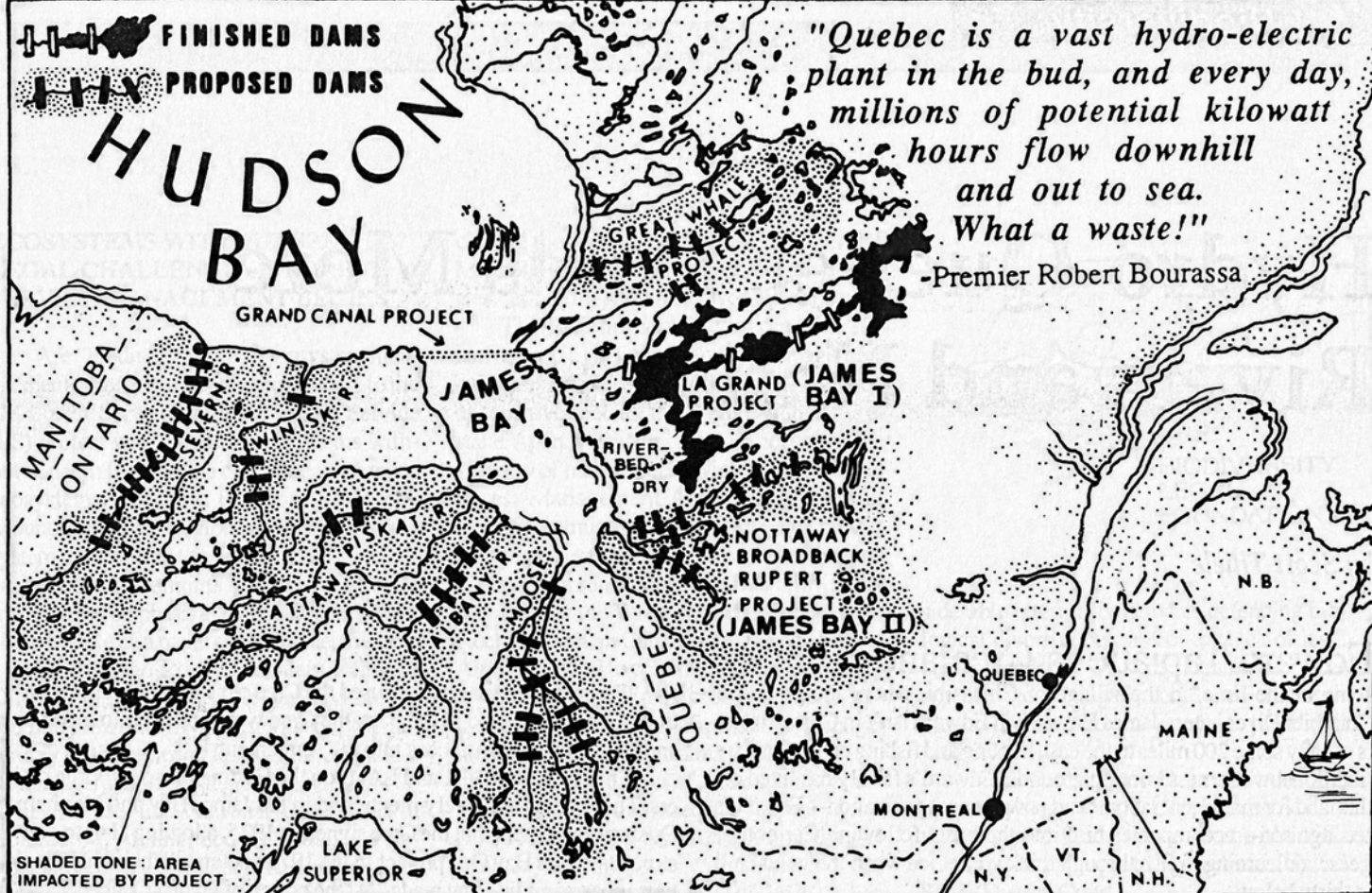
The dams are EM-1 and LA-1, on the Eastmain and LaForge rivers. These dams are barely mentioned in the James Bay and Northern Quebec Agreement that the Cree signed in 1975, allowing H-Q to construct its James Bay One project. In the 1975 document, their only mention appears in a line that reads, "At the option of Hydro-Quebec, LA-1 and EM-1 could be built at a later date."

To no one's surprise, H-Q decided to build them, and the Cree retaliated with lawsuits seeking a full Environmental Review. The Federal Minister of the Environment, after a year's deliberation, ruled that the dams were not subject to any review under the 1975 Agreement but were subject to the Federal Environmental Assessment and Review process. In other words, Quebec Province wasn't required to review the dams, but the Canadian government was.

That decision was appealed by Hydro-Quebec, Quebec Province, and the Canadian government, who argued that the feds should not have to do any review at all. A three-man court consisting of Quebec judges overturned the review decision. The Cree continued their lawsuits to stop the dams, but H-Q began construction, and the Cree soon found themselves in the same predicament at James Bay that other natives had faced with two dams in western Canada—a belligerent province building dams before the federal review was even started.

The western dams were Rafferty-Almeda Dam in Saskatchewan and Old Man River Dam in Alberta. In the late 1980s a court ordered the Canadian government to do Environmental Reviews on both dams. The provinces, declaring the federal reviews intrusions on provincial autonomy, started construction before reviews began. After the review began on the Old Man Dam, the Review Panel visited the site, saw that construction was already well along, and resigned. It took over a year to replace the Panel. By the time both reviews were finished, Almeda was 70% built and Old Man was 90% built. Moreover, the federal review interpreted the applicable laws weakly. In the end, the Old Man Review Panel recommended the dam be dismantled because its supposed benefits were not cost-efficient: its irrigation water would cost \$300 per acre, farmers were willing to pay only \$5 per acre.

Canada's ambassador to the U.S., speaking of Hydro-Quebec's James Bay Two project in a winter 1993 *Amicus Journal* article, said



"The governments of Canada and Quebec have declared that no decision will be made and no construction will begin until the reviews are completed." At about the same time, Canada entered the following court submission regarding the EM-1 Dam: "There is no authority of the government of Canada by which it would have a general fiduciary obligation to protect or promote the interest of natives when these are affected by other levels of government acting within their jurisdictions." In contrast to its public statements, Canada is privately doing its best to evade any responsibility.

The Cree looked at these and other statements, saw construction of LA-1 under way, saw the Almeda-Rafferty and Old Man River charade repeating itself, and decided to settle with Hydro-Quebec for the highest sum they could get.

Quebec's hostility toward natives may soon be directed at environmentalists as well. A document leaked from H-Q in February describes plans for a police force of 188-strong to tighten security against vandalism by Crees and environmental groups. Richard Lehir, president of Quebec Manufacturers Association, marched in step recently, stating, "It's only a bunch of ecofascists and ecoterrorists who are opposed to these projects."

Yet as Brian Creik of the Grand Council

of the Cree points out, "There has never been any vandalism against H-Q by Cree or environmentalists in Canada, and no claims have been filed by H-Q."

Canada is continuing its American propaganda campaign by sending David Cliche on a tour of Northeast states. According to Creik, "Cliche's job is to tell Americans that Canada's review process for these projects is thorough and strong, so Americans will believe they have no need to worry about the Cree. In reality, Cliche is a leader of Party Quebecois, which wants Quebec independence. His political agenda would be helped if these projects are carried out."

LA-1 is mostly built and EM-1 construction is to begin this spring. EM-1 may destroy an enormous sturgeon population. The fish cannot survive in reservoirs, and have disappeared where dams have already been built. The sturgeon's loss would add to a list of tragedies that includes the poisoning of waters with mercury, the flooding of 5000 square miles of wilderness, and the drowning of 10,000 migrating Caribou at the Caniapiscau River.

On maps, French-Canadians label this wilderness territory "Northern Quebec," but the Cree have always called it "Cree Land." On a cold day in the spring of 1993, deep in Cree Land, Edward Tapiatic will stand amidst Caribou tracks and flocks of migrating geese,

and watch Hydro-Quebec's reservoir take away his family's ancestral land forever.

WHAT YOU CAN DO:

A) New York and Vermont have energy contracts with Hydro-Quebec. Continue to oppose these contracts. Massachusetts is considering energy contracts. Write the governors of these states: Governor Cuomo (State Capitol, Albany, NY 12224); Governor Dean (109 State St., Montpelier, VT 05609); Governor Weld (Executive Office, Room 360, State House, Boston, MA 02133).

B) Scott Thiele is organizing a public boycott against Quebec, NY and VT (a tourism dependent state) utilizing the same tactics that worked against Alaska's recent plan to kill wolves. For information, or to help, call Scott at 717-278-1396 or 607-723-0110.

C) James Bay activities are continually changing, and the issues are extremely complex. For updates and clarification contact: PROTECT, Box 82, Campbell Hall, NY 10916; Vermont Coalition to Save James Bay, 21 Church St., Burlington, VT 05401.

Scott Thiele (RD #4 237-A, Elk Lake, Montrose, PA 18801) is a wilderness defender who works for James Bay and Pennsylvania forests in particular.

Mother's Grand Pacific Rim Forest: Pushed To The Limit

by Chant Thomas

Roots and branches intertwined in sylvan embrace, broken only by wider rivers rushing the Forest's salmonid offspring out to sea. From the pinon of the southern California mountains, the Forest reached an arm north along the Sierra with Giant Sequoia and towering Sugar Pines. Another arm stretched out along the coast, cloaked with the tallest, the Coast Redwoods. Arms spun unparalleled coniferous diversity, tying the Klamath knot around Yolla Bolly, Trinity, Marble, Siskiyou, and Kalmiopsis ranges. The Forest spun on up the coast, redwoods relieved by Western Red-cedar and spruce climaxing in the Olympics. Cascade Mountains carried the Forest farther north, clothing naked volcanoes until bare glacial ice edged her onto the Tongass beach.

Mother's Grand Pacific Rim Forest thrived, survived, for millions of years, until the white man arrived a moment ago. Quickly he tricked Forest's friend fire to feed wildly, and then banished fire from the Forest. He pillaged Forest's oldest, largest, wisest trees. Without friend fire, Forest grew too many young trees, crowding the last large trees toward death from thirst and hunger. As Forest began to die, white man began to realize, perhaps too late, that if Forest dies, so will we.

THE GATHERING

Themes of biodiversity and cooperation ran like rivers through a recent gathering of 400 forest activists in Ashland, Oregon. The second annual West Coast Ancient Forest Activist Conference focused on the crises in the forest ecosystems of the Pacific Northwest. Hosted by the grassroots group Headwaters, the Conference educated and motivated activists to prepare for a promise. During his campaign, President Clinton promised organized labor a Forest Summit. This summit would seek solutions to the biodiversity crisis affecting the forests, the fisheries, and the rural communities dependent on these resources in the Pacific Northwest.

The promised Forest Summit is both an opportunity and a challenge. After a dozen deadly years of accelerated forest destruction, the summit is a new opportunity to preserve the last remnants of Mother's Grand Forest, while restoring the fragmented forests and fisheries. Activists are challenged to cooperate with former adversaries to create solutions enabling communities dependent on forest resources to survive and thrive by restoring their local forest ecosystems.

In a historic departure from previous such events where the preachers addressed the choir, Headwaters invited some perceived adversaries to address the Conference. Labor leader Denny Scott of the United Brotherhood of Carpenters and Joiners journeyed across the continent from Washington, D.C., and suggested that environmentalists and labor work together in the summit process to preserve ancient forests and timber jobs. Tom Hiron, a logger whose Oregon Lands Coalition picketed last year's Conference, joined Dave Chisolm of the Pulp and Paperworkers Union and Linn County (Oregon) Commissioner David Schmidt on a Transitional Economics panel.

Meeting the challenge of cooperation was also the message delivered by Jennifer Belcher, the newly elected Washington State Commissioner of Public Lands. Ms. Belcher, who ran on a strong conservationist platform, instructed activists to remember private industrial lands in solutions to the forest crisis.



Siskiyou Corn Lily

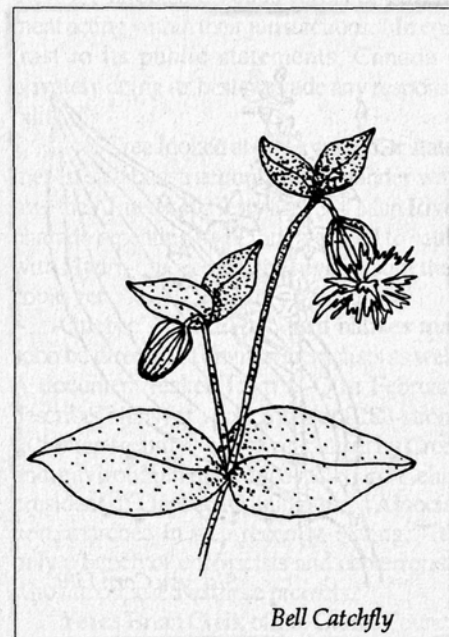
In addition to these speakers, other non-tritionals came, including a National Forest supervisor and a district ranger. Some long-time ancient forest activists were likely wondering what changes had occurred to prompt the timber industry, organized labor, and public agencies to address their Conference.

The Litigation Update and Outlook panel detailed those changes, as the attorneys described the court injunctions that have effectively halted logging of Spotted Owl habitat in westside federal forests of Washington, Oregon, and northern California. Federal agency failure to comply with environmental law has closed the faucet of free flowing timber in this region. Conservationists have, through their attorneys, forced industry, labor, and agencies to engage in a new dialog of cooperation.

Forest activists learned more about the forest ecosystem crisis in other panels, including: Fisheries and Watershed Restoration, The Role of Forestry in Restoring Ecosystems, Native American Restoration Ecology, and Crisis in the Siberian and Canadian Boreal Forests. The most popular workshop was Media Training. Experts in broadcast and print media gave tips and pointers on how to educate local reporters, how to conduct media interviews, and related topics.

Several issues raised at the Conference have not received enough serious consideration in the forest protection movement. Environmentalists in Oregon and Washington have been fixated on federal forests since passage of the Wilderness Act in 1964. It became obvious in Ashland that no regional forest solution will be reached without considering the private and state forestlands. Likewise, forests east of the Cascades and Sierra forests must be included in the summit proceedings.

Another issue raised was the rift between the largest environmental organizations ("the nationals") and the more local grassroots groups. They cooperated more at this year's conference than at previous gatherings. For instance, Headwaters, a grassroots group working in the southwest corner of Oregon, organized this West Coast Ancient Forest Activist Conference; while Americans for Ancient Forests, a national group based in DC, provided funding for the event.



Bell Catchfly

However, there were still comments about environmental leaders from metropolitan areas being out of touch with rural needs and concerns. Some national leaders were perceived as being of an "old school" mode, dispensing generalities in pep rally style speeches, instead of providing detailed information about how to integrate the grassroots into legislative processes.

Jennifer Belcher appealed to the gathered activists to "put our differences aside, unify our position, and have a

Past approaches to forest preservation, drawing lines around special places which are later compromised in the process, will no longer work.

common agenda... or we will lose at the Forest Summit."

Another vocally stated issue was the lack of women, Native Americans, and minorities at higher levels of the environmental movement, and specifically on the Conference panels, three of which were comprised entirely of "white guys." A women's caucus was held on Sunday morning. During the Summit Outlook panel, one woman spoke of sexism, using corporate timber's friend Senator Bob Packwood (R-OR) as the most currently outrageous example. Another woman spoke of the concept of using circles and caucuses to work for solutions on a community level.

In the closing circle, Dennis Martinez, a Native American with the Society for Ecological Restoration, noted that the Conference was opened with a prayer by Agnes "Tao-Why-Wee" Pilgrim, a local Takilma elder. Then he spoke eloquently of the need to more closely examine the ways American indigenous peoples interacted with their environment; an examination that promises many answers as we seek the on-the-ground prescriptions, the medicine to heal our thrashed ecosystems.

THE MEDICINE

Two panels at the Conference focused on the "medicine" needed to heal the stressed ecosystems of the Pacific Northwest. The medicine is restoration, and prescriptions were hot topics of discussion throughout the Conference. During the Fisheries and Watershed Restoration panel, it became clear that the once vast network of salmonid and trout habitat in our streams and rivers had declined to where isolated "hot spots" of high quality habitat have become crucial in maintaining fish populations.

The first prescription of restoration is to preserve all of these crucial habitat hot spots, referred to as "Riverine Biodiversity Management Areas" in a proposed Watershed and Salmon Habitat Restoration Act presented by Pacific Rivers Council. These areas are comprised of largely intact forested watersheds. However, most such areas are roaded, and these roads are prone to cause landslides down the slopes into the streams during the intense winter storms common to these steep Western mountains. After a decade of drought, an unusually large slide potential has accumulated. The most urgent restoration medicine to prescribe is stormproofing these critical watersheds by fixing or eliminating these roads.

The next steps of restoration are to identify, protect, and restore the less intact riparian habitat refugia. The process of restoration would flow from the most intact areas to the most degraded habitats. This strategy applies restoration prescriptions for the most immediate benefit and is a radical departure from past approaches of generic structural repairs

focused in the most degraded areas.

Success in riparian restoration depends on the health of the forests in the watersheds, which was the topic of the second restoration panel, The Role of Forestry in Restoring Ecosystems. In his opening remarks, panel facilitator Robert Brothers (Bobcat) clarified the concept of restoration with a quote from William R. Jordan III, a founder of the Society for Ecological Restoration: "Restoration is the deliberate attempt to compensate, in an ecologically precise and effective way, for human influence on a natural system."

In the case of Northwest forests, the human influence has been severe enough to threaten the integrity of the ecosystem. Bobcat referred to this influence as forestry's mistakes, and listed three prime examples: suppression of natural wildfires; establishment of single-species, even-aged tree farms; fragmentation and elimination of late seral/old-growth forests.

Suppression of wildfires has been widespread and pernicious. The natural frequency of wildfires in the Pacific Northwest is less than 50 years in all but the northern coastal and Cascade forests. Indeed in much of the region, the fire frequency is half that, especially in the drier forests of southern Oregon, northern California, and the eastside.

In areas of early white settlement, the 70 or so years of fire suppression were preceded by several decades with fires of greater than natural frequency and intensity, as ranchers and miners burned forests to increase livestock forage and mineral access. The result has been unnaturally crowded, even-aged young forest stands following catastrophic stand replacement fires or, more commonly, intact older forests with overstocked understories which are suffering mortality from disease and insects. In many forests, the biodiversity is threatened as shade tolerant species such as White Fir invade naturally open pine and Doug-fir stands. In both situations, the overstocked understories present a serious fire hazard, encouraging natural ground fires to climb the fuel ladder into the forest crowns. Single-species, even-aged tree farms are even more susceptible to insects, disease, and catastrophic fire, especially where necessary thinning have not been accomplished.

Related to these tree farms is the third of man's major mistakes, the fragmentation and elimination of late seral/old-growth forests. We do not know if what little old growth remains is sufficient for the survival of the Spotted Owl and other species dependent on late seral habitat.

In 1990 the Thomas Report described the optimal conservation strategy for the Northern Spotted Owl as preserving all habitat and growing more. The Report and a subsequent Headwaters proposal suggested thinning to

reduce the density of thick young stands and understories to increase prey habitat, facilitate owl flight for hunting, and accelerate development of late seral stand characteristics. Such thinning would also help fireproof late seral/old-growth stands by reducing the fire fuels in adjacent stands. Thinnings would occur on an experimental basis in the previous managed landscape outside of owl reserves.

Restoration forestry may be part of the solution strategy developed at the Forest Summit, as a prescription to enhance forest health and biodiversity, while providing some timber to assist dependent communities in transition.

THE FOREST SUMMIT

In her Conference address on the Forest Summit, Jennifer Belcher counseled activists, "We need to take to the table a greater understanding of the needs of the other participants...labor, families, and communities dependent on timber."

Past approaches to forest preservation, drawing lines around special places which are later compromised in the process, will no longer work. The Forest Summit is a whole new arena, calling for a new strategy. At this writing, strategies are being developed by grassroots and nationals alike, although structural and procedural details of the summit are not yet known. Fortunately, cooperation is evolving from communication developed at the Conference.

Conservationists could risk alienating other summit participants with a proposal focused on which forests to preserve. Another option would be to take Jennifer Belcher's advice and offer our help with the existing "suitable land base," where restoration forestry prescriptions for thinning could provide timber for dependent communities while restoring degraded forest ecosystems.

On private industry land in Washington, Oregon, and California, the existing suitable lands base is 9.8 million acres of our most timber-productive forests (Waddell, et al., 1989). When millions more acres of tree farms and young stands on public lands outside of old growth and roadless areas are also considered for restoration forestry, then there is obviously plenty of land to sustain rural communities in the future...but only if it is prudently managed for biodiversity.

As Dr. Jerry Franklin and others have pointed out, cut-over private and public lands cover most of our forest landscape. Because they contain large amounts of potential habitat, these lands are "the battleground where the war for biodiversity will ultimately be won or lost" (Franklin, et al., 1991). Restoring these lands can be the beginning of a new, bioregionally-based and sustainable lifestyle for rural communities.

The Forest Summit is an opportunity for people with diverse interests to work on a solution. An equitable solution to the forest biodiversity crisis in the Pacific Northwest would lay the groundwork for working on solutions to the myriad other environmental and societal problems we face.

Chant Thomas works for forests with Headwaters (POB 729, Ashland, OR 97520) and leads llama pack trips in the Siskiyou.

LITERATURE CITED:

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Waddell, Karen L., et al. 1989. "Forest Statistics of the United States 1987." USDA, PWN-RB-168, Sept. 1989.



Bollander's Butterweed

Genocide

By Any Other Name Is Still Genocide

Annihilation of BC Forests Without Permission of Aboriginal People Who Live In Them

by Susan Zwinger

I was inspired by *Wild Earth's* superb article in the fall 92 issue ("Backlash Against the Endangered Species Act") comparing annihilation of species to Hitler's "final solution." However, we don't have to stick to species other than our own to validate the comparison, nor do we have to leave the North American Continent. The ancient forests of British Columbia, ancestral homelands of many Native Nations, are being destroyed without their permission. I have personally seen this situation twice: once with the Xenii Band of the Chilcotin in interior BC, who placed their bodies in front of road-building equipment at the border of their ancestral land, and in the Mid-Coast rainforest, with the Heiltsuk Nation.

This annihilation of the Canadian forests has long been going on with very weak, or no laws at all protecting the citizens. Canadians have no laws such as the Endangered Species Act, and their Forest Protection Act was written by the industry. Only 2% of BC is protected as Wilderness, versus 10% in my state of Washington. Acreage-wise, BC is huge, but they are cutting even faster than Brazil was before international pressure was brought to bear. Some of the largest trees on Earth are found in BC: the largest Western Redcedar, which lives on Vancouver Island, is 62' around.

For breathing, we need temperate rainforest from Alaska to Chile. In Canada we have not documented what is left: the government does not want to know, and BC is too vast for a few private citizens to map.

Nevertheless, we tried. In August 1992, six of us, five Canadians and one American, headed north to study the Mid-Coast of BC. The bottom third of the mainland coast and Vancouver Island have already been clearcut so extensively that few intact watersheds remain. Mid-Coast stretches from Cape Caution, opposite the north end of Vancouver Island, north to Prince Rupert. Within it are thousands of kilometers of rocky fjord coastline and thousands of unnamed islands.

Of the fifty primary watersheds over 5000 hectares (a hectare is 2.47 acres), only six are left uncut. These last pristine drainages are to be roaded and cut, four of them within the next few years. All Crown Forest Lands—all of the coast and deep into the province, including all Native bands' homelands—are checkered with tree licenses for Interfor, Floetcher-Challenge (New Zealand), Weldwood (Japanese) and MacMillan Bloedel. Provincial citizens are paying for their forests to be shipped to other countries as the government subsidizes the industry. The Free Trade Agreement will make matters worse.

KILLING OFF NATIVES

Among the greatest tragedies is the slow genocide of entire Native Nations. Native bands who have lived on this land since the Ice Age, perhaps before, whose genetic codes and dreams are deeply intertwined with the forest and the sea and the animals, are utterly dependent on intact ecosystems. Their knowledge of how to use and sustain resources is so valuable, we cannot afford to lose it. The destruction of a culture's natural resources is just as effective as war or gas ovens, only slower.

Canadians have no National Environmental Policy Act through which they might at least slow the destruction. The BC Forest Service is not even bound to inform people of clearcutting plans until the last moment. The Service operates in secret, allowing the timber company to encroach rapidly. The company does its homework well: they call Native elders to glean tribal information about the location of the best and oldest trees. Typically, after plans are cast in cement, a Forest Service representative will show up unannounced and hold a briefing in the basement of some church: a sham of "community involvement."

By this time, roading may have already begun; clearcuts appear soon after, spreading until the habitat of the lower watershed, the cheapest to cut, is ruined. As has already happened all over Vancouver Island, people are forced to take industry jobs or move out. Alcohol and family turmoil often complete the elimination of a unique human culture.

LOSS OF ENTIRE ECOSYSTEMS

The forest practices we observed are criminal on a global scale. The BC Forest Protection Act was written by the timber industry, and even its weak guidelines are not enforced. The timber companies cut right down to the water on steep unstable slopes. Thin, acidic, non-nutritive soils cannot generate new forests easily. The government subsidizes an army of young people to replant trees. According to the tree planters themselves, they are often forced to plant in steep washes and rocky places where they know their young clients will not survive.

The Forest Service licenses "gyppos," small reckless operators, to cut in pristine wild areas, thus lowering the areas' rating to "modified" and opening the way for clearcuts by huge companies. If the gyppos don't clearcut, they high grade, cutting the largest, finest trees and removing the finest genes from the gene pool. No biological study

EARTHACTION Update

Clayoquot (pronounced *Klak-what*) Sound, a spectacular mosaic of islands, inlets and mountains, is next in line to be cut. Multinational companies are putting severe pressure on the BC government to allow cutting and 90% of Clayoquot Sound is scheduled to be logged.

The recently elected government of BC has established a Commission on Resources and Environment (CORE) in order to regulate logging. CORE includes representatives from various groups: fishing people, loggers, indigenous people, government officials, and environmentalists. There is hope in CORE for BC, but it is still in a preliminary stage. Unfortunately, Mike Harcourt, the Premier of BC, is planning to decide the fate of Clayoquot Sound within the next couple months. Thus, this decision will not be influenced by CORE, but will be by international corporations.

Clayoquot Sound is one of the last remaining intact temperate rainforests. EARTHACTION (30 Cottage St., Amherst, MA 01002), which is working internationally to stop logging of primary forests, urges readers to send Premier Michael Harcourt a letter immediately (address below). Ask that he: 1) immediately stop all logging in Clayoquot Sound, 2) ensure that Clayoquot included in CORE's agenda, 3) lead CORE toward banning logging of old-growth forests in BC.

—KHF

is made beforehand.

Citizens have repeatedly demanded that government scientists study these last intact temperate forests, but the province shows no interest. The ignorance of their citizens is their greatest tool.

In BC, the timber companies build the roads, laying free claim to the trees in the way. Thus, they build roads abundantly, and extra wide. Once the roads are in place, miners, hunters, and poachers may enter. Wildlife officials estimate that for every animal killed legally, one is killed illegally. Grizzlies are shot or baited for their gall bladder alone. Many men in China and Japan still consider gall bladder an aphrodisiac.

THE SCHOOL OF DEFORESTATION

As an American natural history author, I found abundant scientific papers in Alaska on everything from Brown Bears to tundra lichen. The University of Alaska gladly lent me the most obscure papers on all topics. In Canada, I kept asking questions for which no research had been done: basic questions, such as how much territory does a Mid-Coast Brown Bear need to survive? How many Brown Bears live in BC? How does clearcutting affect the marine ecosystem?

Although the University of BC has a School of Forestry, it can do no non-timber harvest research. The school is supported by the industry.

HERITAGE CONSERVATION BRANCH OF BC GOVERNMENT

I have recently increased my phone bill exponentially trying to find the correct person to speak with in the Heritage Conservation Branch concerning the Heiltsuk Nation's ancestral territory. The center of their creation myths, the Ellerslie Fjord system, is about to be

clearcut, even though the Forest Service told them otherwise. I discovered that, according to the Heritage Conservation Act, only the actual rock wall with the pictograph is protected. The forest all around is to be clearcut.

One of the most gorgeous, wild valleys in all of Canada, the Stein, near Lytton BC, which has the greatest rock art in all of Canada, is up for grabs. After ten years of Natives' and environmentalists' hard work, several books and broadcast publicity on this magnificent site, the Provincial government will soon decide the fate of Stein.

THE INTERNATIONAL FLOW

The immense wealth from Canada's raw resources flows internationally through clandestine channels, not unlike those used by the players in the Iran/Contra affair. Being uninformed, citizens are unable to make intelligent decisions about their future. Individual Canadians who have attempted to follow logs from source to destination are blocked in doing so. Worse, Canadians have been brainwashed to believe their entire economy depends on logging. The truth is that the multinational companies bring in carpetbaggers, use no local business, and hire very few locals. The truth is that their second largest industry, tourism, is sustainable; their "forestry" is not.

When the Canadian federal government is challenged over their forest practices, they react as the Brazilian federates once did: "We can't control those outlying provincial guys." International pressure causing global embarrassment is our only recourse to slow the devastation of the last great temperate rainforest of North America.

As I write, the Xeni of the Chilcotin Nation watch bravely at the Davis River Bridge for more logging truck brigades. Timber industry, having destroyed the Stone Reserve to the east, would move in quickly if a three-month warning agreement did not block them from the sacred ancestral land around Chilco Lake.

The world once took up arms against the Hitler regime's genocide. Why do we not do so now for our original North American nations?

Susan Zwinger (POB 71025, Seattle, WA 98107) is a Nature writer whose works include Stalking the Ice Dragon.

WHAT YOU CAN DO

Write to:

Mr. Steven Owens
Commission on Resource and
the Environment
7th Floor, 1802 Douglas St.
Victoria, BC V8 V1X4
CANADA

Honorable Dan Miller
Minister of Forests
Parliament Buildings
Victoria, BC V8V 1X4

Premier Michael Harcourt
Parliament Buildings
Victoria, BC VV 1X4
Phone: 1 604 387-1715
Fax: 1 604 387-0087

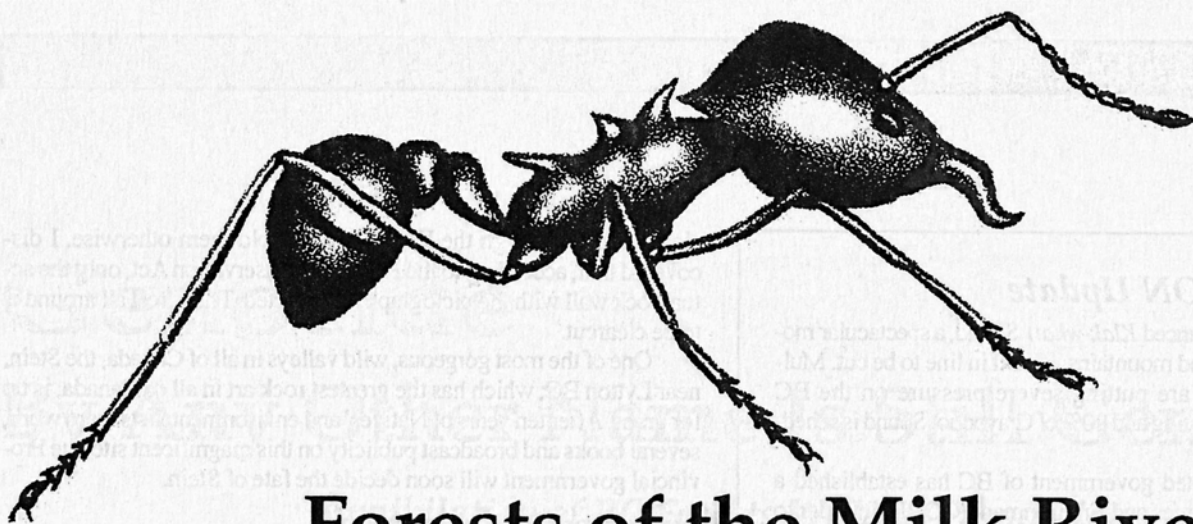
Vancouver Sun
2250 Granville Street
Vancouver, BC V6H 3G2 CANADA

Request:

1. A ban on cutting old-growth forests;
2. A transition economy to help forest industry workers;
3. Legislation protecting biodiversity.

Editors of: *Times Colonist*
2621 Douglas Street
Victoria, BC V8W 2N4





Forests of the Milk River, part 1

Some Thoughts and Details on Biodiversity

by Wade Davis

Imagine a colony of three to four million ants, dwelling underground in thousands of chambers, cultivating in the darkness a mushroom found nowhere else in nature.

The capacity to forget, the fluidity of memory, is a frightening human trait. Several years ago I spent many months in Haiti, a country that as recently as the 1920s was 80% forested. Today less than 5% of the forest cover remains. I remember standing with a vodoun priest on a barren ridge, peering across a wasteland, a desolate valley of scrub and half-hearted trees. He waxed eloquent as if words alone might have squeezed beauty from that wretched sight. He could only think of angels, I of locusts. It was amazing. Though witness to an ecological holocaust that within this century had devastated his entire country, this man had managed to endure without losing his human dignity. Faced with nothing, he adorned his life with his imagination. This was inspiring but also terrifying. People appear to be able to tolerate and adapt to almost any degree of environmental degradation.

If Haiti offers a disturbing image of what may happen to the Earth, the tropical rainforests represent the last best hope for the planet. Joseph Conrad wrote that the jungle was less a forest than a primeval mob, a remnant of an ancient era when vegetation rioted and consumed the earth. He referred to a time still known to our fathers, a time when the tropical rainforests of the Earth stood immense, inviolable, a mantle of green stretching across entire continents. Today, in many parts of the tropics the clouds are of smoke, the scents are of grease and lube oil, and the sounds one hears are of machinery, the buzz of chainsaws and the cacophony of enormous earthmovers. It is a violent overture, like the opening notes of an opera about war, a war between human and the land, a wrenching terminal struggle to make the latter conform to the whims and designs of the former. The residue of war now colours the landscape of Borneo and Sumatra, Zaire and Madagascar, Costa Rica, Gabon, Indonesia and a hundred other lands once covered in forest. The conflict has even spread into the heart of the Amazon.

Even for those of us from Canada, a country where landscape sweeps over the imagination and defines the essence of the national soul, it is difficult to grasp the size of the Amazon. A marvelous tale is told of the travels of Francisco Orellana, the first European to traverse the length of the Amazon. In 1541, having crossed the Andes in search of the mythical land of El Dorado, Gonzalo Pizarro dispatched Orellana on a desperate search for food. Orellana sailed down the Rio Napo, a swift river in eastern Ecuador, and it is said that when he finally reached the confluence of the Rio Ucayali, as the upper Amazon is known in Peru, he went temporarily insane. Coming as he did from the parched landscape of Spain, he could not conceive that a river on God's earth could be so enormous. Little did he know what awaited him two thousand miles downstream where the river becomes a sea and the riverbanks lie a hundred miles apart.

This story, apocryphal or not, tells of the central dilemma that confronts all travelers on their first visit to the Amazon. It is the issue of scale and the impossibility of imagining rainforests of such magnitude. In the Amazon are three million square miles of forested lands still wet with the innocence of birth, a vast expanse of biological wealth the size of the continental

USA, and somewhat larger than the face of a full moon. The river itself is over 4200 miles long, just longer than the Nile and far more extensive, spread across five Latin American nations. Within the Amazon drainage are twenty rivers larger than the Rhine and eleven of these flow more than a thousand miles without a single rapid. The river delta is enormous. If the mouth of the Amazon could be superimposed onto Europe, the Eiffel Tower would sit on the south bank and the north bank would support the Tower of London. Among the hundreds of islands in the delta is one named Marajo which is larger than Switzerland. Sedimentary deposits at the mouth are 12,000 feet deep and freshwater may be drunk from the sea 150 miles beyond the shore. Tidal influences reach as far up the river as Obidos, a small city located just below the mouth of the Rio Trombetas, 250 miles from the apex of the Amazon delta and 450 miles from the sea.

The Amazon did not always flow into the Atlantic. Two hundred and fifty million years ago the South American continent was still attached to Africa, and the predecessor of the Amazon flowed west, draining an arc of massive highlands, the remnants of which are now known as the Brazilian and Guiana Shields. The river reached the Pacific Ocean somewhere along the shore of contemporary Ecuador. A hundred million years later the two southern continents split apart. Four million years ago the birth of the Andean Cordillera effectively dammed the river, creating a vast inland sea which covered much of what is now the Amazon basin. In time, these waters worked their way through the older formations to the east, and formed the modern channel of the Amazon.

The Rio Negro and the Rio Solimões, the two main branches that form the Amazon proper at Manaus, Brazil, are a legacy of these staggering geological events. The Rio Negro drains the northern half of the Amazon basin, rising in the ancient soils of the Guiana Shield, and its dark colour is due to a high concentration of humic matter, very little silt load and a tannin content equal to that of a well brewed cup of tea. The Solimões and its effluents, by contrast, are born in ten thousand precipitous mountain valleys of the high Andes. Rich in sediments, these are the fabled milk rivers of Indian mythology, the source of rich nutrients that each year replenish the floodplain of the lower Amazon.

Rainfall in the Andes and water cut loose from the ice of thousands of Cordilleran glaciers drives the entire system. Remarkably, the Amazon River falls 14,000 feet in its first 600 miles, but only 240 feet over the last 2600 miles—less than one inch per mile. If the Washington Monument stood at the mouth in Belem, its tip would be higher than any building in Iquitos, Peru, a sizeable city 2000 miles upriver. The Amazon doesn't flow to the sea; it is pushed by the annual runoff from the Andean Cordillera.

Water, white or black, forms the dominant motif in the lives of all sentient creatures in the Amazon. In volume the river is five times larger than the Zaire, eleven times larger than the Mississippi. The Zaire is the second largest river on Earth, but within the Amazon system are two tributaries, the Madeira and Negro, that are each larger. The Amazon contains 20% of the world's fresh water. In one day the Amazon pumps as much fresh water into the Atlantic as the Thames does in an entire year. If the U.S. Army Corps of Engineers could figure out a way to drain Lake Ontario and divert the channel of the Amazon, and no doubt they have such a plan, the lake could be refilled in three hours.

Beyond the borders of the seasonally replenished floodplain, which comprises a mere 3 % of the land, beyond the reach of the milk rivers,

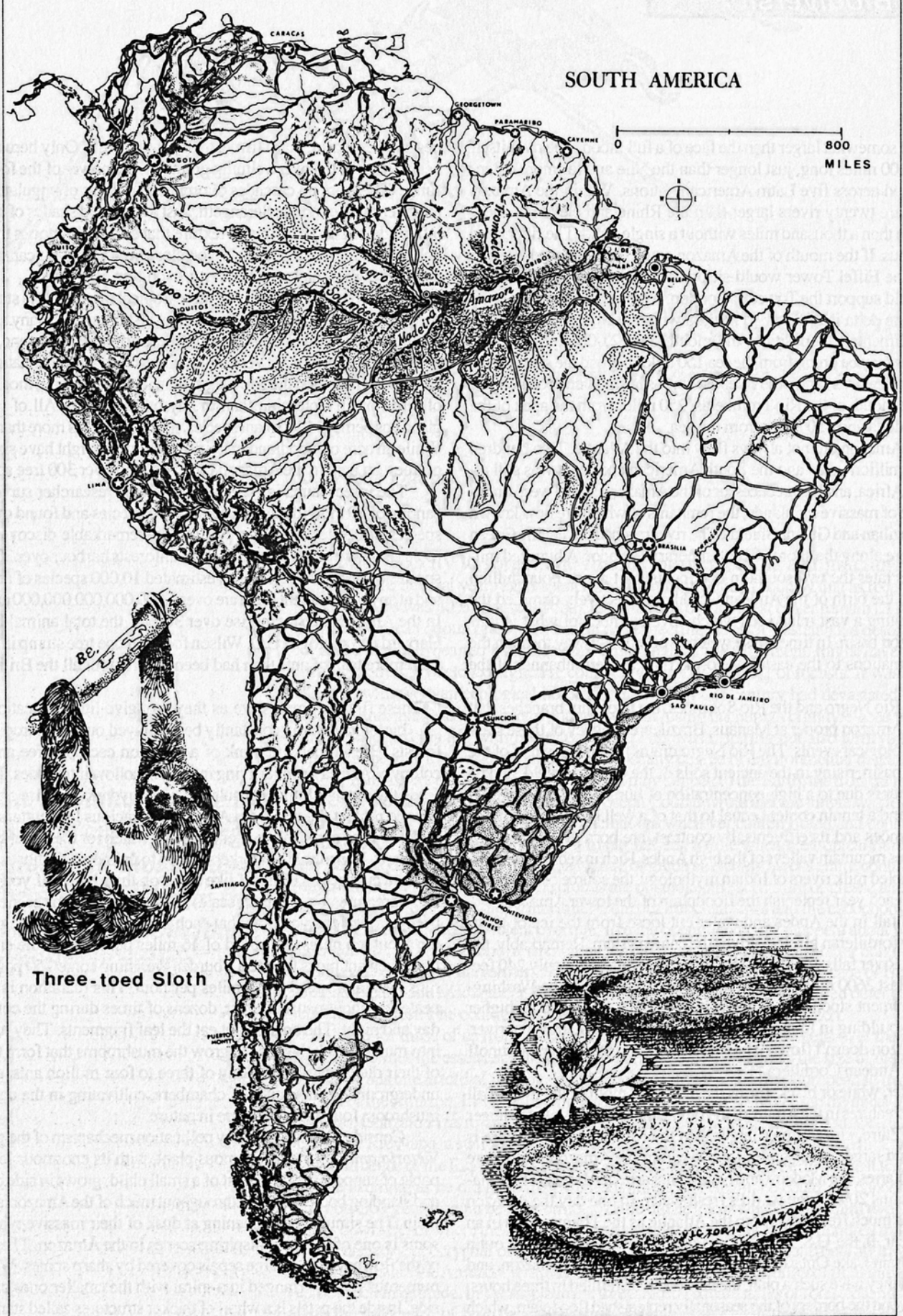
lies another world, tierra firme, the upland forests. Only here does one begin to sense the overwhelming grandeur, the power of the forest. It is subtle. There are no cascades of orchids, no herds of ungulates as one might encounter on the Serengeti. Just a thousand shades of green, an infinitude of shape, form and texture that so clearly mocks the terminology of temperate botany. If you close your eyes you can sense the constant hum of biological activity, evolution, if you will.

The biological diversity of these tropical rainforests is staggering. A square mile of Amazonian forest may be home to as many as 23,000 distinct forms of life. Brazil harbours more primate species and, in sheer numbers, more terrestrial vertebrate animals than any other nation. More species of fish are in the Rio Negro than in all of Europe; more species of birds are in Colombia than in any other country. All of New England has perhaps 1200 plant species, the Amazon has more than 80,000. While an acre of woodland in British Columbia might have six species of trees, an acre in the Amazon could contain over 300 tree species.

The insect fauna is especially rich. One researcher surveyed the canopy of 19 individuals of a certain tree species and found over 1200 species of beetles. Based in part on this remarkable discovery, entomologists now believe that tropical rainforests harbour over 30 million species of insects. There are an estimated 10,000 species of ants alone and at any one moment there are over 1,000,000,000,000,000 ants alive. In the Amazon ants comprise over 30% of the total animal biomass. Harvard entomologist E.O. Wilson found in one tree stump in lowland Peru more taxa of ants than had been reported for all the British Isles.

These figures, impressive as they are, give little indication of the biological drama constantly being played out in the tropical rainforests. Break open the trunk of a common cecropia tree and find a colony of Azteca fire ants living inside the hollow internodes. The plant feeds the ants with tiny capsules of carbohydrate; the fire ants in exchange protect the tree from Atta ants, voracious leaf cutters capable of defoliating a tree in a matter of hours. Watch for these leaf cutters in the forest. Long trails of workers scurry to unknown destinations, each toting a cut section of a leaf like a sail on their backs. If you imagine these creatures on a human scale, such that their quarter-inch length becomes six feet, you note that each foraging ant runs along the trail for about ten miles at a speed of 16 miles per hour. At the end of the trail, each ant picks up a leafy burden weighing some 750 pounds and runs back at a speed of 15 miles per hour. This marathon is then repeated, without pause for rest, dozens of times during the course of a day and night. The ants do not eat the leaf fragments. They turn them into mulch which they use to grow the mushrooms that form the basis of their diet. Imagine a colony of three to four million ants, dwelling underground in thousands of chambers, cultivating in the darkness a mushroom found nowhere else in nature.

Consider the extraordinary pollination mechanism of the giant lily, *Victoria amazonica*. This famous plant, with its enormous leaves capable of supporting the weight of a small child, grows in side channels and standing bodies of water throughout much of the Amazonian floodplain. The simultaneous opening at dusk of their massive white blossoms is one of the most inspiring scenes in the Amazon. The exterior of the flower has four large sepals covered by sharp spines. Within are numerous petals, arranged in a spiral with the smaller ones on the inside. Inside the petals is a whorl of thicker structures called staminodes. Next are the 300 stamens which carry the pollen. Inside the stamens is



map by Brian Evans

yet another whorl of floral parts that together with the other structures form what amounts to a tunnel leading to a large cavity at the base of which is the carpel, a female part of the flower. Lining the carpel is a ring of appendages that are full of starch and sugar.

When the flower buds are ready to open, they rise above the surface of the water and precisely at sunset, triggered by the falling light, the flower opens with a speed that can be seen with the naked eye. The brilliant white petals stand erect and the flower's fragrance, which has been growing in strength since early afternoon, reaches its peak of intensity. At the same time, the metabolic processes that generate the odor raise the temperature of the central cavity of the blossom by precisely 11 degrees centigrade above the outside temperature. The combination of colour, scent, and heat attracts a swarm of beetles which converge on the center of the flower. As night falls and temperatures cool, the flower begins to close, trapping the beetles with a single night's supply of food in the starchy appendages of the carpel. By two in the morning the flower temperature has dropped, and the petals begin to turn pink. By dawn the flowers are completely closed, and they remain so for most of the day. In early afternoon the outer sepals and petals open. By now a deep shade of reddish purple, they warn other beetles to stay away. Last night's beetles, meanwhile, remain trapped in the inner cavity of the blossom. Then, just before dusk, the male anthers of the flower release pollen and the beetles, sticky with the juice of the flower and once again hungry, are finally allowed to go. In their haste to find yet another opening bloom with its generous offering of food, the beetles dash by the anthers, becoming covered with pollen which they then carry to the stigma of another flower, thus pollinating the ovaries.

This sophisticated pollination mechanism is, in its complexity, not unusual for the plants of the Amazon. Indeed, a botanist would be hard pressed to invent a strategy of pollination or seed dispersal that some species had not already come up with. There are fruits eaten by fish, seeds that float in the wind, succulent fruits destined for birds and primates, tough woody fruits for the massive rodents, fruits that explode, fruits carried by bats, seeds that swim, and even seeds small enough to be dispersed by ants.

Perhaps the best symbol of the Amazon rainforest is the three toed sloth, a gentle herbivore that dwells in the canopy of the forest. It moves literally at a snail's pace and this together with its cryptic colouration protects it from its only major predator, the harpy eagle. Viewed up close, the sloth appears as an hallucination, an ecosystem unto itself that softly vibrates with hundreds of exoparasites. The sloth's mottled appearance is due in part to a blue-green algae that lives symbiotically within its hollow hairs. A dozen varieties of arthropods burrow beneath its fur; a ten pound sloth may be home to over a thousand beetles.

The life cycles of these insects are completely tied to the daily rounds of the sloth. With its excruciatingly slow metabolism, the sloth only defecates once a week. When the sloth needs to defecate, it climbs down from the canopy, excavates a small depression at the foot of the tree, voids its feces and then climbs back up. Mites, beetles, and even a species of moth leap off the sloth, deposit an egg in the dung, and climb back on their host for a ride back up the tree. The eggs germinate and the young insects find another sloth to call home.

Why does this animal go down to the base of the tree, expose itself to all forms of terrestrial predation, when it could just as easily

defecate from the treetops? The answer provides a clue to the immense complexity and subtlety of this ecosystem. In depositing the feces at the base, the sloth enhances the nutrient regime of the host tree. That such a small amount of nitrogenous material might actually make a difference suggests that this cornucopia of life is far more fragile than it appears. In fact, many ecologists have called the tropical forest a counterfeit paradise. The problem is soil. In many areas, there is essentially none.

Forests have two major strategies for preserving the nutrient load of the ecosystem. In the temperate zone, with the periodicity of the seasons and the resultant accumulation of rich organic debris, the biological wealth is in the soil itself. A tropical ecosystem is completely different. With constant high humidity and annual temperatures hovering around 80°F, bacteria and other microorganisms break down plant matter almost as soon as the leaves hit the forest floor. Ninety percent of the root tips in a tropical forest may be found in the top 10 cm. of earth. Vital nutrients are immediately recycled into the vegetation. The biological wealth of this ecosystem is the living forest itself, an exceedingly complex mosaic of thousands of interacting and interdependent living organisms. It is a castle of immense biological sophistication built quite literally on a foundation of sand.

Removing this canopy sets in motion a chain reaction of biological destruction. Temperatures increase dramatically, relative humidity falls, rates of evapotranspiration drop precipitously, and the mycorrhizal mats that interlace the roots of forest trees, enhancing their ability to absorb nutrients, dry up and die. With the cushion of vegetation gone, torrential rains create erosion which leads to further loss of nutrients and chemical changes in the soil itself. In certain deforested areas of the Amazon the precipitation of iron oxides in leached exposed soils has resulted in miles upon miles of lateritic clays, a rock hard pavement of red earth from which not a weed will grow.

What percentage of the Amazon has suffered deforestation is a matter of debate. Estimates range from 2% to 25%. Experts agree, however, that the rate of deforestation has accelerated dramatically during the last decade. Every minute 50 acres are cut. Each day 75,000 acres disappear. Each year 76,000 square kilometers, a stretch of virgin rainforest three times the size of Belgium, is destroyed.

The effects of this deforestation will be felt continentally and globally. Since fully half of the precipitation in the Amazon is generated from evapotranspiration, we can expect rainfall in the basin to be reduced by as much as 50%. Worldwide, clearing operations that burn the remnants of tropical forests put 52 trillion kilograms of carbon dioxide into the air each year, an amount roughly equal to 40% of all industrial emissions. The result is the greenhouse effect, a warming of the Earth's atmosphere which, even by the most conservative estimates, promises unprecedented climate change and a rise of sea levels by as much as two meters, enough to inundate some entire countries.

The destruction of the Earth's tropical rainforests is resulting in massive loss of biological diversity. Although extinction is a global problem, tropical rainforests are particularly susceptible as species tend to occur in low densities with restricted ranges. The impact in certain regions of the Earth has already been devastating. In Madagascar, for example, 90% of the species are endemic yet only 7% of the forest remains undisturbed. The Atlantic forests of Brazil, another center of high endemism, have been reduced to less than 2% of their original extent. Human activity is not only impacting individual species, but



changing the actual conditions of life itself. Acid rain, global warming, the depletion of the ozone, the accumulation of synthetic compounds in the environment—these are changes in the actual chemistry of the biosphere.

The elimination of life, of course, is nothing new in the history of the Earth. Mass extinctions marked the end of the Permian, Triassic and Cretaceous, and other crises occurred in the Late Devonian and at the end of the Eocene. Shortly after the arrival of humans in South America 15,000 years ago, 45 of 120 genera of large mammals became extinct. In general, however, over the last 600 million years speciation has outpaced extinction and the diversity of life has steadily increased.

What has changed in a disturbing way in the last fifty years is the rate of disappearance. Species extinction when compensated by speciation is a normal phenomenon. Massive abrupt species extinctions and the consequent biological impoverishment are not normal. The current wave of extinction is unprecedented in the last 60 million years, both in abruptness and probably in the total number of species that will be lost. During the extinction of the dinosaurs, for example, an extinction occurred roughly every 1000 years. Between 1600 and 1900 perhaps 75 species were driven extinct due to the activities of humans. Since 1960, within our lifetimes, extinction has claimed, at a conservative estimate, upwards of 1000 species per year. E.O. Wilson believes that during the last 25 years of this century one million species may disappear. That figure represents a loss of a species every 13 minutes, 110 each day, 40,000 a year.

Does this loss of biodiversity matter? Biologists may scoff at this question but providing an answer that makes sense to both the public and policy makers is, in fact, one of our most critical challenges. For many people, it is difficult to believe that the value of a single species is worth more than a particular development. Stanford biologist Paul

Ehrlich explains the ecological significance of species diversity with a metaphor. Imagine, he writes, that as you are entering an airplane you notice a workman popping out rivets. The workman explains that the rivets can be sold for \$2 and thus subsidize cheaper airfares. When questioned about the wisdom of the procedure, he responds that it has to be safe, as no wings have fallen off despite many rounds of de riveting. This, in effect, is what we are doing to the biosphere through the erosion of biodiversity.

In Part 2 I will present an economic argument for diversity based on the insights gained through ethnobotany. But there is an important point to be made first. The value of a species, as Tom Lovejoy of the Smithsonian Institution has pointed out, is not simply that it may one day yield a pharmaceutical drug.

Consider the potential of every form of life. A single bacterium, E.O. Wilson reminds us, possesses about 10 million bits of genetic information, a fungus one billion, an insect from one to ten billion depending on the species. If the information in just one ant were translated into a code of English letters and printed in letters of standard size, the string of letters would stretch a thousand miles. One handful of earth contains information that would just about fill all 15 editions of the *Encyclopedia Britannica*. This is the true resonance of nature. Each incident of extinction represents far more than the disappearance of a form of life; it is the wanton loss of an evolutionary possibility.

Wade Davis holds degrees in anthropology and biology and received his Ph.D in ethnobotany from Harvard University. He has worked in the field as a plant explorer and ethnobotanist, investigating fifteen tribal groups in Latin America. Recent work has taken him to Morocco, Borneo, Irian Jaya, Venezuela, and northwest Canada. Part 2 of this essay is slated for the summer 1993 issue of Wild Earth.

Partners in Flight

Report From the Field

by Rick Bonney

September 22, 1992—Trail Ridge Road,
Rocky Mountain National Park.

Protected from the wind by my rented car, gazing through the glass at the snowy peaks beyond, I'm amazed once again at how anything can look the same after so many seasons. Nearly 20 years have passed since I last drove this road, en route from the grocery in Estes Park to my cabin in the Kawuneeche Valley, but the patterns of the mountains are etched in my cortex. I can see Longs Peak to my left, Mt. Ida before me, and way over to the right, the Never Summer Range—just where I left it.

Appearances, though, can be deceiving. The mountains look the same, all right. But what about the birds that live among them? Were I to hike back to my study site in the Kawuneeche Beaver meadow, would Yellowthroats still fill the willows? Would Western Wood Peewees still call from the aspens? Would Yellow Warblers still vie for territories along the Colorado River?

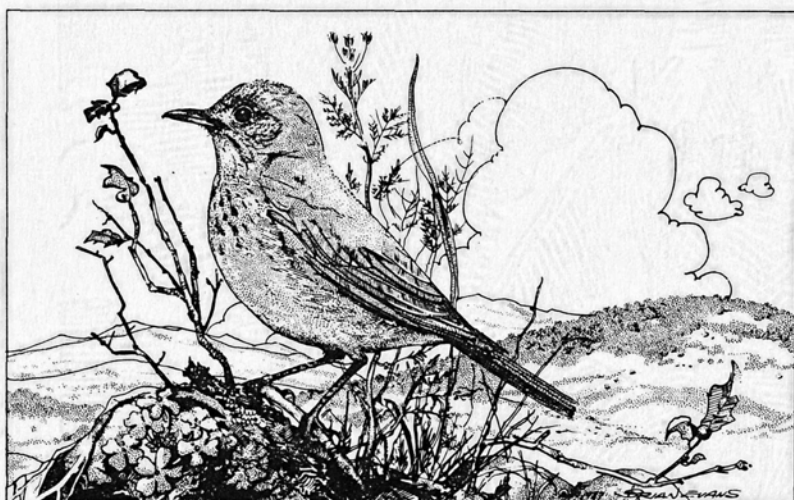
In so many other places I've gone back to see, the answer would be no. The Wood Thrushes have disappeared from the yard where I grew up in New Jersey, even though it still looks the same. Spring migration counts are down in the Berkshire sanctuary where I worked in the early 80s, though it looks the same too. And even my rural backyard in upstate New York, which hasn't changed perceptibly in the past ten years, is falling quieter each spring.

Maybe here in the Rocky Mountains the birds are holding their own. Unfortunately I won't find out, at least not today. One more glance at the majestic landscape and it's back toward Estes Park, back to the conference that brought me to Colorado on this gorgeous fall week. Back to a gathering of nearly 600 biologists, ornithologists, and land managers who share my concern for the status of neotropical migratory birds (NTMBs) in North America.

That's right, 600. Nearly 600 folks have turned out for this third annual meeting of the neotropical migratory bird program, Partners in Flight. Nearly 600 folks representing an incredible array of federal agencies: the U.S. Forest Service, the U.S. Fish and Wildlife Service, the Bureau of Land Management, and the Department of Defense, among many others. State wildlife departments, over 30 in attendance. And non-governmental organizations: The Nature Conservancy, National Audubon Society, and the Cornell Lab of Ornithology, among hordes of others. It's amazing: after all these years of us "non-consumptive users" pleading for efforts to manage non-game species, nearly 600 people have shown up to talk about songbirds.

For those who missed my earlier article ("Death of the Dawn?", *Wild Earth*, Spring, 1992), Partners in Flight—Aves de las Americas is a huge, cooperative effort to maintain populations of forest and grassland NTMBs in the Americas. Its tools are habitat protection, management, professional training, and public education. Its players are biologists and conservationists from dozens of federal and

It's amazing: after all these years of us "non-consumptive users" pleading for efforts to manage non-game species, nearly 600 people have shown up to talk about songbirds.



Veery (*Catharus fuscescens*) by Brian Evans

state agencies and organizations who are concerned about the decline of NTMBs as evidenced by bird surveys, especially the Breeding Bird Survey coordinated each spring by the Fish and Wildlife Service. And lest NTMBs sound obscure, like sticklebacks or pupfish, let me quickly explain that they are simply birds that breed in North America and winter in Central and South America and the Caribbean—about 330 species of familiar birds such as warblers, thrushes, vireos, and tanagers.

Now, after I published that last article, in which I praised the government agencies for engaging in proactive conservation—that is, working to save species before they become endangered—I was criticized for trusting the agencies to carry out this program in good order. Buck Young, for one, wrote thus: “Most federally sponsored wildlife research projects yield outstanding research, well-phrased rhetorical guidelines, and flaccid management prescriptions. There will be just enough More-Research-Is-Needed’s in their conclusions to drive a few well-loaded skidders through.”

Buck’s point is well-taken, so as I head into the auditorium for three days of papers and talks, I wonder what I’m about to hear. This whole conference has been billed as a workshop in which knowledge of neotropical migrants and their habitats will be synthesized and transferred for management applications.

Curtain: First we hear from Tom Dwyer of the Fish and Wildlife Service, filling in for John Rogers, chairman of the Partners in Flight Interagency Committee. Tom states that Partners in Flight is one of the most impressive partnership efforts ever undertaken in the conservation of natural resources. That is surely correct; never before have 14 government agencies, nearly every state agency, and more than two dozen NGOs signed on to one program.

Next we hear from Stan Senner of the National Audubon Society and chairman of the NGO committee, who mentions that in 20 years of working in migratory bird conservation, he has never seen a higher level of [bird conservation] activity in government and among NGOs than since this program was launched.

Then the talks begin. “Population Trends and Management Opportunities for Neotropical Migrants.”* “Biological Diversity, Ecological Integrity, and Neotropical Migrants: New Perspectives for Wildlife Management.” “Partners in Flight Prioritization Scheme...” And so on. Like all conferences this one soon becomes mind-numbing; droning talks, bad slides, noisy hallways, and cold coffee.

There is a difference in this gathering, however. Unlike any other wildlife

management conference I’ve ever attended, I feel enthusiasm and optimism. These folks are here because they want to be and because they want to do something for birds. Furthermore they are interested in wholistic ecosystem management: migratory bird conservation is important, they feel, but it’s part of a much bigger picture. NTMB considerations can help ensure the health of entire ecosystems, rather than just deer and grouse. At the breakout sessions, I hear people talking about a new era in wildlife management. And I can tell they’re sincere.

Of course change won’t happen overnight. Although this workshop was a great start, it was conspicuously lacking in success stories about NTMB management. We heard lots of “more research is needed.” Most of the land managers did not go home with new management prescriptions, but many did find a new way to look at their jobs. Remember, to integrate considerations of songbirds or any nongame species into American wildlife management we must struggle against decades of inertia, while coordinating thousands of people in the effort. Partners in Flight working groups meet just twice a year, and most of the agency personnel, both state and federal, must lever NTMB work into the rest of their schedules. Changing a century’s practices of wildlife management is like trying to steer an ocean liner.

Still, I think optimism is in order. I do sense that a great change in wildlife management is on the horizon. During one of the discussion periods someone from the Forest Service declared that Partners in Flight represented not just an effort to conserve birds but decades of pent-up frustration on the part of forward-thinking wildlife biologists—and the moderator had to wait for the applause to stop before she could continue.

But, while I’m optimistic, I’m not complacent—and neither should you be. Now is the best time ever for activists and conservation biologists to press forward with efforts to preserve migratory bird populations. The iron is hot! Here are some suggestions for action.

LEARN MORE ABOUT THE ISSUE.

- A great overview of the NTMB situation is provided in Finch, D.M., 1991. Population ecology, habitat requirements, and conservation of neotropical migratory birds. Gen. Tech. Rep. RM-205. Fort Collins, Colorado: USDA, Forest Service. Rocky Mountain Forest and Range Experiment Station, 240 W. Prospect Rd., Fort Collins, CO 80526.

- The best data to support the importance of large, contiguous forests for neotropical migratory bird populations is contained in: Robbins, C.S., Deanna K. Dawson, and Barbara A. Dowell. July, 1989. Habitat area requirements of breeding forest birds of the middle Atlantic states. The Wildlife Society: Wildlife Monograph No. 103. 34 pages.

- Get the free Partners In Flight newsletter, published by the National Fish and Wildlife Foundation. Keep abreast of current activities and programs of all agencies and organizations participating in the program. Write: Peter Stangel, NFWF, 1120 Connecticut Avenue, NW, Suite 900, Washington, DC 20036.

* editor’s note: Methinks songbirds want habitat, not “Management opportunities.” They would not make good bureaucrats.

PARTICIPATE IN INTERNATIONAL MIGRATORY BIRD DAY, MAY 8, 1993.

IMBD, coordinated by the Smithsonian Migratory Bird Center in cooperation with the Information and Education Working Group of Partners in Flight, will provide a platform for the numerous conservation efforts now under way and will inspire new efforts. On IMBD, during the height of the spring migration, the concerns of scientists will be taken to the public, the media, and legislators. People throughout the Americas will take part in bird counts, sponsor lectures, set up educational displays, hold fund-raising activities, and work together to protect and restore bird habitat.

- To start planning events, write for the "Migratory Bird Handbook," a workbook of ideas on events for IMBD and every day. It can be photocopied for further distribution and is a steal at \$5, which you should send to: Jamie Doyle, SMBC, National Zoological Park, Washington, DC 20008 (202)673-4908.

- One simple thing you can do to observe IMBD is to show the slide program "Migrant Birds, A Troubled Future?" This 60-slide, narrated program was produced by the Information & Education Working Group of Partners in Flight and is available for \$50 plus \$3.95 shipping and handling from The Crow's Nest Birding Shop, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, NY 148950 (607)254-2400.

CHECK WHAT YOUR STATE IS DOING ABOUT NEOTROPICAL MIGRATORY BIRDS.

Write to your state wildlife agency and ask whether it is participating in Partners in Flight. If so, ask what it is doing and how you can help. If not, encourage it to participate. Most wildlife management activities take place at the state, not federal, level.

BECOME AN AMATEUR ORNITHOLOGIST AND CONTRIBUTE DATA TO THE FIELD OF BIRD CONSERVATION.

The history of ornithology is replete with the contributions of amateurs, who continue to contribute today. Numerous bird research and conservation programs welcome, even seek, the contributions of volunteer researchers.

- The best way to learn about research opportunities near your home is through the "Directory of Volunteer Opportunities for Birders" published by the American Birding Association. The directory lists opportunities with the Forest Service, Bureau of Land Management, National Park Service, Fish and Wildlife Service, and Canadian Wildlife Service. Send \$2 for the directory to ABA Sales, POB 6599, Colorado Springs, CO 80934.

PARTICIPATE IN PROJECT TANAGER.

Of all the volunteer-driven bird research projects, a new effort known as Project Tanager is perhaps the most relevant to proponents of wilderness restoration. The project seeks, for the first time, to examine the importance of large, intact forests for songbirds throughout North America.

Considering the declining North American birds, ornithologists are most alarmed about a group known as "forest interior specialists." This group includes dozens of familiar songbirds such as warblers,

vireos, thrushes, and tanagers, which require large tracts of forest—perhaps 1000 hectares or more—for successful breeding.

Evidence for population declines comes primarily from the Breeding Bird Survey (BBS), a volunteer bird-counting effort conducted each June by about 2500 birders in the United States and Canada. 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. Many of these are forest interior specialists, and for some species, declines have been precipitous. Both the Wood Thrush and the Rose-breasted Grosbeak, for example, decreased four percent per year.

Several factors could be responsible for the declines, including loss of habitat on tropical wintering grounds and along migratory corridors, particularly coastlines. Given that many of the declining species are forest interior specialists, attention has also focused on a growing problem on the North American breeding grounds: forest fragmentation. This is the process by which large, continuous forests are divided into smaller blocks, by roads, logging, urbanization, or other human development.

Ornithologists suggest that fragmentation of forests harms woodland birds by increasing their susceptibility to predation and nest parasitism. Opportunistic predators such as jays, crows, raccoons and cats, as well the parasitic Brown-headed Cowbird, are usually found in disturbed, open habitats. If a forest is dissected by roads or power-line cuts, then these meso-predators and cowbirds can penetrate the woodland with ease. Also, some birds avoid nesting in small forest tracts or near edges for "psychological" factors of habitat selection.

Unfortunately for forest-dwelling birds, fragmentation is pervasive throughout most of the United States. Housing developments carve up once-continuous woodlands. Logging operations punch roads into previously undisturbed forests. And agency wildlife biologists have traditionally promoted forest fragmentation because of perceived benefits to deer, grouse, Woodcock, and other game species that thrive on habitat edges.

During the past 15 years, the importance of large areas of continuous forest for maintaining forest interior specialists has been demonstrated in the eastern United States. U.S. Fish and Wildlife Service biologist Chandler Robbins, in particular, has documented the habitat area requirements of forest birds breeding in the middle Atlantic states. In a 1989 Wildlife Monograph, Robbins and his colleagues, Deanna Dawson and Barbara Dowell, concluded that an observer had the best chance of finding most forest-nesting neotropical migrants in large forests, those of several hundred hectares or more.

Nevertheless, the ecological value of continuous forest for woodland birds is not completely proven. One reason is that few studies of the area required by forest birds have been conducted outside of the East. In addition, some ornithologists remain unconvinced that forest fragmentation is a problem for woodland birds anywhere. The reason for declining species, they believe, is simply natural changes in vegetation or food supply. Research is therefore needed to confirm the importance of continuous forests in the eastern United States and to determine if large forests are equally important elsewhere in the country.

That's why the Cornell Lab of Ornithology has started Project Tanager. With funding from the National Science Foundation and the National Fish and Wildlife Foundation, our primary goal is to involve large numbers of birders in a study that will determine the size of for-

est required for successful breeding by each of the four species of North American tanagers—the Scarlet Tanager in the Northeast, the Summer Tanager in the South, the Western Tanager in the West, and the Hepatic Tanager in Arizona and New Mexico. We also want to define the habitat requirements of tanagers. We hope that birders and land managers will use our study design and census points to identify other species that may require large areas of continuous forest for survival or reproduction. For this project, which we call a National Science Experiment, we have selected the following hypothesis: All four species of North American tanagers will be more likely to occur and will be more likely to breed successfully in larger patches of forest than in smaller ones.

Why did we pick tanagers? First, all four species are neotropical migrants that could be sensitive to forest fragmentation. Robbins's data suggest that both Scarlet and Summer tanagers are most likely to be encountered in forests of 3000 hectares or larger. Second, most areas within the 48 contiguous states are inside the breeding range of at least one of the four species. Finally, for a study involving large numbers of participants, tanagers are a good subject because they are relatively conspicuous and fairly easy to identify both by sight and by sound.

What's involved? As a Project Tanager participant, you select census points in forests of different sizes, then visit each point twice during the breeding season to search for tanagers and to look for evidence of successful nesting.

If you have limited time, you can conduct a partial study by visiting at least five census points in a small or medium forest and at least five points in a large forest. You should be able to accomplish this in just a couple of days. If you have more time or more observers, you can conduct a complete study of 32 points: eight in each of four forest sizes—small, medium, large, and continuous.

After selecting census points, you visit each one twice, with about one month between visits. On the first visit
y o u

look and listen for tanagers until you see or hear one or until ten minutes have elapsed. On the second visit, you follow any tanagers you find to look for evidence of breeding.

Each round of 32 "point counts" should take three or four days, so if working alone, your total involvement during one breeding season—for a complete study—would be six to eight full days.

You'll record your data on computer-readable forms and send them to the Lab of Ornithology. Lab biologists will then analyze your results, report the findings to you and other participants, and distribute the results to cooperating organizations and the media. We will also publish the results of the project in scientific journals. Finally, we'll provide suggestions for studies that you can carry out, analyze, and publish on your own, should you be so inclined.

We encourage bird clubs, National Audubon Society chapters, and other conservation groups to tackle Project Tanager in teams, multiplying brain power and shortening the time commitment. Four teams, for example, should be able to cover 32 points in one day.

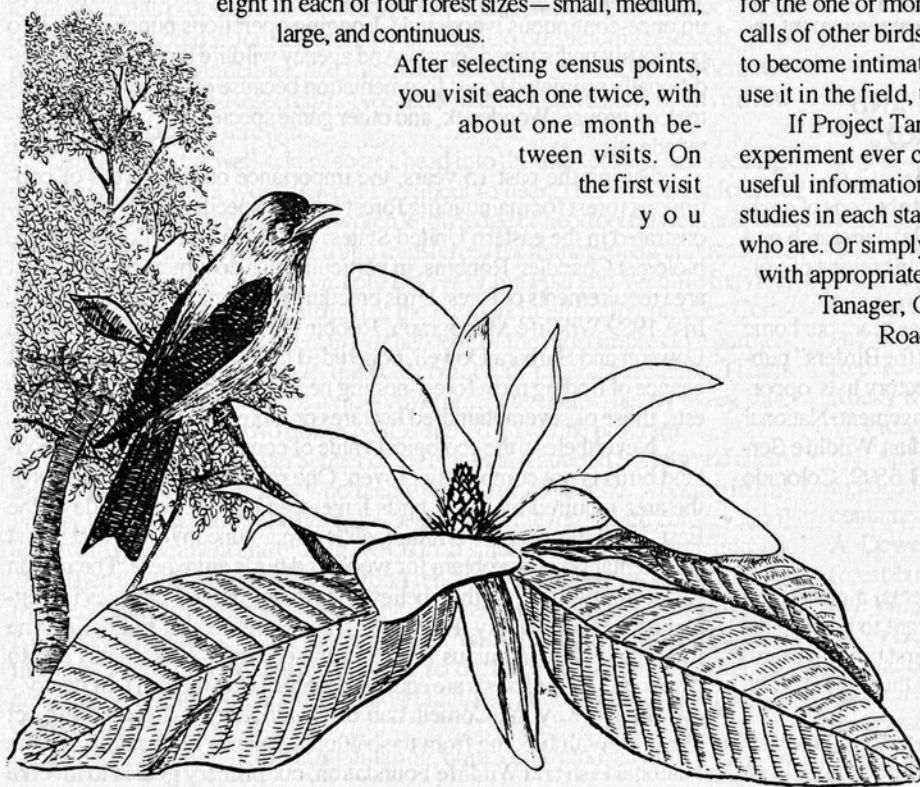
Lab of Ornithology staffers are working with land managers, such as biologists with the U.S. Forest Service and various state agencies, to identify study sites around the country. In many areas we should be able to link participants with biologists who can identify appropriate census points, so that birder involvement will be simply observing and counting birds.

Your participant's kit will include instructions for identifying study sites, conducting the experiment, and filling out the data forms. The kit also includes full-color illustrations of both males and females of each species of tanager, species accounts including habitat requirements and field identification tips, and a cassette tape of tanager songs and calls for the one or more species in your area. The tape also has songs and calls of other birds that sound similar to tanagers. You will use the tape to become intimately familiar with tanager vocalizations. You'll also use it in the field, to lure skulking tanagers into sight.

If Project Tanager succeeds, it will be the largest natural history experiment ever conducted and should yield tremendous amounts of useful information. For this pilot year we hope to run two complete studies in each state. Even if you're not a birder, team up with friends who are. Or simply identify some study sites which the Lab will match with appropriate birders. To participate, please write or call: Project

Tanager, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, NY 14850 (607)254-2446.

Rick Bonney is director of education and information services at the Cornell Lab of Ornithology, and chair of the Information and Education Working Group of Partners in Flight.



Scarlet Tanager (*Piranga olivacea*)

BEACH MOUSE BINGO

(Part Two) Litigating with Extinction

by Ray Vaughan

[NOTE: As you will recall from the last chapter on the legal saga of the Perdido Key Beach Mouse (*Peromyscus polionotus trissyllepsis*), gonzo environmental attorneys Ned Mudd and Ray Vaughan had filed suit on 30 January 1992 on behalf of the mouse, against the United States Department of Interior. Their clients were The Alabama Conservancy (not affiliated with The Nature Conservancy) and the mouse. Lacking money, offices, secretaries, paralegals, support staff and any sense of decorum, Mudd and Vaughan went out to do battle with the forces of the Bush Administration. "Beach Mouse Bingo (Part One): Playing Games with Extinction," in the Summer 1992 issue of *Wild Earth*, told the chronicle of the Endangered mouse prior to the filing of the federal lawsuit. Here is the story of what happened with the suit.]

**Perdido Key Beach Mouse...
world's coolest Endangered species.**

Many people think filing a lawsuit means big, important things happen right away. Not so; the mystical aura of litigation is all hogwash. As the case of the Perdido Key Beach Mouse (world's coolest Endangered species) demonstrates, the filing of the complaint initiated a long period of dullness. When you sue the federal government, they get 60 days before they have to file any kind of response, and that is 60 days after they are served with their copy of the complaint, which is usually about two weeks after the complaint itself is actually filed in court. Since The Alabama Conservancy's complaint had been filed at the end of January 1992, the feds would have until mid-April, or thereabouts, before they needed to do anything.

The issues of what the government must do to protect the mouse from the hotel development in question and the lack of government implementation of the recovery plan are a very factually-intensive affair; seeking a temporary restraining order or a preliminary injunction without getting all the necessary facts first would have generated nothing but anger from the judge. This development was not going to wipe out the mouse immediately; according to the Fish and Wildlife Service's biological opinion, the hotel complex would put the species "in jeopardy" of extinction, the end coming with the next big storm, perhaps several years away, maybe more. Or the end could come through gradual degradation of the mouse's habitat due to the development and its indirect impacts. Thus, without any immediate threat to the species's survival, seeking to stop the development right away would be futile from a legal standpoint.

Of course, logic tells you that if the development will harm the species, it is best to stop it early, until a decision can be rendered by the courts. Law, though, has no connection to logic or reality. With a Republican judge assigned to our case and no money to fuel a bitter contest over a preliminary injunction, we decided that the best plan of action was to marshal the facts from the world's expert on the species and present our case so that the judge could make a detailed order that would lay out exactly what needed to be done for many years to come. If the harm caused by the development could be mitigated sufficiently without having to stop the thing, the judge would like us, the press would like us, and a major confrontation between the Endan-

gered Species Act and the Fifth Amendment's prohibition against the taking of private property without just compensation could be avoided. If the harm from the development could not be mitigated, then it would have to be stopped; this would mean an intense confrontation with the developers, the judge and the whole system.

All this underscored the importance of what Dr. Nicholas Holler would say. He is the world's expert on the Perdido Key Beach Mouse, and our case would basically ask for whatever he said must be done to protect the mouse. Thus, if he said the development could stay if the critical habitat next door were enclosed with a fence to prevent human interference by the guests of the development, then that would be the relief we would seek. (The fence was the developers' idea for mitigation of the increased impact due to their hotel.) But if Holler said that the development had to go entirely, then that would be our position. If he said nothing needed to be done, then we would be instantly kicked out of court. Generally, the opinion of the experts and agency charged with protecting wildlife will prevail in court.

Our problem was that Dr. Holler worked for the defendants; he was a Fish and Wildlife Service employee who taught at Auburn University through a cooperative agreement. He was in the command of the very people we were fighting, and we were not allowed to talk with him. Consequently, we would have to subpoena him to testify at a deposition. We had to trust that Dr. Holler was an honorable man who truly cared about these mice; otherwise, he would just say what the government lawyers told him to say, and we would be out of court.

I drove over to Auburn one afternoon in March to deliver the necessary subpoena to Dr. Holler. Wanting to make the experience as pleasant for him as possible, I had forewarned him that I was coming with the subpoena. To make his deposition easy also, I set the deposition for a time that Dr. Holler had free and for his own offices. In litigation, being nice to "The Expert" is just common sense; being cooperative with the "Bad Guys" is wise during the early stages of the case. The appointed date for the deposition was 2 April 1992.

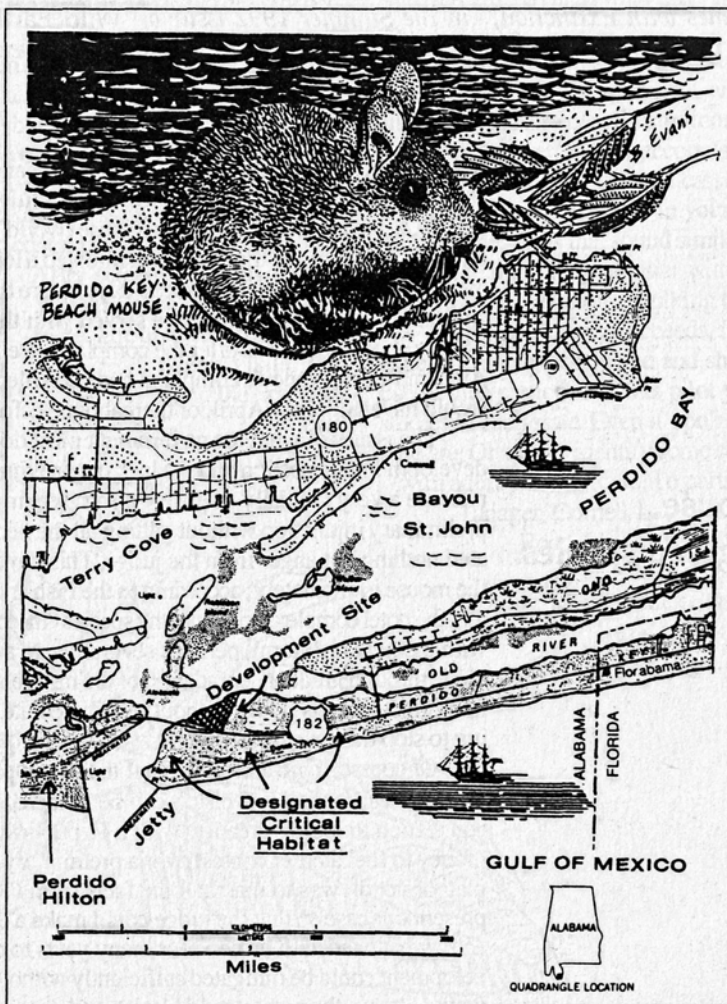
In addition to subpoenaing all of Dr. Holler's records and data on the mouse, I subpoenaed a mouse from the captive population at Auburn. With this legal maneuver I hoped to accomplish one thing: meeting my client. The odds against seeing a Perdido Key Beach Mouse in the wild are right up there with seeing a Florida Panther in the wild. The captive popu-

lation is heavily and jealously guarded, and rightly so, for in the event of a major storm or other catastrophe on the Key, the captive stock is the final hope for this creature. I may be the first lawyer in history to subpoena a mouse, perhaps the first to subpoena an Endangered species.

In March, we learned that the Perdido Bay Environmental Association (PBEA), the other group that had filed a 60-day notice letter threatening to sue to protect the mouse, had gotten "cold feet," as one PBEA member put it. Although some of them wanted to go forward, the group decided not to sue. However, one member, Joy Morrill, a biologist who lived near the Key, decided to sue on her own. Her attorney, Hank Caddell, prepared a much more complex suit than ours, seeking to prevent the Federal Emergency Management Agency (FEMA) from issuing flood insurance for the development. Dragging FEMA into the case complicated the situation immensely. Mudd and I wanted to keep our simple goal of requiring whatever was necessary to save the mouse away from the bureaucratic and legalistic morass Hank was launching.

However, Hank and his client did sue the developers directly, claiming that they should be enjoined from building the hotel, restaurant and lounge. Ultimately, Hank's claim against the developers would be the deciding factor in both cases. We had not sued the developers because our clients were afraid of being counter-sued by them, and the president of The Alabama Conservancy was told he would lose his job if the Conservancy sued the developers. So, Mudd and I sued only the government; the ESA clearly says that citizens can sue to force the government to fulfill its mandatory, non-discretionary duties under the Act. However, this was a trickier way to stop the development than was suing the developers directly. No one had ever sued the government to force it to make a third party stop violating the Act. Thus, we had legal issues of first impression: not the easiest way to litigate, but definitely the most fun.

None of the big environmental organizations had done anything to prevent this important creature from going extinct, and only one of the local groups had taken real action—The Alabama Conservancy. Even that had been only after Mudd and I agreed to work without any pledge of payment other than the clients' vague plan to raise funds. Environmental groups are big on talk and press releases, but getting one to do



map by Brian Evans



something risky to protect the environment is akin to wrestling gators (which I have tried; it is much preferable to litigation). As they say in the Deep South, "That dog won't hunt."

The Conservancy finally had joined this hunt, and Mudd and I had licenses to sue. The government was stalling, but luckily, the development was not developing very much. The reality of money (or the lack thereof) and the nonreality of the Rules of Civil Procedure prevented us from speeding up the suit. So, we decided to take our case to the other attorneys of Alabama and put it in their faces. As chance would have it, the environmental law section of the Alabama State Bar was to hold its annual continuing legal education seminar at the Perdido Hilton on March 27 and 28. Having been an instructor at the 1991 seminar, I was not invited back to instruct at the 1992 one. Instead, they were bringing in an industry lawyer from the infamous Birmingham law firm of Balch & Bingham, whose environmental law section is headed by William Satterfield, a former aid and protege to James Watt. The Balch attorney, Glenn Waddell, was to give a presentation entitled "Endangered Species Act of 1973: Who's Afraid of the Big, Bad Beach Mouse." Mudd and I planned some entertainment for the question and answer period.

On the first day of the seminar, we were there with our friend and fellow environmental lawyer Bart Slawson. The entire day's discussion centered around the Perdido Key Beach Mouse case and several other cases that Bart, Mudd and I had filed. The Empire had definitely noticed what we were doing. Being an astute young lawyer, Glenn Waddell knew we were there, and although he made clear that he thought the ESA was much too constricting on business, he took care to stay away from any discussion on the merits of our mouse case. We had stun guns and mace and were ready to jump him, and he sensed it.

Cruising west out of Gulf Shores after day 1 of the seminar, I watched for a dirt track that would lead me into a wild and little-known area of the Fort Morgan Peninsula where the Empire could not find me, at least for the night. Next to the Bon Secour National Wildlife Refuge, my own refuge was a bit of sand dunes, shore and marsh where a close relative of the Perdido Key Beach Mouse lives. I stopped my car and pulled out my sleeping bag. Here was the land of the Alabama Beach Mouse (*Peromyscus polionotus ammobates*), another imperiled subspecies, but with much more remaining habitat than its Perdido Key cousin. Still, so much of this area, too, is being developed that *P. ammobates* stands not far behind *P. trissyllepsis* in the waiting line for extinction. The sounds of the waves and the beeping of the warning sirens on the natural gas drilling rigs just offshore here near the mouth of Mobile Bay lulled me to sleep quickly.

The rest of the seminar dealt with such exciting topics as discharging Superfund liability in bankruptcy. After I returned home, the lawyers for the government, John Harrington in Atlanta and Charles Brooks from the Justice Department in Washington, called and asked if the deposition of Dr. Holler could be postponed a week until April 10. We

agreed. In the beginning, be nice to your opponents.

When April 10 came, we got our favorite court reporter, and drove to Auburn. When we arrived at Dr. Holler's office, he pointed to a small, clear plastic box on a table. There it was, a male, not half as big as my pinkie, and incredibly beautiful.

We moved to a conference room and began the deposition. The government lawyers were there and the developers' lawyer, Rick Horder, as well as Hank Caddell. It did not take long to realize exactly what the good doctor's position was: the hotel complex would mean the end of the mouse and nothing could be done to mitigate the damage the development would cause. Dr. Holler bluntly stated that the entire area was critical habitat for the mouse and should be protected from any and all development. Although he was visibly nervous, Dr. Holler maintained his integrity and laid his career on the line for the Perdido Key Beach Mouse. Basically, he handed us our case. Dr. Holler was emphatic, and our case was now clearly defined: nothing less than total protection for the land north of the highway would suffice. Indeed, Dr. Holler stated that with so much of the key already under development, even total protection for this last remaining portion of habitat would not recover the species; the Perdido Key Beach Mouse would be endangered forever, and everything possible must be done to hold even the status quo. As Dr. Holler stated, "A development at this particular point is the worst place in my view that we could have a development."

With the success of a deposition that was completely in our favor, victory in the case was all but inevitable. IF the case were judged on the facts and the best available scientific evidence. Meanwhile, our judge recused himself from the case, and both our case and Hank's were transferred to Judge Charles Butler, who was, according to Hank, a relatively pro-environment judge. Hank made a motion for a preliminary injunction against the developers; and, facing a judge who was making noises about how the government did not do its job, the developers voluntarily agreed to stop work until the judge could rule on the motion in late July or early August. While Hank was tangling with the developers, we were facing a motion to dismiss from the government. Claiming that our clients lacked standing, that the government had "prosecutorial/enforcement discretion" over whether to enforce the ESA, and that citizens cannot sue to make the government comply with the mandatory provisions of the ESA, the feds wanted our case thrown out of court. We would have to hurdle this motion and win these issues of first impression before anything else could happen. The magistrate who was scheduling matters in the case set a lengthy briefing schedule for arguing the motion.

In July, Rick Horder, the developers' lawyer, took a second deposition of Dr. Holler in order to try to weaken what the mouse expert had said in the first. It was a sorry sight. Horder got so frustrated at the Fish and Wildlife Service in general that he began to take it out on Dr. Holler, and Dr. Holler responded with testimony even stronger than

that in the first deposition. Dr. Holler said he thought what little work had been done on the complex had already killed mice, had already violated the ESA.

The next day, Hank took the deposition of the developers' "expert" on the beach mouse. This professional witness, what real biologists call a "biostitute," actually said that he is more of an expert on the Perdido Key Beach Mouse than is Dr. Holler, because he had never studied the beach mouse, and thus had a broader, more reasonable view of the situation than Dr. Holler. In his view, the developers could do whatever they wanted, and it would hurt nothing. The "logic" of professional, industry witnesses never ceases to amuse me... "I can see 'the big picture,' because I am not encumbered by knowledge of the facts."

Six months later, our clients, The Alabama Conservancy, finally began to come up with some money for the case, \$2500. T-shirts were still in the design stage, and the staff had not yet applied for grants to get money for the case. Let this be a lesson to all you future gonzo environmental lawyers: either support yourself with some kind of inheritance trust or be prepared to walk the edge of bankruptcy. Environmental groups are tight with their money. Even small groups like The Alabama Conservancy put most of their efforts into self-perpetuation. More is spent on press releases than on litigation that may save what the group ostensibly exists to save. It is a common and tragic affliction.

The need for money is a real problem for lawyers who work in the public interest. Whether in environmental law, civil rights, consumer protection or any other area of good work, those who choose to work for a higher good rather than their own financial self-interest must be prepared to go poor and unappreciated. Recently, Mudd and I won another case for a local environmental group, and that victory was never even mentioned in the group's next newsletter, and the group's Board did not thank us. We changed Alabama law in yet another case of first impression, and those Board members only stared at us with bored expressions on their faces. Yet, another person in the group won a small award for recycling, and the Board broke out in applause, as that event brought in some money.

The hearing on Hank's motion for preliminary injunction was finally set for August 27-28; though the specter of Hurricane Andrew almost caused another delay. For a while, there was a chance that Andrew would turn due north and smash Perdido Key, taking the developers' land and the Perdido Key Beach Mouse with it into history. Instead, Andrew went inland in central Louisiana on August 25, and other than some rain, Mobile was spared; thus, the hearing went on as scheduled.

As mentioned earlier, The Alabama Conservancy's fear of being sued by the developers had led them to insist that we not sue the developer over the threat that this hotel complex was posing to the beach mouse. Hank's client, Joy Morrill, had no fear of developers and so had sued them directly. This move had put Hank's case on a faster, more direct legal track than ours was on. It was possible that Hank would win against the developers early on and thus moot our case against the government. Such an outcome would protect the beach mouse and avoid a possibly "bad" legal precedent in our case of first impression. (The mooting of our case would mean Mudd and I would never get attorney fees for all our work. The possibility of never being paid is part of being a gonzo environmental lawyer.)

I went to Mobile to help Hank with his hearing. He had been kind

enough to ask me to assist him with the case, and it was important that either Mudd or I be there so that we could evaluate this judge. If Hank won here, the legal battle would be just about over; although the developer would probably appeal. If the judge went hard against Hank here, he would go against us, too. When everything you fight for rides on the discretion of one man, who has about as much power as our society ever gives one man, it is usually easy to tell early on what he will do. Power manifests its intended direction early.

Sure enough, Judge Butler took very little time in revealing the direction he would go. He was everything you would expect in a federal judge: distinguished, apparently intelligent, cordial, and biased. The judge took copious notes; he listened carefully, and throughout the trial, he revealed his thoughts on how to resolve this case. He was a good Republican.

As such, Judge Butler showed a partiality toward protecting the right of property owners (the developers) to do whatever they wanted unless the evidence was overwhelmingly in favor of the mouse. Dr. Holler gave heart-felt and definitive testimony about how this development would mean the extinction of the mouse, but Judge Butler fell back on an old Empire rule of law: in the face of "insufficient data," allow industry/developers to do whatever they want. Although the Endangered Species Act says clearly that the rule when faced with insufficient data is to side with the species, the Reagan/Bush federal bench, of which Butler was a part, had in effect decided to ignore all dangers if the data are not conclusive. Thus, despite the world's expert on the mouse stating unequivocally that this development would mean the mouse's extinction, the judge made it clear that he considered Dr. Holler's conclusion to be mere opinion. True, Dr. Holler did not have definitive data to back up everything he said, but it is just impossible to collect data to explain everything about wildlife biology, particularly when the Administration would not fund studies. The mouse was about to get caught in a little-known, but highly effective, Republican Administration trap: They would not protect a species without sufficient data to prove imminent danger, but they would not fund the studies necessary to get that data.

Anything less than complete victory for the beach mouse would be defeat, and the judge was letting us know that we would not win. Judge Butler displayed an appalling lack of understanding regarding wildlife biology. When told that there was no more available habitat on Perdido Key, the only natural habitat for the mouse, Judge Butler hypothesized that large wilderness islands elsewhere in Alabama and even Mississippi would be appropriate places to introduce the beach mouse. Beach mice have never occurred west of Mobile Bay, but Judge Butler saw all that "empty" beach on Dauphin Island and even Horn Island in the Gulf Islands National Seashore and figured those would be dandy places to put the mice. Learning that excess mice in the captive colony in Auburn were killed, because the colony could only hold so many mice, the judge said, all those extra mice could be introduced to "empty" beaches all along the Gulf Coast.

During the hearing, the Department of Interior's attorney, Charles Brooks, helped the developers with their case. Assisting them with exhibits and strategy, he made it clear whom the Administration favored. This was no surprise to me, as I commonly see such alliances between our public servants and those destroying the public trust.

At the end of court Friday, Judge Butler told us he would issue a ruling in a month or so. Hank had done a good job. Yet the judge hinted

that he would find a compromise; he even asked the parties if we could settle this case. We said we could not.

On 28 September 1992, Judge Butler issued his ruling, and he came down squarely in favor of the development. It was a very *cute* opinion; the judge put a small, computer graphic mouse at the top of the first page and quoted from *Stuart Little*, the E. B. White children's book about a mouse born to human parents. However, the judge did not quote much from the Endangered Species Act, which he had obviously decided not to follow. When a judge ignores key provisions of the statute controlling a case, it means he intends to write his own law; Reagan/Bush appointees are notorious for this kind of judicial activism. Having bought the defendants' logic that scientific evidence of harm under the ESA must be conclusive (even though such absolute assurance is impossible in science), Judge Butler held that the beach mouse "has proven itself a survivor in the limited remaining habitat that is available to it on this earth." Then he sanctioned the further reduction of that habitat. Basically, Judge Butler ruled that the beach mouse was not even endangered, because the mouse has existed up until the present; species still alive must be "survivors" and thus will continue to survive. Such illogical reasoning is standard fare for Republicans.

Judge Butler's flippant opinion and irresponsible holding had doomed our case as well as Hank's, for the judge had also decided that citizens cannot sue the federal government to force it to protect a species. Using a handy trick of semantics, the judge found the government's duty to do everything possible to protect and recover a species *discretionary*, not mandatory. All that is required is for the Fish and Wildlife Service to put those mandatory actions in a recovery plan; since the elements of a recovery plan are discretionary, those mandatory actions become discretionary as well. Very nice, very neat, very Republican, and the Republican judges on the Eleventh Circuit Court of Appeals, where any appeal in this case would go, would like it very much.

Hank declared that he would appeal, but the Eleventh Circuit is one of the worst courts in the nation on environmental matters. Knowing the facts of the case and the law, one can easily see the errors of Judge Butler's opinion, but if one read only the opinion and knew nothing else about the case, one might conclude that Butler made a reasonable decision. The judges on the Eleventh Circuit are not known for delving deeply into the facts or the law in the cases appealed to them. Also, as a rule, appellate courts will not reverse a trial court on errors of facts unless those errors are so gross as to make the judge's holding arbitrary and capricious. It is very hard to show that a judge erred that badly. I judged Hank's chances on appeal to be one out of twenty.

Hank and his client would need thousands of dollars just to pay for the enormous transcript in order to appeal the case. It takes money to make money; it also takes money to get justice, at least in this country.

The leaders of The Alabama Conservancy were sufficiently saddened by the court's holding, but this loss would add fuel to the fire of those who wanted the group to shift to the right and effect change "from within a cooperative atmosphere with business." Getting beaten in court, even just once, can make environmental groups ready to sell out. It is easier and safer, personally, to stay out of the fray. At the very next board meeting, The Alabama Conservancy hired a fund raiser and initiated a program of soliciting large contributions from corporations, any corporations.

In late December of 1992, just before Hank's time to appeal had

run out, all the lawyers involved gathered together and settled both cases. The mouse got more research into its habitats and into the impacts of development, a commitment to reintroduce it to the third and last available habitat, and a revision of its recovery plan to reflect current knowledge of the creature. The developer agreed to give \$3000 per year for 15 years to The Alabama Conservancy for research and public education efforts for both the Perdido Key Beach Mouse and the Alabama Beach Mouse. Also, the developer agreed to make certain modifications to the development and initiate education programs for its customers about the mouse. Hopefully, these mitigation measures will make the difference between extinction and survival. Dr. Holler does not think so, but we were bargaining from a position of extreme weakness, from the end of the plank.

The Conservancy was ecstatic to be promised \$45,000, and looked at Mudd and me in a somewhat better light; but what did they pay us in attorney fees from this big settlement deal? Zip; we got nothing. The Conservancy had paid me \$2500 up to that time to help me get by, but without any attorney fees, I would lose \$12,500 in my time and Mudd would lose \$5000. Yet, we had to accept the settlement. The government refused to settle if we got any money! It was a choice of the mitigation measures for the mouse and no money for us, or nothing. Mudd and I are not that attached to money.

The litigation over the Perdido Key Beach Mouse is over for now. Too many Republican judges issuing too many inane opinions... that is what our nation has come to, and to paraphrase Edward Abbey and B. Traven, "This is the United States, muchachos. This is the real nation, and you are in it." Hopefully, the new Clinton/Gore Administration will change some of this, but what they have been saying since the election is not very encouraging.

Construction has resumed on the development. The case of the Perdido Key Beach Mouse shows just how weak even the strongest environmental law on the planet is when confronted by money and greed.

WHAT CAN YOU DO:

No need to send money to The Alabama Conservancy; it now has plenty from the developers to get beach mouse education projects going. The Endangered Species Act is up for reauthorization in 1993. Write your representative and senators and demand increased protections for all creatures and for ecosystems. Support legislation strengthening the ESA, such as that introduced last year by Representative Gerry Studds (D-Massachusetts). His bill in 1992, HR 4045, would have doubled funding for species recovery and would have required that Critical Habitat be established for all listed species. See ESA article, "Studds Expected To Defend Endangered Species," this issue. (Representatives are at US House of Representatives, Washington, DC 20515; Senators at US Senate, DC 20510.)

Write to Bruce Babbitt, new Secretary of Interior and insist that the Perdido Key Beach Mouse get all the additional protection that the government agreed to in this case and more. Tell Bruce you want diligent protection by Interior for the little-known Endangered species. (Secretary Bruce Babbitt, Department of Interior, C St. between 18th & 19th Sts., Washington, DC 20240.)

Ray Vaughan (3320 Wellington Road, Montgomery, AL 36106) is now formulating, along with fellow environmental lawyer Ned Mudd, a wildland recovery plan for Alabama.

Studds Expected to Defend Endangered Species

by Mary Byrd Davis

In 1992, when authorization to fund the Endangered Species Act (ESA) expired, Representative Gerry Studds (D-MA) introduced HR 4045 to reauthorize funding and to strengthen the Act. Although his bill gained 109 cosponsors, the committee with jurisdiction, the Merchant Marine and Fisheries Committee which Studds chairs, held no hearings and the bill died. Congresspeople had agreed that the ESA was too controversial to debate in an election year.

Unless repealed, a law remains on the books whether or not money to implement it is appropriated; and laws that cannot be enforced for lack of money are not conducive to orderly governance, Suzanne Jones, Legislative Representative for the National Wildlife Federation explains¹. Therefore, Congress last year broke its general rule that laws cannot be funded unless the funding has been authorized, and appropriated money to implement the Act for another year. From 1985 to 1988 likewise, Congress had funded the ESA, although the Act's authorization had expired. The situation may recur in 1993.

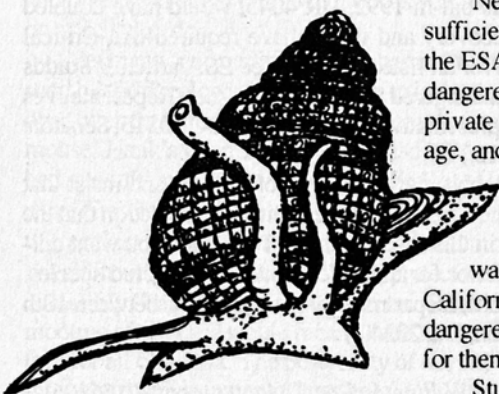
At this writing, late February, no bills to reauthorize funding of the ESA have been introduced. Gerry Studds is expected to submit a bill similar to HR 4045 in March. HR 4045 would have increased the sum authorized to implement the ESA; allowed citizens in emergencies to file suits to enforce the Act, without first waiting the previously required 60 days; and encouraged the US Fish and Wildlife Service (FWS) to shift from a single species to a multispecies approach. In the eyes of environmentalists, HR 4045 was a good bill, although it did not go far enough.

An Endangered Species Coalition has drawn up a list of changes that its members would like to see in the Act and is trying to persuade Studds to add them to his forthcoming bill. With more than fifty environmental organizations as members, including Greenpeace, Defenders of Wildlife, The Wilderness Society, the Fund for Animals, and the World Wildlife Fund, the coalition is an influential voice. Its recommendations include increasing protection for listed plants on federal lands; applying the law to actions by US federal agencies overseas; and encouraging federal agencies to undertake prelisting conservation efforts.

Nevertheless, in the opinion of some conservation biologists, the Coalition's improvements are insufficient. One major problem is Habitat Conservation Plans (HCPs), the result of a 1982 amendment to the ESA. The amendment allows agencies or private parties to "take" individuals belonging to an Endangered species, when this destruction is "incidental" to an otherwise lawful activity. The agency or private party must prepare a Habitat Conservation Plan committing it to measures to mitigate the damage, and the plan must be accepted by the Fish and Wildlife Service. The HCPs prepared and accepted

under the amendment have allowed destruction of the habitat of Endangered and Threatened species in return for assistance in the establishment of preserves on other land. Conservation biologists point out that transplanting an already Endangered or Threatened species is not the way to preserve it. Bay Area Land Watch, an organization formed to protect San Bruno Mountain in California, says that the first HCP, which allowed construction on the mountain though it harbored Endangered species, has not worked. "Restoration and maintenance efforts have not met the promises made for them. . . . Habitat restoration and substitution is failing."

Studds's HR 4045 would have increased the use of HCPs by extending them to candidate species and by providing a revolving fund to help finance them. The Endangered Species Coalition would sim-



ply add a requirement "that any incidental taking permitted pursuant to sections 7 and 10 be fully mitigated to promote the recovery of the affected species and that a party receiving an incidental take statement or permit must demonstrate the existence of the necessary authority and funding to fully implement any required mitigation".²

Bay Area Land Watch advocates additional controls to restrict the use of the HCP exemption, if the HCP amendment is not repealed. The controls would include independent scientific monitoring of HCP programs and cancellation of any HCPs shown to be damaging Endangered species or their habitats. The organization, however, wants the 1982 amendment repealed, a position with which radical environmental organizations concur.

Whether or not Studds's 1993 bill is stronger than his 1992 proposal, his new bill will differ markedly from another proposal expected to be introduced in the House. Last year Representatives Jack Fields (R-TX) and W. J. Tauzin (D-LA) introduced a bill that would weaken the existing Act. HR 6134 would have allowed vaguely defined cooperative management agreements to replace the protections of the Act, required economic analysis before designation of Critical Habitat, and imposed costly new requirements such as a hearing in every county harboring a species to be listed. Supported by an Endangered Species Act Reform Coalition, the Congressmen will probably reintroduce such legislation.

The Senate lags behind the House in preparations for ESA legislation. At this writing the Senate is still reorganizing its subcommittees. Senator Max Baucus (D-MT) has taken over the chair of the Environment and Public Works Committee, which will have jurisdiction over any ESA reauthorization bills. Senator Bob Graham (D-FL) is the new chair of this committee's Clean Water, Fisheries, and Wildlife Subcommittee. The Endangered Species Coalition is looking to Baucus and Graham to introduce a bill in the Senate.

Write to Representative Studds (US House of Representatives, Washington, DC 20515), Senators Baucus and Graham (US Senate, Washington, DC 20510), and your own Congresspeople giving your views on ESA reauthorization.

To be kept up to date on the status of ESA legislation, write to Minette Johnson, Grassroots Coordinator, Endangered Species Coalition, c/o National Audubon Society, 666 Pennsylvania Ave., SE, Washington, DC 20003 (202-547-9009). Bay Area Land Watch can be reached at POB AO, Brisbane, CA 94005 (415-467-6631).

NOTES

1. Suzanne Jones provided *Wild Earth* with documentation and answered questions on ESA reauthorization. The National Wildlife Federation, for which she is Legislative Representative, works with the Endangered Species Coalition but is not a coalition member.

2. Bay Area Land Watch. 1993. Critical Reauthorization of the Endangered Species Act.

Revelation

The first reports of their presence
seemed apocryphal—
brief glimpses of tawny gray fur
through the underbrush, nondescript
dog-like tracks in the mud of farm lanes—
all easily explained away
by the hazy light of summer evenings,
mirages of a wishful mind,
hungry for more exotic sights
than the woodchucks and barn cats
this flat farmland affords—
like the woman in Potterville
who each fall reports seeing a cougar
in the two acre woodlot behind her house.
No one, we all said,
no even our great-grandparents
have seen coyotes here before.

But I became a believer that August:
driving home after a night
of bullheading on the Looking Glass,
braking quickly as I caught the twin almonds
of his yellow-green eyes in my headlights
as he stood by the roadside, ears pricked,
tongue lolling in the midnight heat,
circling the car to catch my scent
before fading imperceptibly from my vision—
his matted coat and brushy tail
merging with the darkened wheat stubble
that lay beyond the ditch:
invisible again
but undeniably real.

—Rod Phillips



Do Zoos Compete with Habitat?

by Mary Byrd Davis

In a recent review of Colin Tudge's *Last Animals at the Zoo*, John Davis noted that the assumption of captive breeding proponents that "monies devoted to captive breeding will not subtract from habitat protection funds" needs to be tested (1). To help open up discussion of this question, *Wild Earth* has taken a look at the funding of zoos and aquaria. We found evidence that, to a limited extent, they do compete with conservation organizations for funding.

Zoos and aquaria have a voracious appetite for money. In 1991 the operating budgets of the 159 accredited members of the American Association of Zoological Parks and Aquaria (AAZPA) totaled \$785,847,316. Capital improvements cost \$441,842,396 (2). After subtracting for Canadian members, the total for the two categories of expenditures is \$1.23 billion. Operating budgets for individual members, as reported in the 1992/93 Association directory, range from \$100,000 for the private Trevor Zoo to \$54 million each for the Sea Worlds of California, Florida, and Texas.

The AAZPA, however, is only part of the story. Nobody knows exactly how many zoos and aquaria the United States has, AAZPA's Beth Zebrowski says. Animal exhibitors must obtain licenses from the US Department of Agriculture, and about 1500 do so. Approximately half of these would be eligible to apply for AAZPA membership. This means the United States may be home to seven hundred or more zoos and aquaria. Since AAZPA's members include most of the nation's major zoos, the budgets of non-AAZPA members can be expected to average less than those of members; but even at an average operating budget of, say \$75,000, and capital improvements of \$25,000, 550 non-members would push the total annual expenditures of US zoos and aquaria to around \$1.8 billion.

Furthermore, AAZPA does not accredit zoos and aquaria until they have been in operation for a few years. Thus initial construction costs are not included in its totals. The AAZPA figure of \$441.8 million represents only capital investments by established zoos and aquaria, which seem to multiply and modernize exhibits and other facilities ceaselessly. The activity not covered by the AAZPA statistic is significant. The South Carolina Aquarium in Charleston will cost \$25 million (3); the Tennessee Aquarium, opened last year in Chattanooga, cost \$45 million (4); and according to *Fortune*, expenditures for a single facility may go as high as \$100 million.

"Ready for the Age of Aquaria?" was the title of an article pub-

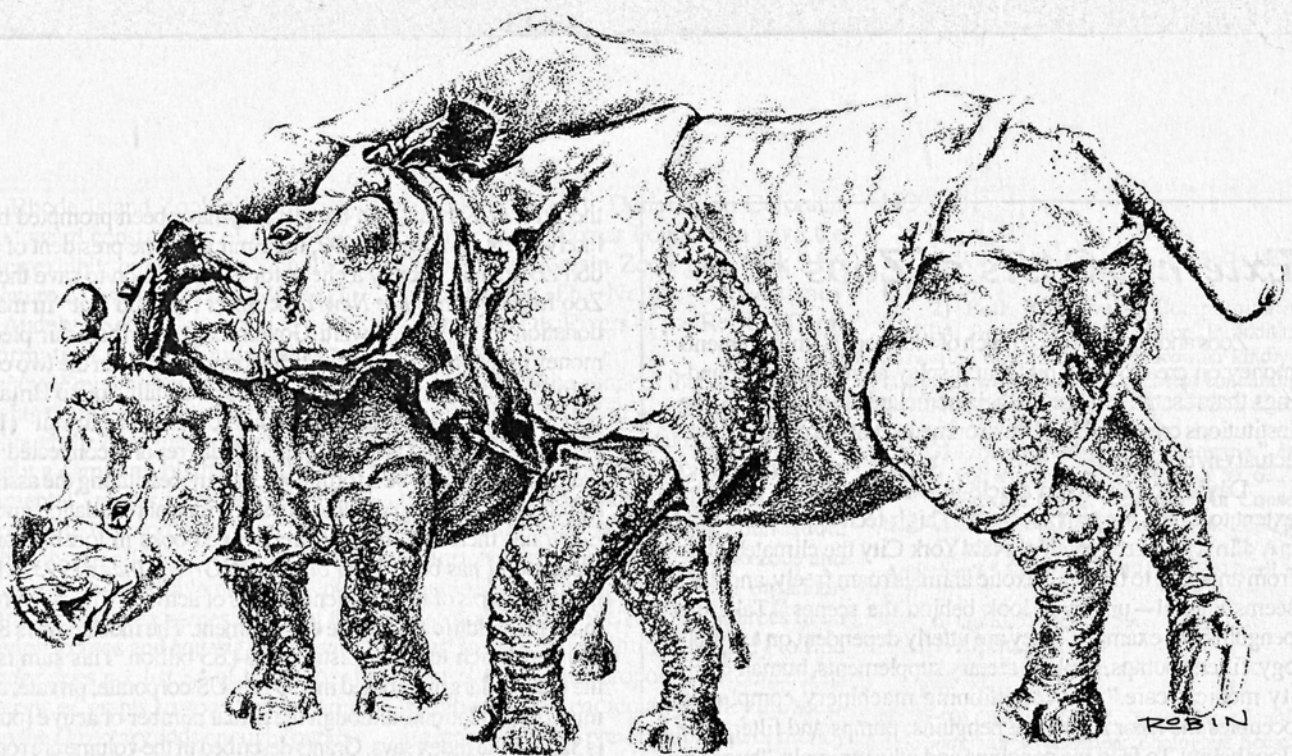
lished in *Fortune* in 1990 (5). Since then, five new aquaria have opened; and thirty aquaria are currently in the planning or construction stage (6). In terms of new institutions, zoos pale in significance next to aquaria.

The reason for the aquarium boom is relevant to a study of financing. The 1990 *Fortune* article stated that "Most cities see aquaria as a way to attract tourist dollars" (7). *Architecture* elaborated, "From the day it opened in August 1981, Baltimore's National Aquarium has been the number-one paid tourist attraction in Maryland, drawing 1.5 million people a year, generating \$128 million in annual revenues for the region . . ." (8).

Sources of money to open and operate zoos and aquaria vary with the type of owner. The breakdown of AAZPA members by ownership, again from the AAZPA 1992/93 directory follows: "owned and managed by governmental agency"—79; "owned by governmental agency and managed by society"—27; "owned by governmental agency and jointly managed with society"—4; "owned and managed by society"—15; "owned and managed privately"—29 (9). Most of the government agencies that own zoos or aquaria are municipalities, although the owner may instead be a district, county, state or nation. "Privately owned" may mean not-for-profit or otherwise (10). An institution owned by a governmental agency is more likely than others to receive government subsidies; a for-profit corporation cannot benefit from funders who give only to non-profits, unless this corporation sets up a non-profit affiliate, as some have done.

The AAZPA does not compile statistics on its members' sources of revenue (11). *Wild Earth* requested annual reports from twelve institutions across the country, and received eight. Given the smallness of our sample and the vagaries of the reports themselves, we cannot provide overall statistics on revenue sources. A few tendencies, nevertheless, stand out from the reports and other literature.

Public or private, zoos and aquaria tend to enjoy immense support from the general public, and they are able to obtain significant portions of their operating budgets from admission fees. Admissions accounted in 1991 for 44% of revenue and support for the Monterey Aquarium and 29% of total income for both the Cincinnati Zoo and the Shedd Aquarium, and in 1992 for 24% of total income for the Minnesota Zoo. (These percentages do not take account of the receipts of affiliated entities.) Gift stores, restaurants, parking fees and programs for which fees are charged are other means of earning money. Never-



theless, the major institutions do not survive on earned income alone.

Government funding is an important source of revenue for many; and in some cases, governments assist institutions they do not own. If you live in a city with a zoo or aquarium or, in some cases, in a state so outfitted, chances are that you help foot the bill. The state-owned Minnesota Zoo received \$6.36 million, 53% of its operating funds for 1992, in public money—\$38,000 from the National Science Foundation for an educational program for high school students, the remainder from the state.

NYZS/The Wildlife Conservation Society, received from the City of New York a total of \$12.2 million during the 1991/92 fiscal year for the International Wildlife Conservation Park (the Bronx Zoo) and the Aquarium for Wildlife Conservation, which it owns, and for the Central Park and Queens Wildlife Conservation Centers, which it manages for the city. (Yes, the New York Zoological Society recently renamed itself and its the institutions, escaping the pejorative connotations of "zoo." [12].) Funding for the former two came through the Department of Cultural Affairs; for the latter two through the Department of Parks and Recreation. Also in 1991/92 the Natural Heritage Trust, a program of the New York State Office of Parks and Recreation, granted \$1.6 million to the International Wildlife Conservation Park and \$193 thousand to the Aquarium. Federal grants, including grants from the National Science Foundation and the Institute for Museum Services for education, totaled \$385 million.

In some cases, a governmental entity appears to be making a conscious choice between zoos and conservation of natural areas. The Forest Preserve District of Cook County, Illinois owns the Brookfield Zoo; the Chicago Zoological Society manages the zoo. The District, which owns 67,000 acres, has a real estate acquisition fund, which may be used for conservation purposes. Most of the money in this fund comes from bond sales and grants; and in 1993 the fund amounts to 2% of the total District budget or \$2.2 million. Meanwhile, the District is selling a bond issue, \$5 million of which is earmarked for land acquisition; \$27.64 million for capital improvements at the Zoo over a five or ten year period (13).

Because local and state governments are in financial crises, privatization of zoos is in vogue. Cities facing the possibility of having to close a zoo consider turning it over to an entity that can afford to run it. New institutions may start life as private. The Audubon Institute, for instance, owns the Aquarium of the Americas in New Orleans. A few zoos have long prided themselves on being independent or of government funds. The Indianapolis Zoo, which is owned by the Indianapolis Zoological Society, does not accept money for operating expenses from the local, state, or federal government (14). Nevertheless, the words "financially independent" as applied to zoos tend to be misleading. Apparently the Indianapolis Zoo would accept money for capital improvements from governments. Furthermore, the Indianapolis Zoological Society received \$240,000 in late 1990 for capital and operating expenses from the Eli Lilly and Company Foundation (which donated \$12,500 to the Fort Wayne Nature Conservancy); and in 1991 the Lilly Endowment awarded it a two-year grant totaling \$3.75 million for debt reduction, operating support and management assessment (15). Yet *The Detroit News* was holding it up as a model of independence! (16) Zoos that do not receive government subsidies must find the money elsewhere. Thus privatization can be expected to increase the pressure for funding on other sources.

When it comes to grants and gifts, the three basic sources, apart from governments, are individuals, corporations, and foundations. What they give is not always easy to determine. Corporations frequently make in-kind as well as cash gifts; and foundations and friends-of-the-zoo organizations may solicit and receive grants and gifts for an affiliated zoo or aquarium. As a general rule, zoos and aquaria depend more on grants for capital expenditures than for general operating funds. Gifts from individuals may be used for operating budgets or for capital improvements.

Imaginative fund-raising committees obtain gifts from the public through such means as memberships, adopt-an-animal programs, and special events. In 1992 for example, the Minnesota Zoo's annual Beastly Ball raised \$93,000.

The donor of donors, however, may be not an American, but rather

External Costs of Zoos

Zoos and aquaria spend much of their capital improvements money on creating exhibits that display animals in surroundings that resemble those of their homelands. In doing so, the institutions create artificial environments that are a drain on the actual environment.

David Berreby in an article in *Discover* makes clear the extent to which modern zoos use a "high-tech approach."

"In a five-acre patch of New York City the climate varies from antarctic to tropical, exotic animals roam freely, and it all seems natural—until you look behind the scenes." Take the penguins, for example, "they are utterly dependent on technology: filters, pumps, coolers, dietary supplements, human-quality medical care." Air conditioning machinery completely occupies the floor above the penguins; pumps and filters, the floor below. To feed the penguins and other animals, "huge refrigerated trucks" deliver to the zoo 12,000 pounds of frozen fish at a time¹.

To name one environment not natural to the United States, "tropical rainforests" proliferate in zoos north and south. The Minneapolis Zoo has a new Tropics Trail that "remains a balmy 70 degrees winter and summer." In 1991 the Cincinnati Zoo began construction of a Jungle Trails exhibit representing African and Asian tropical rainforests. Also in 1991, the Denver Zoo, buoyed by a \$1 million grant from the Schlessman Foundation, started to build Tropical Discovery.

Fine, perhaps, in terms of public education but, to quote Berreby, "the high-tech approach doesn't come cheap," and the costs are not only in terms of dollars. Consider the energy expended in running wave machines, mist machines, heaters, and air conditioners; the plastic employed in making molds to cast concrete rocks; the CFCs housed in refrigeration equipment.

An indication of one aspect of the drain on natural resources is utility bills. In 1991 the Cincinnati Zoo spent \$548,621, the Atlanta/Fulton County Zoo \$431,962, and the Shedd Aquarium \$1.2 million on utilities.

It's a matter of trade offs, spokespeople for zoos and aquariums may say. The public education is worth the price. Well, we'll see. The trend in aquariums is toward regionalization. If they are successful educators, their impact on the area in which they are located should be positive and measurable. The Tennessee Aquarium, for instance, "simulates riverine habitats from Appalachia to the Gulf of Mexico, and is a metaphor for the river itself"². Five or ten years from now will the Tennessee be a cleaner, more natural river, because people studied a sanitized version of it at the aquarium?³ —MBD

1. David Berreby, "Where the Wild Things Are," *Discover*, August 1991, pp. 41-43.
2. Edward Guntz, "Cathedral of Conservation," *Architecture*, Sep. 1992, p. 64.
3. On the Tennessee River today and another project to assist the river, see *Wild Earth*, vol. 2, no. 4, p. 52.

the Emir of Kuwait, and the gift may have been prompted by an unlikely event. In June of 1992, the Emir gave the president of the London Zoological Society a check for \$1.85 million to save the London Zoo from closing. *The New York Times* reported that "In making the donation today, the Kuwaiti Government said the Emir pledged the money in recognition of the 'strong bonds' between the two countries. Some British officials interpreted this as an allusion to Britain's support for the war last year to oust Iraqi forces from Kuwait" (17).

Obtaining and analyzing the annual reports connected with numerous zoos would be a formidable task necessitating the assistance of a professional accountant. To gain some idea of foundation giving, *Wild Earth* has therefore turned to reference books in local libraries. The most useful has been *The Foundation Grants Index 1993*, which lists grants in terms of the recipient's fields of activity, with sections on animals and wildlife and on the environment. The index covers 846 foundations, which together distribute \$4.85 billion. This sum is 53% of the total dollars distributed in 1991 by US corporate, private, and community foundations, although the actual number of active foundations is 32,000, the index says. Grants described in the volume are for \$10,000 or more and were awarded in 1991 or late 1990 (18).

Of the 846 foundations listed, 147 gave at least \$10,000 to at least one zoo or aquarium, for a total of \$31.7 million. Sixty-seven foundations gave at least \$40,000, most of them for general operating budgets and/or capital improvements.

Sixteen of the foundations making substantial gifts did not contribute \$10,000 or more to any environmental organization. These foundations included RJR Nabisco, with \$418,000 to the North Carolina Zoological Society for general support; and the Lied Foundation Trust with \$7.18 million to the Omaha Zoological Society for construction.

The foundations that gave to both zoos and environmental organizations during the period under consideration are the more obvious arena for competition. Thirty-four of the 51 foundations that supported environmental work gave more to zoos than to environmental organizations. The Robert R. McCormick Tribune Foundation awarded \$90,000 for capital support to the Lincoln Park Zoological Society. The Foundation's environmental grants were \$10,000 to Friends of the Chicago River and \$10,000 to Voyageur Outward Bound. In similar fashion, the MNC Financial Foundation donated \$100,000 to the Baltimore Zoological Society and \$72,500 to the National Aquarium in Baltimore, but only \$11,000 to the Chesapeake Bay Foundation and \$10,000 to Marylanders for the Bay. Likewise, the Field Foundation of Illinois donated \$40,000 to the Chicago Zoological Society in 1990, for a fifth and final payment for establishment of a Children's Discovery point in the Zoo's Aquatic Bird House, and \$50,000 to the Shedd Aquarium for its capital campaign to construct a Marine Mammal Pavilion, but gave only \$10,000 to The Nature Conservancy and \$15,000 to People for Community Recovery, also categorized by the *Index* as environmental.

These giving patterns strongly favored zoos, but the division between zoo and environment is sometimes more balanced. The Lyndhurst Foundation provided \$1.25 million to the Tennessee Aquarium, and \$1.04 million to environmental organizations, including \$700,000 to the Tennessee River Gorge Natural Areas Trust. Furthermore, the shoe can be on the other foot, as 16 of the 51 foundations giving to environmental organizations actually gave more to the environment than to zoos. The outstanding example is the Champlin Foundations, which

gave the Rhode Island Zoological Society \$350,000 toward construction of a Plains of East Africa exhibit; but provided \$2 million to The Nature Conservancy and \$30,000 to National Audubon Society.

Information in *Environmental Grantmaking Foundations, 1992 Directory* supplements that in *The Foundation Grants Index*, although the *Directory* presents for each funder only a sampling of the foundation's "environmental" grants in 1990 (19). This source covers, in the words of the publisher, "250 of the most significant private and community foundations that give environmental grants." Its subject index names 56 out of the 250 as giving to zoos and aquaria. *The Foundation Index* does not list 34 of these 56, at least in terms of grants to zoos and aquaria. Therefore the *Directory* adds enough foundations to the 167 identified through the *Foundation Index* to bring the total of major foundations giving to zoos and aquaria to approximately 200.

Seven of the foundations in the *Directory* but not in the *Index* gave \$40,000 or more in 1990 to a zoo or aquarium. The grants from these seven foundations totaled \$9 million. Four gave more to zoos and aquaria than to environmental projects. The Amon G. Carter Foundation, for instance, donated \$260,000 to the Fort Worth Zoological Society's building fund, but only \$1000 to the National Wildflower Research Center, \$15,000 to Save Eagle Mountain Lake, and \$10,000 to the Streams and Valleys Commission. The others gave more to the environment than to zoos. Chevron donated a total of \$175,000 to three zoos and aquaria and a total of \$265,000 to four environmental projects (19).

Corporate and Foundation Grants 1992: A Comprehensive Listing of More Than 95,000 Recent Grants to Nonprofit Organizations in the United States further enlarges our view of foundation giving to zoos and aquaria and adds information on corporate gifts. (20). The reference work raises the number of foundations identified as giving to zoos and aquaria to over 300. Nevertheless, not even this volume captures all the relevant foundations.

Grants in the body of *Corporate and Foundation Grants* are grouped by broad subject categories. Zoos come under the heading "Civic and Public Affairs," a category that reflects a reason why zoos are successful in fund raising. The arrangement of entries allows quick comparison of gifts by one foundation

to a given locality. Donating in Colorado Springs, the El Pomar Foundation gave the Cheyenne Mountain Zoological Park \$1.5 million, and The Nature Conservancy \$250,000 for its Rivers of the Rockies Campaign.

What are the chances that a given environmental organization will compete directly with a zoo or aquarium for funding? The foundations most familiar to environmentalists, the W. Alton Jones Foundation, Pew Charitable Trusts, Mary Reynolds Babcock Foundation, for instance, give little or nothing to zoos and aquaria. However, environmental organizations going to less well known sources in an effort to avoid competition are likely to find themselves sending proposals to foundations that give to zoos, particularly if they are seeking money for land preservation and/or money from local sources. Donors to zoos frequently fund The Nature Conservancy and land trusts. In addition many of them are obviously interested in giving locally.

Our look at zoos and aquariums suggests that additional research on the funding of these institutions would be worthwhile for those concerned with competition between zoos and habitat. If captive breeding is necessary, zoos and aquaria may not be the places to do it, from an economic standpoint. The grant books to which we referred almost never mention captive breeding programs. Zoos and aquaria are absorbing large sums of money for exhibits and other construction that may not be essential to breeding programs.

Further study of zoos and aquaria may also be useful to the fund raisers in conservation organizations. Zoos and aquaria are skilled in obtaining money. Perhaps we should learn from their techniques. Can maintaining a green belt around a city, for instance, be made to seem just as much a civic duty as financing a zoo? Are zoos and aquaria tapping funding sources to which environmental organizations could profitably turn? Imaginative conservationists should be able to steer at least some of the money now going to zoos and aquaria toward habitat protection.

Mary Byrd Davis is Associate Editor of *Wild Earth*. Her recent books include *The Green Guide to France and Going Off The Beaten Path: An Untraditional Travel Guide To The U.S.*

NOTES

1) *Wild Earth*, Vol. 2, no. 4, Winter 1991/92, p. 82.

2) Beth Zebrowski, Communications, AAZPA. Personal communication. In addition to answering questions, Ms. Zebrowski kindly furnished us with AAZPA fact sheets containing information from the Association's 1992/93 directory and with magazine articles.

3) Edward Gunts, "Age of Aquaria," *Architecture*, vol. 81, no. 9, Sep. 1992, pp. 59, 63.

4) Edward Gunts, "Cathedral of Conservation," *Architecture*, vol. 81, no. 9, Sep. 1992, p. 64.

5) Marc Alpert, "Ready for the Age of Aquarium?," *Fortune*, vol. 121, no. 8, 9 April 1990, p. 11.

6) Gunts, "Age," p. 59.

7) Alpert, p. 11.

8) Gunts, "Age," p. 59.

9) Zebrowski.

10) Olney, J. S., ed. *1990 International Zoo Yearbook*, vol. 30 (London: Zoological Society of London, 1991).

The Yearbook contains a list of zoos and aquaria with basic facts about each.

11) Zebrowski.

12) The New York Zoological Society changed its name as "a reflection of the fact that we are, and have been for a long time, an international wildlife conservation organization," said Society President William Conway in a 3 Feb. news release. Wildlife Conservation International is a division of the Society, and the Society runs 158 projects in 41 countries. That said, from a financial point of view, its zoos and aquarium dominate. Of its \$42.9 million in general operating expenditures in 1991/92, only 11.7% went to its international division. The International Wildlife Conservation Park, with a budget of \$21.2 million accounted for 40.9% of operating expenditures; the Aquarium for 10.4%.

13) Harry Clow, Deputy Controller of the Cook County Forest Preserve District. Personal communication.

14) Vivian S. Toy, "Privately managed zoos show their self-sufficiency," *The Detroit News*, 23 July 1992.

15) The Foundation Center, *The Foundation Grants Index 1993: A Cumulative Listing of Foundation Grants Reported in 1991* (New York: Foundation Center).

16) Toy.

17) William E. Schmidt, "\$1.85 Million From Kuwaiti Emir Saves London Zoo, for Now," *The New York Times*, 25 June 1992.

18) The Foundation Center.

19) Environmental Data Research Institute, *Environmental Grantmaking Foundations: 1992 Directory* (Rochester, NY: Environmental Data Research Institute, 1992).

20) Bohdanh Romaniuk, ed., *Corporate and Foundation Grants 1992: A Comprehensive Listing of More than 95,000 Recent Grants to Nonprofit Organizations in the United States* (Rockville, MD: The Taft Group, 1992).

RESTORE: The North Woods

POB 440, CONCORD, MASSACHUSETTS 01742, (508) 287-0320.

I wish to speak a word for Nature, for absolute freedom and wildness, as contrasted with a freedom and culture merely civil—to regard man as an inhabitant, or a part and parcel of Nature, rather than a member of society.

—Henry David Thoreau, *Walking* (1862)

FROM FOREST PRIMEVAL TO THE “WORKING LANDSCAPE”

The North Woods is one of the world's great forests, stretching from the Atlantic Coast to the Great Plains, and from Lake Superior to the Central Appalachian Highlands. This forest is where the evergreen softwood forests to the north meet the deciduous hardwood forests to the south. Over the ten thousand years since the last ice age, a unique ecological region—or ecoregion—has evolved here, with a combination of ecosystems, climate, landforms, and soils that exists nowhere else on Earth.

A hundred centuries of evolution created the North Woods, but four short centuries of careless exploitation have almost ruined it. The primitive technology of earlier days left forest ecosystems essentially natural. Today, the exploiters replace natural ecosystems with sterile fiber farms, vacation homes, and utility corridors. In the tradition of George Orwell's *1984*, they call their handiwork the “working landscape.”

The giant forest products and mining companies, real-estate speculators, and misguided government agencies that control the “working landscape” tell the rest of us that things could be worse. RESTORE: The North Woods insists that we can and must do better.

RESTORE: THE NORTH WOODS

RESTORE: The North Woods is a non-profit, grassroots organization based in Concord, Massachusetts. This is where the first shots of the American Revolution were fired, and the home of Henry David Thoreau, who revolutionized the way we think of nature. Our purpose—to **restore, preserve, and defend the natural ecological integrity of the North Woods ecoregion of the United States and Canada through public awareness and citizen activism**—carries on this revolutionary tradition.

RESTORE: The North Woods was founded in response to the accelerating destruction of the natural and social integrity of the North Woods. To halt and reverse it will require:

- **recognition of the North Woods as a whole**—public awareness of the global importance of this unique ecoregion and international cooperation to restore and preserve it;

- **expansion of public land ownership**—public acquisition of a significant portion of the ecoregion to permanently protect ecological and social values;

- **restoration of natural systems and processes**—a North Woods nature reserve system, recovery of degraded ecosystems, and restoration of extirpated species;

- **accountable government**—government that restores and preserves public lands and waters, protects the public from irresponsible private interests, and provides leadership for a sustainable society;

- **sustainable human communities**—a way of life that preserves natural systems, protects air and water, and demands only what the earth can sustainably provide.

Although RESTORE: The North Woods is a new organization, our staff and directors are seasoned veterans. We do not duplicate the work of other groups, but address critical issues that have been getting little or no attention. Our focus is the North Woods as a whole, because nature does not recognize arbitrary political boundaries. Instead of merely “saving” scattered patches or “conserving” damaged landscapes, we promote full ecological restoration. Rather than being limited by what is supposedly “politically realistic,” we are working to create a new reality.

A NEW VISION FOR THE NORTH WOODS

RESTORE: The North Woods has a vision of the North Woods as it once was and can be again. We see a restored landscape, where towering White Pines preside over vast ancient forests; Gray Wolf and Caribou, Cougar and Wapiti roam the wilderness in the timeless contest between predator and prey; and salmon, sturgeon, and grayling spawn in free-flowing rivers. We envision the return of a diverse, native forest that is the summer home for countless tropical birds, an immense reservoir of fresh water, a natural recycler of air, and a storehouse for carbon.

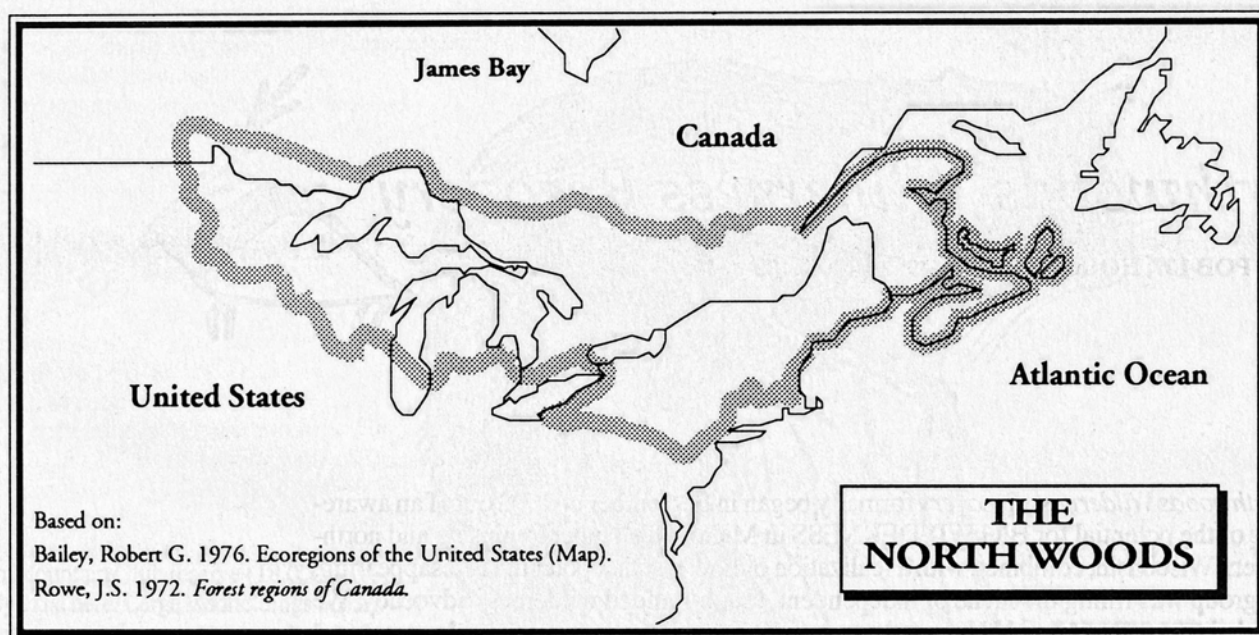
The North Woods offers one of the best opportunities in the world to restore and preserve the full native diversity of species, ecosystems, and processes on an ecoregional scale. But time is running out. If we do not act now, we will never have another chance.

CURRENT RESTORE PROJECTS

Most of the current RESTORE: The North Woods projects focus on the Northern Forest ecosystem of Maine, New Hampshire, Vermont, and New York. We are now expanding our scope to fill unmet needs in the rest of the North Woods.

NORTH WOODS NETWORK

RESTORE: The North Woods is working to build a North Woods Network that spans the ecoregion. We are reaching out to groups and individuals, particularly in the Upper Great Lakes and Canada. We plan to hold several regional workshops, and to follow up with a North Woods convention that brings together people from across the ecoregion.



PROPOSED WILDLANDS NATIONAL PARK AND PRESERVE

The state of Maine contains the largest unprotected blocks of intact forest land in the North Woods. They are mostly within the 10.5-million-acre "Wildlands," which have no local government, a tiny population, and few public roads. Over 90 percent of the land is controlled by a few large timber management or paper companies which are devastating the forest. Much of the region is either for sale or likely to be on the market in the near future.

RESTORE: The North Woods advocates the public acquisition and restoration of a new Wildlands National Park and Preserve (WNPP) encompassing several million acres in north-central Maine. We are surveying the Wildlands, assessing where the most ecologically intact lands remain, and identifying adjacent degraded lands that must be restored.

RECYCLING FOR JOBS AND HEALTHY FORESTS

Paper production is the single greatest cause of destruction in the North Woods. The forest is being stripped bare to extract wood fiber, air and water are being polluted, and staggering amounts of energy are being used.

Shifting to ecologically sustainable sources will require modification of existing machinery, installation of energy-efficient technologies, reinvigoration of rail links, and expansion of municipal recycling programs. Government will need to provide technical assistance, economic incentives, and funds to purchase industry lands for restoration. **RESTORE:** The North Woods is initiating a study to assess conversion options.

RESTORING THE WOLF TO THE MAINE WILDLANDS

Hunting and habitat destruction drove the Eastern Timber Wolf out of Maine by the late 1800s. In its recovery plan, the U.S. Fish and

Wildlife Service (FWS) has identified the Wildlands of northern Maine as a potential wolf recovery area. Yet no action has been taken—the state fish and wildlife agency has opposed recovery, while the public has not been informed of the issue.

RESTORE: The North Woods supports a study of habitat suitability for restoring the Timber Wolf to Maine, to be done by the FWS in cooperation with the State of Maine. The study should be done with the full involvement of private landowners, colleges and universities, and the public. We are building an activist list in anticipation of a public information campaign.

WHITE MOUNTAIN WATCH

The White Mountain National Forest (WMNF) in New Hampshire is one of the better-managed forests in the National Forest System, but there are still significant problems. **RESTORE:** The North Woods is forming a White Mountains Network to focus on WMNF and adjacent areas. We are developing a long-term vision that includes major boundary expansions, an interconnected system of nature reserves, and a citizens' alternative for the next forest management plan revision, due for completion in 1996.

WHAT YOU CAN DO

RESTORE: The North Woods needs your help to make the vision a reality. Please become a member and add your name to our activist list. You will receive our newsletter and action alerts on critical North Woods issues. Regular memberships start at \$20.

RESTORE: The North Woods is incorporated in Massachusetts; tax-exempt (501(c)(3)) status is pending.

Contact Michael Kellett (Executive Director) or David Carle (Associate Executive Director) at: **RESTORE: The North Woods**, POB 440, Concord, Massachusetts 01742, (508) 287-0320.

—Michael Kellett

Northwoods Wilderness Recovery

POB 107, HOUGHTON, MI 49931, (906) 482-8364.



Northwoods Wilderness Recovery formally began in September of 1992 out of an awareness of the potential for BIG WILDERNESS in Michigan's Upper Peninsula and north-eastern Wisconsin, combined with a realization of how fast that potential is disappearing. No group was filling the niche of independent, tough-minded wilderness advocacy. We decided to occupy it, guided by one long-term vision: allow the Northwoods ecosystem to return to its original ecological integrity.



Three hundred years ago, one of the most magnificent forested ecosystems in North America flourished in this region. Amidst a vast mosaic of majestic White Pine, Eastern Hemlock, White Spruce, Balsam Fir, and mixed hardwoods, Timber Wolves and Mountain Lions preyed upon Woodland Caribou. A diversity of uniquely adapted species of deep-woods flora, many of which are now endangered or extinct, was sustained by the delicate and complex forest-floor habitat found only in old-growth forest.

Most of this great forest was still intact 150 years ago, and as recently as 50 years ago, 25 percent of the forest in Michigan's Upper Peninsula was virgin old growth. Now, only small fragments of this forest remain, primarily in areas that were either private reserves or inaccessible to logging due to rough terrain. Most of these remnants are unprotected and seriously threatened by current and proposed timber harvest and land development schemes.

Increasing land development, logging, road-building, and off-road-vehicle use put numerous biotic communities in jeopardy. Surveys of sensitive plant and animal species are showing downward trends in populations and geographic ranges, with corresponding increases in edge-loving weedy species. White-tailed Deer densities are ten to fifteen times what is ecologically desirable. Much of this scenario is the result of a twenty year assault on the forest by the pulp and paper industry.

Much of the remaining old-growth forest in Michigan's Upper Peninsula is in the Michigamme Highlands, a largely undeveloped region in northern Marquette and Baraga Counties. This is a place where large-scale wilderness protection can recover some of the ecological complexity and wild grandeur of the original forest. The federally designated McCormick Wilderness (16,850 acres), the state designated Craig Lake Wilderness Park (7600 acres), and the private



Huron Mountain Club reserve (18,000 acres) already exist here. Large landholdings bordering these protected areas are currently for sale. Establishment of a 200,000-plus acre reserve with a full complement of ecological and evolutionary processes is possible if we act soon.

To realize our goal of large-scale wilderness in Michigan's Upper Peninsula and northeastern Wisconsin, Northwoods Wilderness Recovery is pursuing the following strategies:

- Research the locations and extent of old-growth forest and critical habitat essential to natural diversity in the Upper Peninsula and northeastern Wisconsin. Beginning with the Michigamme Highlands, map these areas and demonstrate how they can be incorporated into a network of wilderness reserves with connecting corridors for wildlife migration and genetic exchange.
- Conduct biological status reviews of threatened and endangered species and critical habitats, using teams of professional biologists and grassroots activists. Determine which habitat types are in serious decline and what is necessary for their restoration.
- Require government land agencies to uphold all federal and state laws to protect these species and habitats such as the Endangered Species Act, National Environmental Policy Act, National Forest Management Act, and the Michigan Environmental Protection Act. Litigate when necessary.
- Prevent further exploitation of biotic communities in the Michigamme Highlands. Get as much land as possible in this area into an interim protection program for eventual incorporation into a large, publicly sanctioned wilderness reserve.

- Develop an educational program, including a slide show and literature, demonstrating the effects of forestry practices on natural diversity, and the need for large wilderness reserves. We are near completion of this program.

- Monitor timber sales, road construction, and other management activities in State and National Forests. File appeals of management proposals when necessary to prevent further decline of indigenous species.

- Defend the few designated Wilderness Areas in the UP and northeastern Wisconsin.

- Coordinate these efforts with other grassroots wilderness organizations throughout the greater Northwoods, from Maine to Minnesota, as part of a comprehensive program for wilderness recovery.

We are coordinating our efforts with those of The Wildlands Project (North American Wilderness Recovery Strategy), RESTORE: The North Woods, Superior Wilderness Action Network (SWAN), and the Biodiversity Legal Foundation.

Northwoods Wilderness Recovery is incorporated as a nonprofit directorship (non-membership), and will be supported by

donations from individuals and by foundation grants. We have launched a three-year fundraising effort with \$50,000 as our goal for 1993, \$60,000 for 1994, and \$70,000 for 1995. This level of funding will allow us to take advantage of current opportunities for ecological preservation before they are lost.

Donations are needed. Contributors will receive periodic updates of our activities, copies of our educational literature, and invitations to guided tours through some of the areas we are trying to protect. Quarterly financial reports and an annual audit will be provided if requested. We recently received 501(c)(3) tax-exempt status from the IRS, so all contributions are tax deductible. If you would like further information, please write or call Kraig Klunness at POB 107, Houghton, MI 49931, (906) 482-8364 or Doug Cornett at (906) 228-4518.

—Kraig Klunness, Executive Director;
Doug Cornett, Research Director

Temperate Forests Gain a Network

by Orin Langelle

Activists from the Southern and Northern hemispheres met in November 1992, in Tasmania, Australia, for the First International Temperate Forest Conference and the subsequent Native Forest Network Inaugural Strategy Meeting. This was the first time activists had met internationally to discuss how to counter the multinational corporate cancer that is metastasizing into native forests globally.

FIRST INTERNATIONAL TEMPERATE FOREST CONFERENCE

Deloraine, Tasmania—The FITFC was attended by over 200 representatives of forest protection groups world-wide. British botanist, David Bellamy was the keynote speaker. Representatives and the media heard speakers from both hemispheres condemn multinational corporations' profit-before-planet practices, and call for a temperate forest action plan. The attendees also formally recognized the rights to existence of all species, ecosystems, and indigenous peoples.

The day prior to the FITFC, an international contingent attended the unofficial opening of the Great Western Tiers National Park. Professor Bellamy unveiled a sign and declared the 27,800 hectare area an inviolable International Park for all time and nominated the Great Western Tiers for World Heritage status. The Department of Parks, Wildlife and Heritage, in its report on the optimal boundaries for the World Heritage Site, recommends most of the proposed National Park be included. The Tasmanian government continues to ignore this recommendation, but activists have publicly stated they will "continue to work non-violently" to protect the Great Western Tiers.

Before the conference, it was decided that an International Temperate Forest Conference would occur every two years. The Second International is planned for 1994 somewhere in North America's Wild Rockies. A North American Continental Temperate Forest Conference is scheduled for November of this year in Vermont. It is hoped that other national and regional conferences—in Chile, Australia, Europe—will coincide with the North American Continental Conference in November.

NATIVE FOREST NETWORK INAUGURAL STRATEGY MEETING

Jackeys Marsh, Tasmania—Immediately following the First International Temperate Forest Conference, about 30 forest activists from both hemispheres met in the Jackeys Marsh Community Centre for the Native Forest Network (NFN) Inaugural Strategy Meeting. Participants in the three day session braved torrential rain and leeches to start a global network to foster grassroots activism.

NFN SHUTS DOWN FORESTRY COMMISSION TASMANIA HEADQUARTERS

DEVONPORT, TASMANIA—The Native Forest Network's first international action stopped business as usual in the Devonport office of the Forestry Commission Tasmania (FCTAS) on 24 November 1992. NFN chose FCTAS as a target due to the commission's failure to stop the logging on the Gog Range near Deloraine, Tasmania, and to protect *Astacopsis gouldii*, the world's largest freshwater crayfish and a recognized IUCN threatened species.

Activists dropped banners from the roof of FCTAS's regional headquarters, chained themselves to doors to block access, and dumped woodchips to show their outrage at FCTAS's blatant disregard of the destruction of *Astacopsis* habitat and woodchip exportation to foreign markets at the expense of the Gog. NFN held a press conference at the Deloraine Environment Centre, where a local Gog resident presented to the media "Albert," an *Astacopsis* whose species is endangered due to the siltation caused by logging on the Gog.

—Orin Langelle

Despite two mysterious computer malfunctions, those attending produced the following description: "NFN is a global, autonomous collective of forest activists, conservation biologists, and non-governmental organizations. It functions on a consensus basis and is non-violent, non-hierarchical and non-patriarchal. Furthermore, NFN is non-discriminatory on grounds of race, culture or species."

The NFN mission was identified: "To protect the Earth's remaining Native Forests, be they temperate or otherwise, to ensure they can survive, flourish and maintain their evolutionary potential." The three goals of the NFN are 1) to ensure the maintenance of biodiversity and ecological integrity; 2) to recognize the rights of indigenous people and forest dwellers and to ensure that cultural values of ecosystems are identified and protected; and 3) to ensure the maintenance of ecological productivity of natural and modified ecosystems for the benefit of all species including humans.

NFN's decentralized structure provides a global umbrella for the forest protection movement under which grassroots activists can unite, while still remaining autonomous, and network with other groups to develop profiles on the governments, multinational corporations and agencies threatening forests around the world. NFN also provides the opportunity for activists to demonstrate international solidarity. NFN will help provide local, regional, national and international campaign coordination as needed.

NFN identified several key forest campaigns to work on in 1993. The international hotspots include: 1) Tasmania; 2) East Gippsland—Victoria, Australia; 3) Chile; 4) Pacific Northwest—northern California, Oregon, Washington, coastal British Columbia, Alaska; 5) Wild Rockies—Montana, Idaho, Wyoming, Alberta, inland British Columbia; 6) Northeast—New York, Vermont, New Hampshire, Maine; 7) James Bay—Quebec; and 8) Siberia. Also discussed was the targeting of certain corporations for direct action campaigns to inspire consumer boycotts.

NFN's newsletter, *Native Forest News* will be produced quarterly out of Tasmania. In order to facilitate better communication with activists in Spanish-speaking areas, the newsletter will be translated into Spanish. A North American NFN Strategy Meeting will take place immediately after the North American Continental Temperate Forest Conference in Vermont this November.

To join NFN please contact: NFN, Suzanne Pardee, POB 60164, Seattle, WA 98160 (206)542-1356; NFN, Jake Jagoff/Randall Restless, POB 6151, Bozeman, MT 59715 (406)585-9211; NFN, Orin Langelles, POB 57, Burlington, VT 05402 (802)658-2403; or NFN, Tim Cadman, 112 Emu Bay Road, Deloraine, Tasmania 7304 Australia (003)622 713.

September

I keep a photograph
in my desk, Mount
Katahdin. I walk thru
spruce to an erratic
boulder big as a house.
I want to live in that
house, not in my desk.
And teach glaciers to walk
in my door yard.

Who listens
to a hole in the ice?

The one who follows caribou
in his dreams.

Who looks in the scat
for tiny teeth?

The book looks like a finch.

I give you
a purple thistle.

I have snowshoes instead of curtains.

I'll poach,
build fires in the rain
and never live in a house.

—Peter Gurnis



The Mitigation Scam

by John Perry

A developer wants to destroy a Florida wetland. The law ostensibly prohibits it, but the law has a loophole: mitigation.

Mitigation planning and negotiating is a growing and profitable business in Florida. Developers' hired guns are using the strategy in other states, too.

Former President Bush promised "no net loss of wetlands." When is a loss not a net loss? When it's mitigated. When the developer creates—or promises to create—a new wetland equal or superior to the one destroyed.

It's easy to create a wetland. Just add water. If a dry area is kept wet for a time, it will be colonized by some wetland flora and fauna. For a while.

Half of Florida was once wetlands. Of these original wetlands, half have been destroyed. Some of those remaining are fragmented, hydrologically isolated, damaged by dredging and filling, polluted by drainage and dumping. State laws and county ordinances are supposed to guarantee the integrity of all that remain.

Florida's government should have slammed the door when mitigation was first proposed. By agreeing to review mitigation proposals, the State conceded that mitigation might work. It also accepted the burden of processing and evaluating hundreds of proposals. Underpaid and often inexperienced State employees are pitted against developers' well-paid engineers and lawyers. Seldom are mitigation proposals rejected outright. More often they are sent back for modification or added information. Another review follows. The file thickens. Rejecting an application invites lengthy appeals and political pressures.

The performance record of mitigation in Florida is shabby. An investigation in 13 counties by the Inspector General of the Department of Environmental Regulation found these outcomes:

- Of 100 permitted mitigation projects, mitigation had been undertaken on only 40.
- 23 of the 40 projects were located where present or anticipated surrounding land use will render them ecologically worthless.
- 25 of the 40 projects could not maintain necessary water levels and hydroperiods.
- Colonization of undesirable plant species was common, even where permits required their removal. Monitoring of 39 was required by their permits, but only 15 had adequate monitoring and 15 had none.
- 30 of the mitigation projects received untreated stormwater discharges from parking lots, industrial sites, residential areas, and citrus groves.

Florida has some of the nation's best environmental laws and some of the weakest enforcement. The legislature skimps on funds for field personnel, experts, and lawyers. Relatively few violations are discovered. If they are, penalties are usually trifling.

With respect to mitigation, this hardly matters. Long-term outcomes would be little better even with vigorous enforcement.

Water must be obtained from elsewhere, usually by building a canal, pipeline, or dam, thus altering the hydrology of another area. Mitigators may introduce appropriate species of plants, even bring soil removed from other wetlands. The result soon looks natural. The new wetland attracts water striders, dragonflies, ducks, wading birds, and reptiles.

Natural systems, however, have evolved over centuries or millennia. Each is a complex of hydrology, microclimate, terrain, soil chemistry, microorganisms, plants, and animals—interacting and interdependent.

The crucial fact is that an artificial wetland must be managed. Natural wetlands depend on wet and dry cycles. Without management, an artificial wetland will often have too little water or too much. Some projects require that valves or gates be opened and closed to mimic natural cycles. Without maintenance, canals become blocked by plants and silt. Earthen dams wash out.

Without permanent maintenance a mitigating wetland will gradually degrade. The State can't provide perpetual oversight, nor can permit conditions be enforced in perpetuity. Developers sell and move on.

State approval of mitigation assures further loss of wetlands. The performance record should persuade the State to close the door.

RESTORATION

Restoring a former wetland is highly desirable. If a site has not been too greatly altered, restoration may be as simple as backfilling drainage ditches or removing obstacles to water flow.

The largest-scale restoration being undertaken in Florida is the Kissimmee River. In its natural state the Kissimmee meandered slowly from near Orlando to Lake Okeechobee. Its flood plain was two to three miles wide. Oxbows changed with every flood. The extensive wetlands were habitat for a rich diversity of flora and fauna.

Between 1961 and 1971, in the name of flood control, the U. S. Army Corps of Engineers dug a ditch 200 feet wide from Lake Kissimmee to Lake Okeechobee. The 52-mile-long ditch, with dams and locks, dried 98 miles of river and 35,000 acres of floodplain. The result was an environmental disaster. Almost everyone, including the Corps, agrees the Kissimmee must be restored. Congress has authorized it and provided some of the funds.

As an experiment, water was diverted back into 12 miles of old oxbows. The trial was a great success. One would think the river had never left. Now, as funds are available, the ditch will be backfilled.

Many smaller restorations have been completed or planned. The State, several counties, The Nature Conservancy, and other entities are joined in the nation's largest state-wide program to buy and preserve

ecologically significant land. Florida's Preservation 2000 program is intended to provide \$300 million per year for ten years for land purchases.

Former wetlands are being restored on many sites. Florida's State Parks have an ecological mandate: "State Park lands are managed to appear as they did when the first Europeans arrived."

All this is on public land. No law requires restoration of former wetlands on private land.* Incentives to do so are needed.

LAND EXCHANGES

The Walt Disney organization recently sought a permit to destroy several small wetlands on its property. In exchange, Disney offered to buy and preserve the Walker Ranch, an 8500-acre property high on the State's acquisition wish list that includes extensive wetlands. The owners wanted to sell; developers were eager to buy; and the State lacked purchase money.

Environmentalists were skeptical. So were State agencies. The Nature Conservancy was instrumental in fashioning a deal that seems to please everyone. Disney will buy the ranch and pay for restoration of its natural ecosystems. It will be transferred to public ownership in increments.

MAKE A DEAL

With overwhelming evidence of failures, the State can't justify issuing more mitigation permits. Urged to stop, officials respond that an absolute prohibition would impose real hardship on some landowners. Some protected wetlands are so degraded as to have little ecological value. A narrow, irregularly-shaped small wetland may prevent access to a large site.

Mitigation isn't the answer, for it means exchanging a natural wetland for an artificial one that won't last. The developer who takes this route can expect increasing difficulties and delays.

Landowners and developers should consider an alternative: restoring a natural wetland. They could offer proposals that would yield a net gain in permanent wetland acreage.

Perhaps the landowner's site has a former wetland that could be restored. If not, he/she could buy one!

Buying a former wetland, providing for its restoration, and transferring it to public ownership would save the landowner time and frustration, perhaps even money.

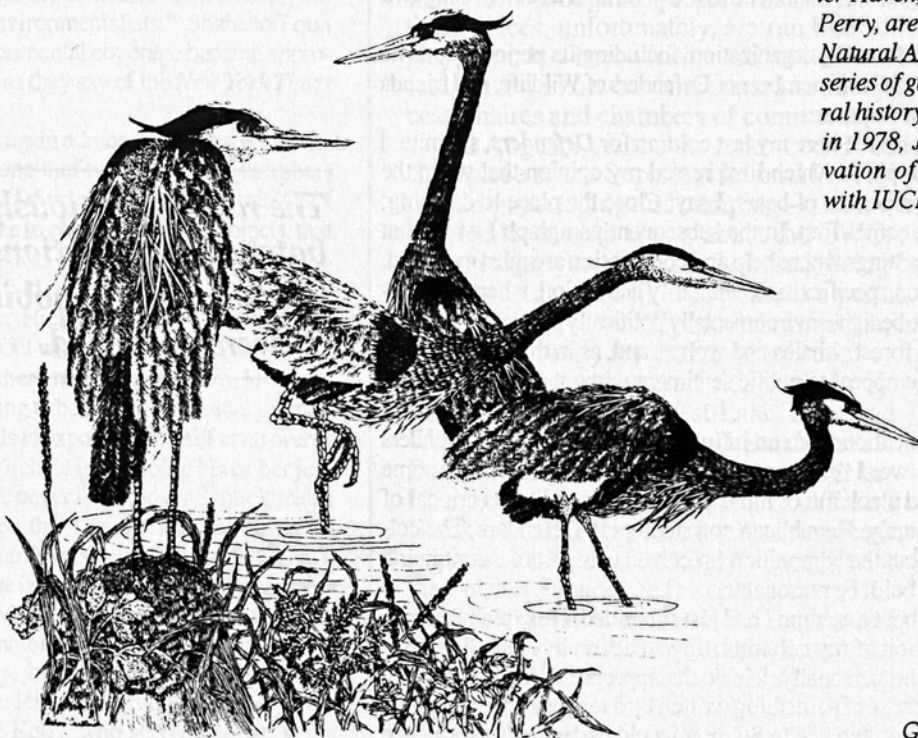
The landowner would become an ally in Florida's effort to save and restore its natural areas. About 2 million acres of privately-owned land are candidates for public purchase, restoration, and preservation. Large and small tracts are scattered throughout the state. Some are habitats for rare or endangered species. Some are needed for watershed protection. Even with Preservation 2000 funding, State, county, and local governments can't buy them all. Already many have been lost to development.

The landowner need not search for a suitable site. That's been done. State agencies have studied many sites. Often they know which owners are willing to sell. A State agency or The Nature Conservancy might do the negotiating.

Why buy land and give it away? With tax breaks and other advantages, the landowner may come out ahead.

And it's nice to be a hero instead of a villain!

John Perry (116 South Lake Florence Drive, Winter Haven, FL 33884) and his wife, Jane Greverus Perry, are authors of The Sierra Club Guide to the Natural Areas of Florida, six other volumes in that series of guides, and 15 other books, chiefly on natural history and ecology. Prior to moving to Florida in 1978, John was Assistant Director for Conservation of the National Zoological park, working with IUCN on overseas wildlife conservation.



Great Blue Herons (Ardea herodias)

* Mining companies are sometimes allowed to destroy wetlands if they promise to restore them after mining ends.

In Defense of Wildlife and Open Expression

Wild Earth editor's note: We present here, as words of caution, the letter as well as the column of Michael Frome concerning his recent dismissal from Defenders. This dismissal is both sad and predictable. Michael Frome—whom Dave Foreman once described as America's best environmental journalist—has a history of honorable discharges: Several periodicals have terminated Frome's tenure with them after he dared write truths that rocked the establishment. Defenders of Wildlife members should paddle hard to free that organization from the mainstream. —JD

by Michael Frome, December 1992

In Late October 1992 James Deane, editor of *Defenders*, telephoned to dismiss me as columnist of the magazine to which I had contributed without interruption for more than seventeen years.

Deane said my dismissal was ordered by Rodger Schlickeisen, the new president and executive director of Defenders of Wildlife, who had decided to restructure the publication, with himself in complete charge of editorial content. Deane explained that Schlickeisen does not want expression of independent ideas in the magazine, and that he saw my column as comprising two pages which he personally could not control.

I do not dispute Schlickeisen's right to run his organization, including its periodical, as he wishes. However, various colleagues in journalism, members of Defenders of Wildlife, and friends have asked me questions that merit an open response.

I believe it appropriate, therefore, to provide here my last column for *Defenders*, submitted but not published. Note the second paragraph, in which I expressed my opinion that when the issue arises of clearing a public area of campers or of bears, I say: Close the place to camping; safeguarding bears, or any native species, comes first. In the subsequent paragraph I wrote that wildlife doesn't get much help in the very settings where help and compassion are most expected.

That is the point. I endeavor to focus on specifics, accountability and action, where an organization like Defenders evidently prefers the benign, environmentally politically correct approaches associated with biodiversity, Amazon rain forest, whales and wolves and, as in the current issue, "The Leopold Legacy"—catchy issues that appeal to public sentiment without offending potential contributors.

In 1990 Deane told me of a communication from an influential member of the Defenders board of directors decrying the use of the word "environmentalist" because it might turn some people away. Several years ago he rejected a column of mine because, he said, it was critical of Republicans in Congress and might discourage Republican contributors to Defenders. The column was about politics, not Republicans, but the admonition I received was part of a continuing message: It's okay to be bold, but not too bold; be reasonable.

In December 1990 Deane called me about a column I had just submitted. He explained that a Defenders lobbyist was upset about a section of my column citing an action by Neal Sigmon, a congressional committee staff member, who personally deleted the appropriation for a National Park Service house organ, the *Courier*, because of something written by a ranger-reporter that he, Sigmon, didn't like. The lobbyist feared my reference to Sigmon would endanger her influence with the congressional subcommittee and I was asked to eliminate the reference in my column. I found the idea of political pandering very disturbing, but offered to compromise by omitting

***The rangers obviously
botched the injections; the
bears remained mobile, and
so were shot dead.***

The Last Column

Sigmon's name. Dean lectured me sternly, reminding me that *Defenders* is not a general circulation publication, but represents the special interests of Defenders of Wildlife — which to me is all the more reason to be wholly truthful. Writers and editors, particularly of environmental periodicals, need to shuck cosmetic coverage of tough issues and place responsibility wherever it may belong.

In 1991 I wrote a column that was rejected. It began with reference to the conformist and conservative character of institutions and professions, and to the penalties imposed on individuals who break ranks on issues of principle. I cited the harsh experiences of John Mumma, a regional forester of the U.S. Forest Service, when he tried to halt overcutting of public forests in Montana and northern Idaho, and of Philip Shabecoff, the environmental reporter of the *New York Times*, a pace-setter in his profession, who was taken off his beat and switched to cover the Internal Revenue Service because his editors considered him biased, "too close to environmentalists." Shabecoff quit and environmental coverage became appropriately — as they say of the *New York Times* — "gray."

I was again admonished. Deane told me on the phone that two influential members of the board disapproved of my work, that I was not free to choose my own subjects, that *Defenders* was the board members' magazine, that I had elicited criticism from Governor Walter Hickel over the column I had written about wildlife in Alaska. I wrote that of course there would be criticism — for anyone claiming to be an environmental journalist who fails to expose an issue of controversy and to stir debate is not doing his or her job.

I have never met Rodger Schlickheisen and confess that I never heard of him until his selection as president of *Defenders*. I have read that he is experienced in direct mail promotion and is a former administrative assistant to Senator Max Baucus of Montana. At *Defenders*, he succeeds as president Dr. Rupert Cutler, who served for three years, and Joyce Kelly, who served for two years before Cutler. I received only encouragement and support from them.

I was pleased at first when the ranger, C., phoned in June from Mesa Verde National Park in Colorado, on behalf of several colleagues who wanted to trust me with important information. I like to be trusted by caring personnel struggling to serve public principle in a bureaucracy driven by politics. But presently I felt saddened by the news, then downright angry as it settled in. I'm still upset at the very idea that in this day and age two innocent Black Bears should be shot to death for living in their space as God taught them.

That is what C. reported happened at Mesa Verde on June 18, 1992. That the bears wandered into a campground hardly makes them criminals. If the bears poached for food, it was because campers weren't sufficiently cautious or properly advised by the Park Service to keep supplies out of temptation's way. Besides, if it's a question of clearing an area of campers or bears, I say: Close the place to camping; safeguarding bears, or any native species, comes first.

Wildlife needs all the help it can get, and it doesn't get much in the very settings where help and compassion are most expected. After hearing from ranger C., I decided to ask questions. In due course I received a response from Robert Baker, regional director of the National Park Service. Once the two bears were observed in the campground, Baker wrote, it was decided to immobilize them with tranquilizing chemical injections. The rangers obviously botched the injections; the bears remained mobile, and so were shot dead. A subsequent investigation, according to Baker, concluded this horrible act was justified to prevent "an unacceptable risk to human safety and property."

I can't agree. Anyone going to a national park or wilderness or sanctuary for wild animals ought to prepare for risk and be properly advised to do so. Many of these places, unfortunately, are run like zoos, or entertainment centers, popcorn playgrounds where visitors are invited to observe wild animals in padded comfort. Thus visitors become snared in a loop serving the business interests of concessionaires and chambers of commerce.

In August I visited the renowned Boundary Waters Canoe Area Wilderness, showpiece of the Superior National Forest in northern Minnesota. I spent a week paddling, portaging and camping — and it was a shocking eye-opener. The Forest Service leadership crows about the BWCA as one of its "crown jewels," but I found it badly overused and abused, being loved to death in a recreational orgy. The Forest Service likes to point to a permit system, visitor quotas, and endless research, but I saw badly eroded campsites, traffic congestion at the portages, and scant opportunity for promised solitude.

A new report by the Friends of the Boundary Waters shows that too many fishing people overharvest Lake Trout and Walleye, that Walleyes and Small-mouth Bass stocked in lakes where they never before existed degrade native Lake Trout. Black Bears are forced into abnormal feeding habits and locations. Many loons leave their nests and produce fewer offspring. This may be true as well for Bald Eagles and Ospreys. On behalf of wildlife, visitor quotas to the BWCA need to be sharply reduced and rigorously enforced, but that calls for more courage to resist local business pressure than Forest Service officials thus far have shown.



The trouble is that what's good for business comes first. In fact, "What's Good for Business Has Been Good for the Park" was the title of an article by Russell Berry, superintendent of Voyageurs National Park, an area adjacent to the Boundary Waters, published in the *Courier*, the National Park Service house organ, in August 1987. That's a terrible notion: When business comes first, trouble for wildlife always follows close behind. Berry's focus was on tourism, complete with snowmobiling, the most alien activity yet sanctioned in a National Park. Berry was promoted to superintendent of Denali National Park in the wild heart of Alaska, where the tourism boom of the past thirty years has been accompanied by sharp wildlife declines.

Politics is a powerful influence. For instance, when Mike Hayden, the Bush administration Assistant Secretary of Interior in charge of parks and wildlife programs, recently went to see Voyageurs, he said he wanted to do something to help the resort owners with all their power boats and snowmobiles. So he came up with "a good compromise plan, a middle ground" for management; never mind protecting wolves and other wildlife in the snowmobilers' path. "People's recreational needs are changing," says Hayden. "That's why the multiple use concept is so important." National Parks were never meant for multiple use; their mandate is specific for preservation and protection. But political cronies in key posts in government don't know that, and don't want to know.

A few years ago, I visited Tanzania, in East Africa. While I saw extensive herds of wild animals, I was most deeply impressed by the simple yet lofty text of a manifesto President Julius Nyerere had issued in 1961, the year his country gained independence: "In accepting the trusteeship of our wildlife, we solemnly declare that we will do everything in our power

to make sure that our children's grandchildren will be able to enjoy this rich and precious heritage." Tanzania is still learning, but that struggling young country spends a greater portion of its income on wildlife protection than does the United States.

We need such a manifesto, a solemn declaration of trusteeship that with ethical right transcends all business and politics. I believe that people who care, who aren't on anybody's payroll, can make it happen. They *are* making it happen. Thanks to Elizabeth Hartwell, of Virginia, the Mason Neck National Wildlife Refuge was established twenty miles south of the nation's capital, for the protection of Bald Eagles. Thanks to Beulah Edmiston, of California, the Tule Elk, smallest of the Wapitis, was rescued from the brink of extinction and assured adequate habitat.

Thanks to Elizabeth Sizemore and Marcia Sullivan, leaders of the Mexican Wolf Coalition, their state of Texas is being pressed to support restoration of the Mexican Wolf in Big Bend National Park and adjacent Big Bend Ranch State Park, the area where the last wild wolves of Texas were recorded killed in 1970. As Elizabeth notes, if attitudes then were not of indiscriminate killing and total disregard of our natural heritage, the Texas Threatened and Endangered Species List of 1992 would not contain so many animal species (more than 200 in 1992).

Attitudes are different now. We are changing direction, learning the rights of other species and the responsibilities—and opportunities—of humankind. To have our children's grandchildren enjoy a rich and precious heritage should be the dream of the rangers in Mesa Verde National Park, and of the strangers who come to them to learn that the life of a bear is sacred life.



A Proposal For a Park Without Fences

by Bill McKibben

AS I write this, the first Adirondack snowfall of the year is starting to pile up outside the window, covering the orange and red and yellow leaves that have fallen in the last few glorious weeks. The fog plays on the nearest mountain, wisps covering then revealing the icy hemlocks. A Wild Turkey struts by the door. This flowery introduction should serve mainly as a caution: everything I have to say in this response to Paul Medeiros's "A Proposal for an Adirondack Primeval" (Special Issue on The Wildlands Project) is colored by the fact that I love my life here in these mountains and would be sorry to leave. I hope that my affection for this land—and for my neighbors—has not clouded my intellectual honesty completely, but I am sure there is a wispy fog of self-interest at times obscuring my vision.

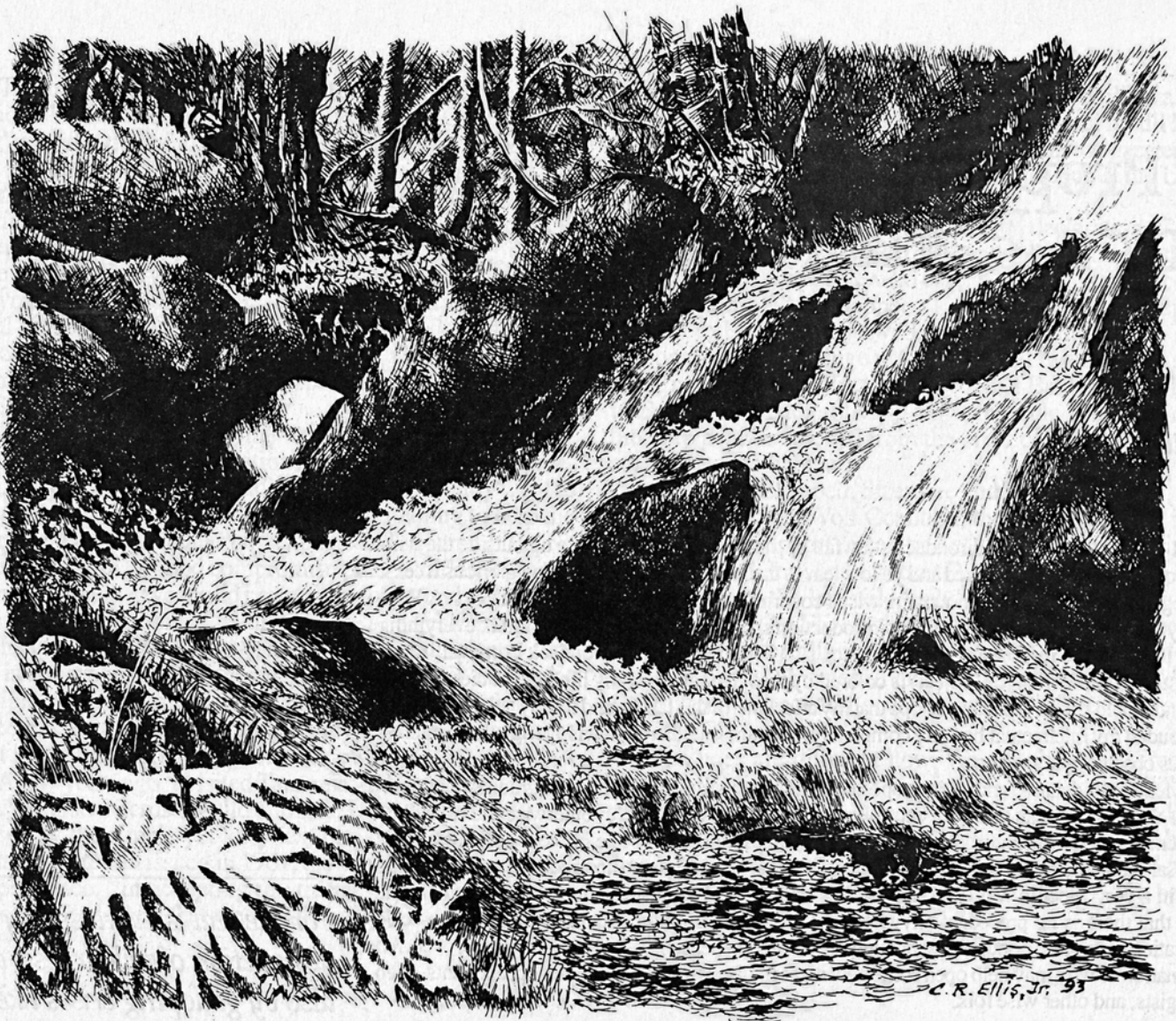
Medeiros's detailed and lucid proposal, whittled to its core, advocates the gradual depopulation of the Adirondacks and their return to as wild a state as possible; otherwise, he says, "the uniqueness of the Adirondacks will inevitably collapse on itself." The obvious response to his proposal would be to say that it is too radical, but that strikes me as incorrect. Instead, using the word in a very specific way, I would say it is unrealistic. Not just politically unrealistic, in the sense that there is no precedent anywhere outside the totalitarian countries for the large-scale evacuation of modern populations; but unrealistic in a deeper sense—a biological sense, even. An explanation of why may help open some new areas of discussion for wilderness proponents, deep ecologists, and other wise folk.

THE FALLACY OF THE FENCE

In the first issue of *Wild Earth*, I submitted a guest editorial arguing that wilderness advocates need to bear in mind the unique facts of the late twentieth century. We live in the first moment when there is no effective way to fence out human alterations. Always before our environmental depredations had some edge—the boundaries of our villages or of our cultivated areas. In an age of global atmospheric change, however, such edges no longer exist.

Consider, for example, an Adirondack Park walled off from all human traffic, forbidden even to the backpacker. Would such a park be walled off from human interference? No, because interference no longer requires presence. Take as an illustration global warming, surely the single most far-reaching environmental problem of our time. Even though the Adirondacks are currently not a source of much anthropogenic carbon dioxide, and under such a regime would not produce any, they would nonetheless suffer from its effects just as much as New York City—more, in fact, if current scientific predictions (that effects will be greater at higher latitudes) prove true. Some of the current computer simulations hold, for instance, that the Eastern Hemlock will not exist south of the Canadian border by late in the next century. Ontario scientists studying a series of ponds where temperature has risen three degrees Fahrenheit over the last few decades found changes that may presage problems for northern aquatic systems: Dramatically decreased stream flow and increased wind speed due to forest fire damage have conspired to reduce and even eliminate the coldwater pockets of the ponds, extirpating the fish species that require those temperatures. To anyone who knows the Adirondacks, the loss of the hemlock or the trout—not to mention the

For the real issue raised by our destruction of wilderness, and also by galloping crises like the greenhouse effect, is that we have yet, anywhere, to learn to live in and around nature without wrecking it.



River Otter (Lutra canadensis) by Bob Ellis

infinite cascade of other changes that would inevitably follow such losses—would be horrifying beyond any development pressure we've ever imagined. Vegetation zones move forty miles north with each degree Fahrenheit increase of temperature—there are zones at the top of Adirondack mountains that would simply cease to exist, and others that could not migrate quickly enough to keep up with the pace of temperature change.

Is this an argument to simply throw up one's hands and stop fighting for wilderness areas? It is not. In fact, the prospect of global warming and other global environmental changes make the need for large wilderness areas even more imperative, in order to provide migration corridors that may allow at least

a small exodus from this gathering inferno. That is why Mr. Medeiros's calls for the consolidation of existing wildernesses, and the extension of similar protection to other strategic areas, are so important.

But it simply will not work to concentrate human population in Glens Falls or Albany or Manhattan and pretend that the Adirondacks therefore are safe (a lesson, needless to say, as true in Nevada or New Guinea as in New York). The salvation of the Adirondack wilderness lies largely in changing the lifestyles of urban and suburban residents the world over. And that is why, in a roundabout way, I suspect there could be a higher value to this wilderness than draining it of its human inhabitants.

A SUITABLE BEAKER

Mr. Medeiros points out that the Adirondack Park is within a half day's drive of 70 million people, concluding correctly that this puts nearly unbearable pressure on the Park, a pressure that will only increase as the population grows. He is right to call for a ban on second-home construction. (In fact, if there is one immediate and politically realistic step every environmentalist should demand, it is the end of mortgage deductions for second homes in this country.) But he overlooks another possibility presented by that figure: the Adirondacks represent a beaker in which to conduct truly remarkable experiments, the results of which will be observable to millions of people, including the

world's most important policy makers.

For the real issue raised by our destruction of wilderness, and also by galloping crises like the greenhouse effect, is that we have yet, anywhere, to learn to live in and around nature without wrecking it. We have yet to learn to limit ourselves so that the rest of creation has a shot at its destiny. For the last century the Adirondacks have provided the bare beginnings of such an experiment—and they could provide much more.

In these mountains, for instance, people live at what seems to me a fairly decent density, though Medeiros is right to point out that population increase is always to be feared. We have an area the size of Vermont with slightly more than 100,000 year-round human residents. Towns are spread out and small—from North Creek, near where I live, it is half an hour's drive (or two hours uphill on a bike) to Indian Lake, and Indian Lake is no metropolis. Because of the wild character of the place, Moose are returning by themselves, and some people continue to swear that the Mountain Lion and the Gray Wolf are accompanying them. We can hope, anyway, and by providing larger core wildernesses we can help, too. In any event, the unique experiment in conservation that began with the establishment of the Park a century ago must be counted as much a success as a failure so far.

But the Adirondacks could be more of an example than they are. The population is poor, not only because of the cold and the poor soil that Medeiros mentions, but also because we live in colonial economies, working for the paper companies or the big developers. As Jamie Sayen has remarked, it is gorgeous to imagine instead an Adirondack Park where one person cuts down a tree and ten of his or her neighbors turn it into fine furniture or something else both useful and meaningful, something that can provide not only income but also esteem and morale and community. Wendell Berry mentions in his recent contribution to *Wild Earth* that there are many fewer examples of good work in the forests than in the fields. Perhaps such good work could become reality here, because of the strict laws protecting much of the forest.

The culture of the big cities and especially the suburbs is nearly hopeless in its material focus, and how could it be otherwise, for people live there surrounded only by the works of man. But here, and in other wild places, there is more chance of learning our real size in the universe—and of learning to glory in

that size. Gary Snyder remarks in his book *The Practice of the Wild* that we all need to become Native Americans. I take that to mean that we need to learn both to protect and to revel in our surroundings, and I agree—learning to co-exist with wildness in these mountains would be good for us, and good for the millions of people living nearby who could witness the results of the experiment. It means transforming our educational system here until it focuses relentlessly on what makes our area special. As Medeiros rightly points out, Adirondackers put up with a lot already because of their affections for the natural world.

More than anything else, because so much nature is in these mountains and so few people, they offer a chance to nurture the idea that there should be limits to how humans live. This question of limits—which has important implications not only for property use but for how we transport ourselves, how many children we bear, what we eat, how much we consume—is the question of the next century. The current dichotomy, where wilderness is only imaginable behind a fence, encourages the idea that in the “normal” human world we can do as we please. An Adirondacks where people adjust their expectations so as to make their living in the same place, as do all the other species that belong here—that would be a powerful lesson with wide application.

WHO MIGHT BE WATCHING?

To me, one of the most promising developments in recent conservation history is the identification of the Northern Forest, the woods stretching at least from Maine to New York, as an area of special interest. Conservation groups—in many ways led by Preserve Appalachian Wilderness (PAW)—have begun the mammoth task of restoring this immense tract. Their most hopeful argument in some ways has been the Adirondacks. Our forests, too, were once cleared on an industrial scale like the Bowater and International Paper lands of Maine; given legislative protection, they have rebounded, perhaps the greatest example of ecological restoration in the entire planet's history.

Convincing the people of Maine and New Hampshire and Vermont—and someday perhaps Quebec, Ontario, New Brunswick and Michigan—that there is much to be learned from the Adirondacks is a delicate business, one for which rhetoric cannot fully supplant persuasion. A healthy Adirondack society, with a high quality of life for its residents, would be a strong piece of evidence for conservation

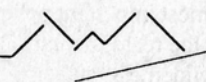
activists. I agree with Medeiros that the Adirondacks cannot sustain much more development or population; I fear that any attempt to drain it of its current population and perhaps even any strident advocacy of that position will only confirm the worst fears of the people of surrounding regions and cause them to dig in their heels, aborting his experiment before it can begin.

Last summer, as part of the celebration of the Park's centennial, I took part in a week-long recreation of the “philosopher's camp” that first drew Emerson, Lowell, and Agassiz to these mountains. A group of us tried over that week to figure out ways to make the Park both more wild and more liveable, and among our number were a pair of marvelous biologists from Wildlife Conservation International. Most of their work had been in Africa where, among other things, they had set up the system for preserving the Mountain Gorilla in Rwanda after Dian Fossey's death. They stressed that the international effort to develop Biosphere Reserves is only a decade old. While such reserves are clearly crucial, since the creation of parks alone won't work in areas where need and custom dictate encroachment, they are also proving enormously difficult to implement, chiefly because so few examples exist. The Adirondack Park, they said, is a unique resource simply because it provides a century's worth of experience in trying to integrate people and nature. And for all its problems, they added, it seems to have met with more success than failure.

Their testimony helped us to see this place with new eyes, as part not only of the eastern United States but of the planet. I do not wish to see an end to radicalism; I hope for a deeper radicalism that springs from actual reality, not some imagined Eden. We live in a world that will for the foreseeable future be dominated by landscapes shared by people and the rest of creation; we live in a world where global environmental damage threatens every square inch of the terrestrial surface. In that world, we desperately need help creating the real and profound changes in human behavior that will actually hold some hope for conservation, in the Adirondacks and elsewhere. I hope that readers will turn some part of their attention to imagining those changes in human behavior, and to suggesting how they might come about.

Bill McKibben is an Adirondack resident, advocate, and writer. He is the author of The End of Nature and The Age of Missing Information.

Some Comments on a Mid-range Vision...



2020 Vision, Fulfilling the Promise of the Adirondack Park, is a series of reports by the Adirondack Council, setting forth a vision for New York's 6 million acre state park. The aim of the proposals, in three volumes, is to create a healthy environment of integrated human land use and wildlife conservation within the Adirondack Park.

Volume I (1988), titled Biological Diversity: Saving all the Pieces, begins with a brief description of the Park "today" and a vision for "tomorrow." The Park's biomes, vegetative cover types, and natural communities are described in detail and illustrated by maps and graphs. The private and public lands within the Park are then compared with each of the above biological categories. These comparisons show how well the various biological zones are represented in the Forest Preserve.

The second half of Volume I is divided into three sections:

- 1) a description of 14 sites proposed for acquisition in order to secure natural communities not represented in the present Forest Preserve;
- 2) a description of 32 sites proposed for purchase to preserve rare or unusually rich communities;
- 3) a discussion of reintroducing extirpated species to their original habitat.

The Adirondack Council is leading the protection effort in the Park by proposing land acquisitions, but the proposals are conservative. The entire Park is 5,927,600 acres. The state owns 2,575,000 acres (1,038,874 of this is classified as Wilderness) and 3,352,600 acres are privately owned. The total acreage proposed by the 2020 report for acquisition or conservation easements is 218,420—only 3.7% of the entire Park, 6.5% of the private land. Adirondack wildlife can not continue to flourish unless the islands of wilderness are greatly expanded. The Adirondack Council has taken the first step in this direction, but needs to think BIG now.

The final section, on the reintroduction of extirpated species, is a mere page calling for more research. The Council states that for extirpated species such as

Cougar and Gray Wolf to survive, road density must be lower than it is now. Studies in the Midwest suggest that wolves will only repopulate areas where road density is less than .93 mile per square mile (p.47). The Council should not only call for the preservation of the ecologically unique sites it highlights, but for the immediate acquisition and protection of large contiguous wild areas. Rather than suggesting the closure of roads, which would allow larger wild areas, the report maneuvers around roads as if they are untouchable.

Volume II (1990), of the 2020 Report, Completing The Adirondack Wilderness System, focuses on expanding Wilderness acreage from 1,038,874 to 1,659,694 by reclassifying 194,308 acres of Wild Forest as Wilderness and acquiring 407,906 acres. Among the 20 new Wilderness Areas would be the Bob Marshall Great Wilderness, Boreal Wilderness, and Giant Mountain Wilderness.

Again, the Council provides essential, original data, yet is too compromising in certain areas. For example, in the proposed expansion of Ha-de-ron-dah Wilderness, Big Otter Lake is excluded "in the spirit of" a previous compromise approved by the Governor. Adirondack conservationists need to be more aggressive in the spirit of Wilderness, not compromise!

The Council calls for closure of some snowmobile trails to consolidate Wilderness Areas, but suggests their replacement with new snowmobile trails in other areas. To create a model environment where humans live together with wilderness, people will have to break some nasty habits, such as snowmobiling. Snowmobiling should be banned from the Park; it is incompatible with wilderness.

Numerous boundaries of the proposed Wilderness Areas in Volume II are roads. The report refers to these roads/boundaries as ecologically sound (NY 30, NY 8, p. 34). Roads, ecologically sound?! The report stresses access to Wilderness Areas. Jeep "trails" and roads should not be the means of access. Most areas should be kept in their natural state, while others can be left easily accessible by maintaining wide and smooth foot trails. Again, closing of roads, especially those not heavily used, should be considered for the benefit of wildlife.

The third volume of the 2020 series, Realizing the Recreational Potential of Adirondack Wild Forests, identifies 255,190 acres of private land in 33 parcels that should be purchased by the state and added to the Wild Forest. As with the previous reports, part III provides readers with valuable information on the natural areas in the Park. Still disappointing to wildland proponents is the anthropocentric focus: access to wilderness, acceptance of roads, creation of snowmobile trails, and modest, unconnected acquisitions.

I highly recommend the 2020 series for any person interested in the Adirondack Park. It is the most up to date inventory and description of the Park's natural areas, and provides a hopeful vision for the year 2020. Unfortunately, only a small portion of the acreage proposed has actually been acquired since the reports were written; and the future of the Park looks troubled due to the lack of funding by the state, and the blockage of positive legislation by the State Senate. The Adirondack Council has done the necessary research and made an ecologically informed proposal. Now concerned people must work to make the good ideas reality.

WHAT YOU CAN DO:

1. Keep updated on Park politics by joining The Adirondack Council, Box D-2, Elizabethtown, NY 12923. 2020 Reports can be obtained from the Council.

2. Write to Governor Cuomo (State Capitol, Albany, NY 12224) urging better protection for the Park through creation of a state fund for the purchase of wildlands. New Yorkers should send similar letters to their representatives in the State Senate and Assembly.

3. Contribute to Buy Back The Dacks, the people's fund for the Adirondacks (POB 492, Canton, NY 13617). All donations are tax-deductible and go directly toward the purchase of land which will be protected as forever wild. Wild Earth and The Adirondack Conservancy will select the lands to be bought.

—Kathleen Fitzgerald, Wild Earth

Southern Ozark Headwaters Ecosystem Reserve

A Preliminary Proposal

by Doug Alexander

Now that only 5% of original virgin forests of the US are left, we must work tirelessly to preserve what remains as biological reservoirs so that depleted forests can be resupplied with species, air and water can be filtered and cleaned, and the human spirit has a place and reason to be rejuvenated. There are other reasons, of course, but there is not much time. Thus it is urgent to present proposals such as this.

Real change won't happen as long as so-called environmentalists are reactionary, only working on ways to thwart plans of the despoilers. To succeed, environmentalists must set the agenda, force the exploitive factions to react to us.

The SOUTHERN OZARK HEADWATERS ECOSYSTEM RESERVE (SOHER) proposal, if implemented, would connect and enhance the genetic and habitat diversity of the five Ozark National Forest (OzNF) Wilderness Areas, Special Interest Areas (SIAs), the major headwaters and riparian sections, and the dividing mountain ridges. Ideally all public land will be brought into such a system in the future, but these connections represent a reasonable beginning. Areas of known or suspected sensitive and rare plant and animal habitat are included in the proposed reserve.

LOCATION

The Southern Ozark Headwaters Ecosystem Reserve would be located within the Ozark National Forest in the northwest part of the state of Arkansas. Boundaries of the reserve consist of the general outline of the Buffalo Ranger District (the northernmost district in the main body of OzNF), habitat corridors leading to and including all Wilderness and Special Interest Areas, and corridors along all major streams and across dividing mountains. The map gives a good idea of this reserve proposal. About 200,000 acres of OzNF public land are involved. This proposal affects only public lands.

CLIMATE

Generally this area enjoys a humid warm temperate growing season and a cool winter. Summer is hot with mountaintop shade temperature extremes to the mid nineties and valleys to 105°F. Winters usually have brief snow and sub-freezing periods, occasionally well below 0°F. As in all mountainous country, there are remarkable differences in climate from summits to valleys, north slope to south slope,

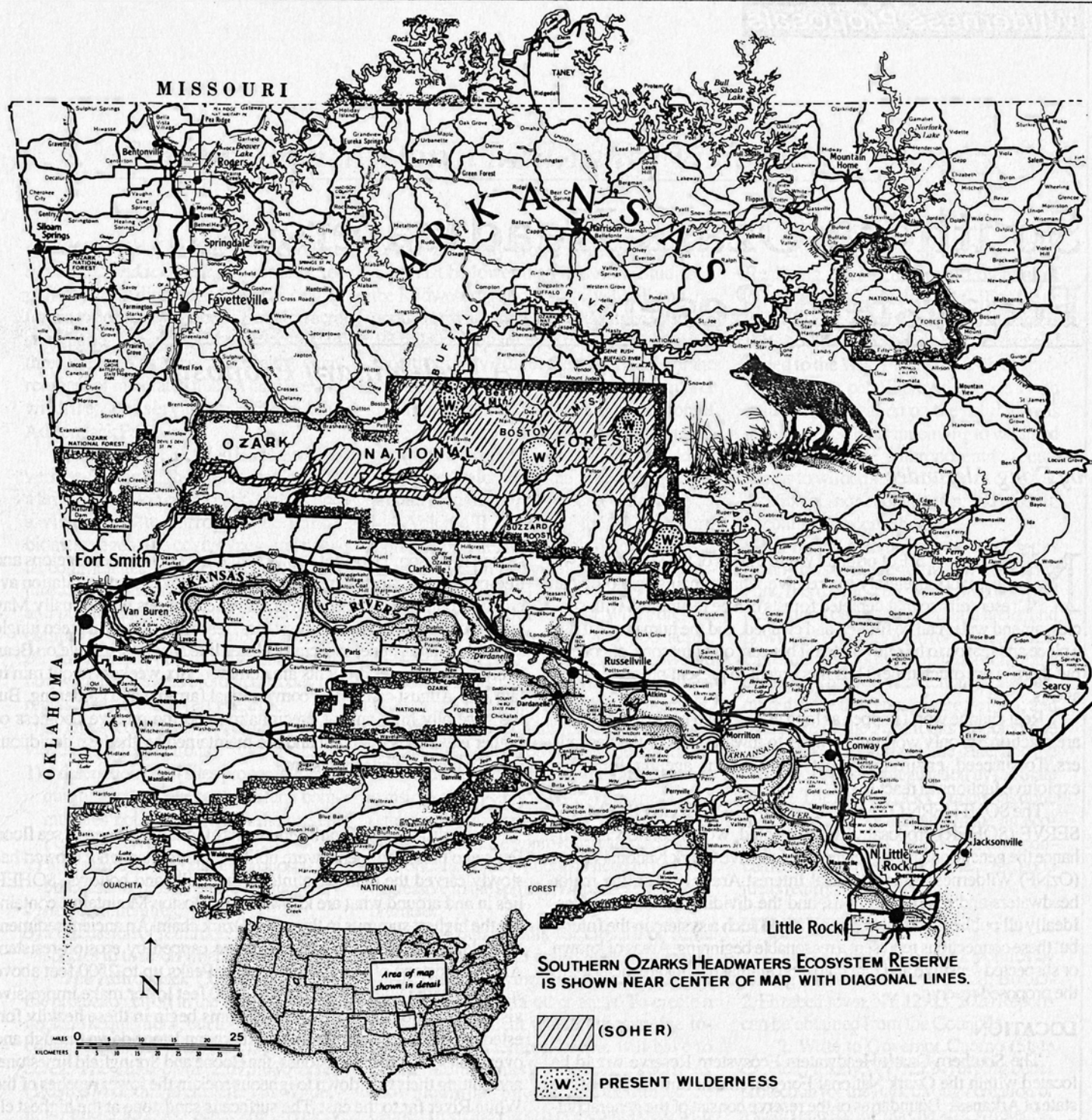
season to season. Two-foot snows sometimes fall on the ridgetops and tree-pruning ice storms are common. High-elevation precipitation averages around 55 inches per year, lower elevations less. Usually May is the wettest month and the forest most resembles the ideal green jungle about the first of June, especially places like Magnolia Grove on Bear Mountain. Summer droughts are common. Six weeks without rain in late July-August can cancel conventional farming and gardening. But the generally high annual precipitation and the relative coolness of higher elevations maintain and are maintained by the lush deciduous forest which prevails in this area.

GEOLOGY

(simplified) The Ozark Mountains of today were once a sea floor. Eons ago these sediments were uplifted and faulted, and erosion has slowly carved the landscape into rugged hills and hollows. SOHER lies in and around what are known as the Boston Mountains, containing the highest summits in the entire Ozark chain. An ancient sedimentary plateau, the Boston Mountains are capped by erosion-resistant Atoka sandstone of Pennsylvanian age. Peaks up to 2500 feet above sea level with valley floors 1000 to 1500 feet lower make impressive vistas. All major Arkansas Ozark streams begin in these heavily forested mountains, flowing from the Atoka sandstone down through and over shales and other sandstones, the Boone and Springfield limestone, and cutting their way down to igneous rock in the lower reaches of the White River far to the east. The surface is sandstone at the highest elevations and sandstone, shale, limestone, and chert below. Most of the soils are not highly fertile for agriculture. No known large mineral deposits are in this area, though there is natural gas to the south. Narrow ridges, cliffs (known as bluffs locally), natural bridges, pedestal rocks, deep steep hollows, caves, sinkholes and springs characterize these mountains.

FLORA AND FAUNA

Today the Ozark Mountains, especially the Boston headwaters, are covered with an Eastern deciduous forest of oaks, hickories, gums, beech, ashes, elms, walnut, maples, Black Cherry, basswood, Eastern Red-cedar, Shortleaf Pine and other trees. Dogwood, persimmon, sassafras, redbud, magnolia, Indian Cherry, hawthorn and others are found generally as understory and pioneer species. About 500 species of trees



and shrubs, around 200 other flowering plants, and 40 types of ferns are found in these mountains. Some of the rarer plants here are Yellowwood, Ozark Chinkapin, Mock Orange, Yellow Mandarin, French's Shooting Star, Blue Cohosh, Alabama Snowwreath, Cranefly Orchid, Shining Clubmoss and Filmy Fern. There may yet be unclassified endemics among the ferns, mosses, liverworts and sedges. The Eastern deciduous forest probably attains a greater diversity, lushness and tree size in the Boston highlands than in any other upland west of the Mississippi River.

Ozark National Forest officials claim the forest is oak/hickory/pine. This is actually a gross oversimplification of the forest ecology, which the Forest Service uses to help justify its timber program. There are many interwoven relationships and associations between the soils and organisms, and these vary from place to place. Julian Steyermark, whose works are still considered definitive on Ozark flora, in a study for the University of Missouri, found and listed 164 different forest associations. In many areas, the dominant trees are oaks and hickories, but even there the associates differ

from site to site. In other places, oak, hickory and pine do not dominate (along streams, in deep hollows, cedar glades, etc.) Soils, rainfall, exposure, aspect, succession and other factors determining associations vary greatly in the Ozark Mountains.

As far as we know, no complete study and classification of forest associations has ever been done for the Boston Mountains. Our observations suggest no pure stands (one tree species) existed here naturally. Shortleaf Pine and Eastern Red-cedar did pioneer in nearly pure stands after some kinds of human distur-

bance, such as bad row-crop farming. Oaks and hickories are nearly ubiquitous. Black Gum is also found in almost every association, and is often dominant. The pine and cedar are also found nearly everywhere, but are not naturally dominant except on very poor sites such as slides, glades and bluffs.

Of the 74 mammals native to Arkansas, at least 65 are known to occur in OzNF. Among these are Black Bear, Bobcat, Coyote, Red and Gray Foxes, River Otter, Mink, Long-tailed Weasel, Opossum, White-tailed Deer, Beaver, Raccoon, Gray Squirrel, Fox Squirrel, Flying Squirrel, ground hog (Woodchuck), Armadillo, shrews, several bats, and various mice. Elk have been reintroduced in the Buffalo River area. Continuing sightings of Panthers and Red Wolves cannot be ignored. (I have seen what looked like a Red Wolf myself.) Large habitat corridors connecting large reserves are essential for the survival of such far-ranging endangered species.

About 79 species of reptiles and amphibians and 90 fish species are at home in OzNF. Four poisonous snakes—Timber Rattler, Pygmy Rattler, Copperhead and Cottonmouth—also dwell here. Of these the Copperhead is by far the most numerous in the uplands and is a relatively docile snake.

About 140 bird species have been observed here. Some of the rarer nesters are Bald Eagle, American Redstart, Worm-eating Warbler, Hooded Warbler and Scarlet Tanager.

Of course, there are thousands of kinds of small invertebrates and microorganisms, some unclassified or unknown. Many of these seem threatened by the clearcut, road and poison mentality of OzNF management. The Forest Service does not consider the graceful floating dance of a Giant Swallowtail butterfly carefully following a border of Blackberry Lilies, sipping nectar from deep inside the orange spotted flowers, or Tiger and Black Swallowtails dining from Echinacea and Bergamot blossoms nearby. Larval stages of many butterflies depend on hardwood trees. Nor does the Forest Service show concern for other spineless forest denizens: scorpions, eight-inch long orange and black "Ozark Devils" (centipedes), stickbugs long as your hand, praying mantises, walking sticks that can nearly defoliate oak trees, huge fish-eating spiders that catch minnows from clear streams, tarantulas, ticks, chiggers, hornets, horseflies nearly two inches long.... All these, along with the microbes in the soil, are essential to the forest ecosystem.

HUMAN HISTORY

Earliest evidence of people in the Boston Mountains dates back at least 10,000 years to Paleolithic gatherer/hunters. Very little is actually known of those folks, but inferring from studies elsewhere we can guess they lived as nomadic extended family groups. Chipped chert and flint tools and pieces suggest they hunted and camped along the streams and the many overhanging bluff shelters.

The gatherer/hunters, with perhaps the most sustainable form of human culture, continued for thousands of years in the Ozark highlands; but primitive farming began about 1000 years ago in the bottoms of the major valleys. Corn, beans, squash, sunflower, gourds, Giant Ragweed (buffaloweed) and other plants apparently were cultivated, though gathering and hunting continued to be important.

By the time European settlement began here, in the late 1700s, the Ozark Mountains were the hunting and wintering territory of the Osage people, who did not farm much then. Their main villages were in southern Missouri, but they were fierce and wide-ranging hunters and

gatherers who kept others out of their lands.

The US government bought and stole northern Arkansas from the Osage, and in 1817 began to settle the Cherokee there, after removing those unfortunates from the East. The Cherokee, perhaps the "whitest" of the Eastern tribes at that time, built log cabins, farmed, hunted and fished like other pioneers. Then in 1827 the Cherokee were "removed" again to what was then Indian Territory and is now eastern Oklahoma. In the late 1830s more eastern Cherokee, following one of the "trails of tears," passed through northern Arkansas on their forced march to the Territory. A few of those natives escaped authorities and lived on in the Ozarks, marrying with European families. Thus the thousands of years of Native American use of the Boston Mountains was ended... or at least interrupted.

Meanwhile white people began moving into the Ozark headwaters in the early 1800s. Settlement began as a trickle of hardy mountaineers from the Tennessee and Carolina Appalachians. During and right after the Civil War many more of those Scotch/Irish hillpeople came from the east and claimed bottom and hill farms in the dense forested mountains of northern Arkansas. The census of 1900 totaled about 13,500 people in Newton County, Arkansas.

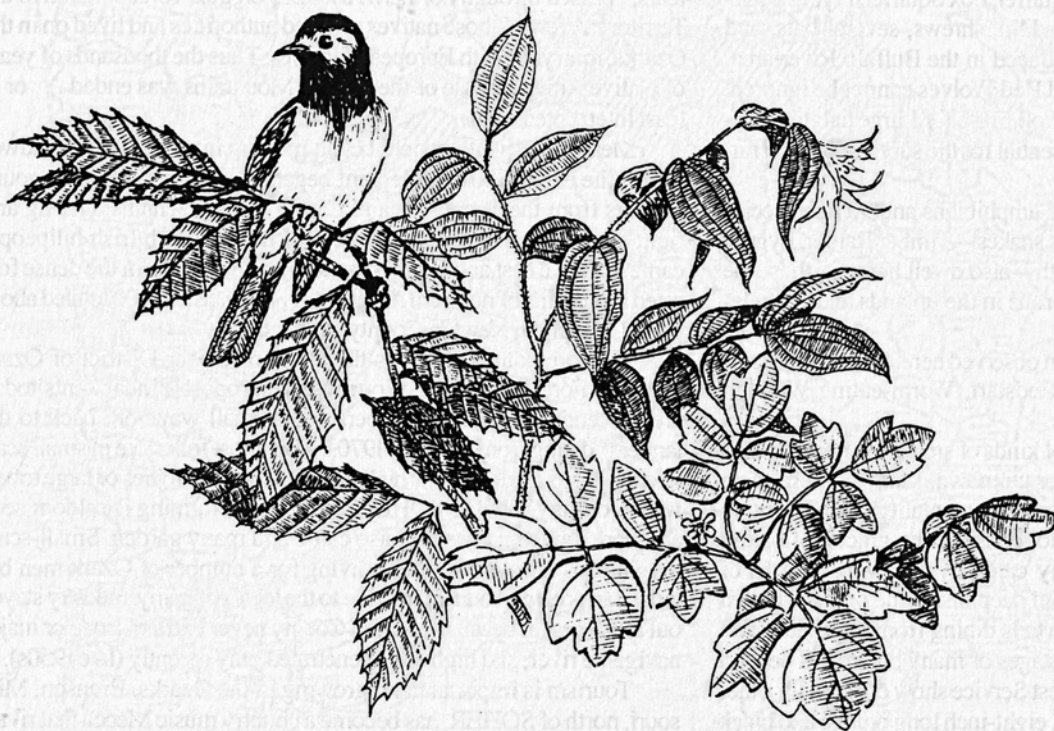
Newton County contains the Buffalo Ranger District of Ozark National Forest and most of our reserve proposal. Inhabitants today are descendants of early pioneers and a small wave of "back to the landers" dating from the early 1970s. Now most folks live in small scattered villages along the few highways. There are no cities or large towns within or very close to SOHER. Subsistence farming is seldom seen anymore, but some people raise cattle and many garden. Small-scale logging has always provided a living for a number of Ozark men but today ranks below tourism in value to the local economy. Industry stayed out and forest in because Newton County never had a railroad or major navigable river, and highways penetrated only recently (late 1950s).

Tourism is important and growing in the Ozarks. Branson, Missouri, north of SOHER, has become a country music Mecca that rivals Nashville for glitter. Retirement villages abound in the area. Many people come to the southern Ozarks to camp, hunt, fish, and enjoy the famous fall colors or the flowering dogwoods in spring. This tourism economy depends on the forest the Forest Service (FS) is removing. Tourism could be compatible with land preservation, if carefully regulated and planned. However, the sort of industrial tourism featured in many (if not all) National Parks and Forests (paved roads, parking lots, hotel and entertainment complexes, etc.) is not compatible with sensitive lands.

RIVERS

I have crafted this reserve proposal around the headwaters of the southern Ozark Mountain rivers partly because I feel these streams and the area that forms them are the most vital watersheds left in the middle part of the US. Perhaps the cleanest waters in the Midwest, north or south, tumble and flow down from these old forested sandstone hilltops.

The rivers, streams, branches and springs of the Ozark headwaters function as arteries of the lifeblood of the land. Sandstones, shales and limestones layered into the hills filter the water and give the streams a blue-green color, but the karst nature of the eroded rock allows pollution to travel far, relatively unfiltered as well. The unpredictability of water sources and varying degrees of filtration make for a delicate system easily contaminated. Recent proliferation of large-scale chicken,



Hooded Warbler with Ozark Chinkapin, Yellow Mandarin, and Blue Cohosh

turkey and hog confinement operations in rural northwestern Arkansas is poisoning the water table to the north and west of the Boston Mountains. It is feared this has begun to reach the Buffalo National River. So far there are few such factory farms within the boundaries of SOHER. The establishment of SOHER, better national laws and enforcement, and more restrictive county zoning could stop the cancerous spread of those stinking abominations.

SOHER contains the beginnings of all Arkansas Ozark rivers. Main streams are White River, Buffalo River, Kings River, Mulberry River, Illinois Bayou and Big Piney Creek. A brief description of each follows.

The most famous and most pristine and beautiful of all is Buffalo National River. Whether Buffalo has suffered because of National Park Service development and 1.5 million visitors per year is much debated, but government and business forces were set to dam the river for a recreational/power generating reservoir like they've done to many other Ozark streams. Grassroots citizen action over a long haul achieved the only other option offered—the nation's first National River. The resulting development and catering to motorized tourists is bad, but surely better than another motorboat playground with bathtub ring. Citizen

involvement can help guide management of the 150 mile long park and the future may bring opportunities for greater preservation orientation.

Buffalo River heads up on the highest peaks of the Ozarks a mile or so east of Redstar, flows east, enters the Upper Buffalo Wilderness (OzNF), then turns north through one of the true wonderlands of the Ozark Mountains. However, a flaw in the designation of our first National River is that the real headwaters are not included in the Wilderness, and the FS is systematically ravaging these headwaters with clearcuts, roads, and biocides. It's not too late to stop and repair the damage. This country's people should be outraged that our first National River, ostensibly preserved forever as a national treasure, is not really protected at all in its headwaters. Back to the stream . . . it continues to flow north, leaves FS control and enters the National Park Service's Upper Buffalo Wilderness Area. This begins the protected park corridor that runs from the proposed SOHER nearly 150 miles east until the Buffalo enters artificially cold clear White River near Leatherwood Wilderness (OzNF).

The major headwaters tributary of the Buffalo is Little Buffalo

River which begins a few miles east of the Buffalo in OzNF. Its main feeder branches are East Fork, Stepp Creek and Thomas Creek. The first two were supposed to be under consideration for Wild and Scenic River status but political maneuvering struck them from the list. Officials said the two streams were too dry to canoe much of the year, and had no botanical significance. It's typical of southern Ozark streams to occasionally dry down to isolated pools as the water flows underground between them in the dry season. Moreover, the East Fork, Little Buffalo, and Stepp Creek surround and drain Dismal Hollow and Bean Mountain, perhaps the most botanically significant hill in the Ozarks. The rich diversity of this area is only now being discovered. The Forest Service has acknowledged the uniqueness of Dismal Hollow by setting it aside administratively as a Special Interest Area in cooperation with the Arkansas Natural Heritage Commission, but Dismal Hollow is only part of the Bean Mountain/East Fork/Stepp Creek ecosystem, and it all desperately needs protection. The FS has immediate plans to road, clearcut and poison Bean Mountain. Many sensitive and rare plants and associations cling to an island of life on Bean Mountain and it is a haven for warblers, hawks and owls. The Bean Mountain Research

Natural Area proposal would help protect this natural treasure.

White River, the largest southern Ozark headwaters stream, is by far the most altered and abused. Numerous dams and reservoirs, including Beaver, Table Rock, Taneycomo, and Bull Shoals "Lakes," stop the flowing waters and attract hordes of visitors. Above the first dams, the White flows past turkey and cattle operations. White River lies mainly outside SOHER but heads in the reserve.

Kings River starts just to the west of Buffalo River and they flow north a few miles apart for some ways. Kings then tends west to join the White River while Buffalo flows east. The lower reaches of the Kings are inside SOHER, though flowing sometimes through ranchland.

Mulberry River has two main headwaters branches. The north prong (Little Mulberry) begins on the western edge of SOHER in the ridges north of Fallsville. The main prong Mulberry heads some miles south of Fallsville, outside SOHER but within the Ozark Highlands Trail (OHT) corridor. Since Mulberry is a forested and undammed stream, its corridors are vital habitat links to the western lowlands and Arkansas River. The Upper Mulberry features some of the best whitewater canoeing in the state. The river does flow through much private land, including ranches.

Three forks of the Illinois Bayou originate within OzNF. North Fork heads near Pedestal Rocks, several miles south of Pelsor. It flows south to its confluence with the rest of Illinois Bayou near the southern OzNF boundary. Very little private land is along this stream. Middle Fork begins a mile to the east of the SOHER boundary, winds south through OzNF to meet East Fork Illinois Bayou near Bayou Bluff. East Fork Illinois Bayou starts in East Fork Wilderness (OzNF) and is the shortest but best preserved prong of Illinois Bayou. East Fork is one of two OzNF Wildernesses not in Buffalo Ranger District (and thus not in the main body of SOHER) and the corridors to it and down the branches should provide an adequate link to the southeastern lowlands. A habitat corridor over the mountain to the head of Brock Creek, then downstream to its confluence with Point Remove Creek, gives another important tie to the lowlands of the southeast.

Big Piney Creek heads up south of the great divide separating the White River from the Arkansas River to the south. Buffalo and

Kings are tributaries of the White River, while Mulberry, Big Piney and Illinois Bayou are Arkansas contributors. Far to the east, the White joins the Arkansas, just before that great stream merges into the Mississippi River. The main tributary of Big Piney is a west prong, Little Piney Creek. This begins near Ozone and flows south to join Big Piney in what is now called Piney Bay (backed up from Dardanelle reservoir) south of OzNF. Ozark Highlands Trail follows the north ridge along the upper reaches of Little Piney. Big Piney begins at Fallsville, runs down east through Walnut Valley past Limestone before turning south. Hurricane Creek Wilderness (OzNF) lies just to the east and makes Hurricane the most significant branch of Big Piney. The river in this area is full of holes, rapids and cabin-sized boulders. It continues south past Buzzard Roost, looping and turning its green water through the mountains as it leaves OzNF on its way to the Arkansas.

The watercourses I've just described, except the dammed White River, are the remaining free-flowing streams in the Arkansas Ozarks. They all head up in the same area of OzNF—the proposed SOHER.

SOHER MANAGEMENT GUIDELINES

For the proposed reserve, there will be no timber harvest or other manipulations and especially no use of biocides. No roads will be constructed or reconstructed; some will be closed. Wildfires, when human caused, will have to be controlled when buildings, or homes are threatened; but a non-intervention policy will be the general rule so that natural processes may resume. Large natural fires are not common in the Boston Mountains. Basically management of the reserve should be by "benign neglect." Rules and guidelines for monitoring and protecting reserves will evolve as our experience does. Off-Road Vehicles (ORVs) will be prohibited everywhere on public lands in the SOHER, except where legal on established roads.

Within the reserve will be areas that require special management: Wilderness, sensitive plant or animal habitat, tourist impacted areas, etc. For example in the proposed Bean Mountain Research Natural Area, harvesting of plants will have to be monitored and regulated or prohibited. In some places hunting and fishing may need to be restricted. Indeed in some areas, hopefully not many, human use

may have to be excluded to allow recovery of the land. An example here is the trails people have beaten across private land and then through Upper Buffalo Wilderness to a breathtaking lookout bluff called the "Hawk's bill." The wilderness is being adversely impacted by too many people, and private landowners are unhappy about parking and litter. FS responded to this by constructing a parking lot and erecting signs guiding tourists through the wilderness to the bluff! Any human uses of land within the SOHER will have to take a backseat to habitat preservation.

Lately several people have attempted to map biological habitat corridors between large areas already exempt from the timber base in OzNF (Wildernesses, SIAs, riparian zones). These attempts are motivated by the realization that historic and present management techniques are leaving only small islands of natural habitat which are not adequate to maintain sensitive and endangered species. Federal laws, not yet enforced, require efforts by public lands managers to truly enhance habitat for those species. Recent federal court precedents require habitat corridors in National Forest management. When we attempt to give animals such as Red Wolves, Mountain Lions and Golden Eagles enough space not only to exist but to potentially increase, we soon see that adequate migration corridors large and secure enough for such wide-ranging native species will cover the entire Buffalo Ranger District, with arms following the major streams to the north, east, south and west.

Nobody really knows how wide a biological habitat corridor needs to be. We do know Panthers need seclusion from human disturbance and may range more than fifty miles in one day. Most endangered large animals shun humans and avoid roads. It seems reasonable to assume that corridors between major reserve blocks should be at least 2 miles wide. Noise and scent of human activity can carry that far. The crowding that could result from habitat belts too narrow should be considered.

In this area at present any wildlife corridors following major streams would contain roads and private lands. It is not yet clear how best to deal with this situation. Most of the encroaching roads are lightly traveled dirt. We don't know how they would affect Red Wolves and Mountain Lions. Black Bears seem to tolerate and even use backroads to some extent. [So do poachers.—ed.]

Within the Buffalo Ranger District no

buffer zones are proposed here, as it is all to be in the reserve. The proposed 2-mile-wide corridors outside Buffalo District may need buffer zones in some areas. These buffer zones, of variable width, could be established in areas where restoration work would be undertaken. Buffer zones may also be needed around East Fork Wilderness and the Special Interest Areas outside Buffalo District.

As you read this, even-aged management, high timber quotas and bureaucracy are devastating OzNF. The Forest Service uses only even-aged timber exploitation, as even the highly touted group selections are merely smaller patch clearcuts.

Large public (and private) land reserves are needed because we have shown an inability to manage without eliminating many of the more intangible resources and benefits of the land. By now almost everything has been compromised away to the point where only islands of habitat are left here and there.

One solution to this dilemma might be to eliminate all present public land agencies and replace them with a Department of the Land. Totally remove exploitive mandates; allow no timber harvest, no roads, no biocides, no grazing, no dams, no development of commercial enterprises. Replace with ecotourism, education and nonexploitive research, and restoration.

These Boston Mountains still contain virgin old growth. FS doesn't want the public to know about the old growth because they plan to eliminate it and they know the public would oppose the destruction. In some cases propaganda is employed to delude the American people, as when a FS official claims the entire Ozark Forest is second or third growth.

A remarkable feature of OzNF is the Ozark Highlands Trail (OHT), a footpath that traverses the Forest from near the Oklahoma line east to Richland Creek Wilderness (OzNF) in Newton County, Arkansas. This provides a habitat corridor for an increasingly sensitive and endangered group, people with the desire to walk in natural places. OHT was constructed and is maintained mostly with volunteer labor and funds, and runs almost entirely on public land. Unfortunately, the FS has clearcut along the trail. Because the east-west path through the Forest could also act as a large mammal, raptor and plant migration route from near the Buffalo River almost to Oklahoma, a 1-2 mile-wide zone is shown along OHT where it is not otherwise in the reserve.

BEAN MOUNTAIN RNA

A key feature of this proposal is the designation of the Bean Mountain/Dismal Hollow Research Natural Area. This management category will remove from the timber base the incredibly diverse ecosystem found on Bean Mountain and its hollows. The moisture regime and macro-climate fostered by the unbroken native forest are necessary for the survival of many sensitive and rare plants. Here live Yellow Mandarin, Blue Cohosh, Ginseng, French's Shooting Star, and Crane-fly Orchid among others. Even if the SOHER is not accepted, it is vital that at least the Bean Mountain/Dismal Hollow RNA be established.

WHAT YOU CAN DO

Many officials and politicians need to be written and contacted (addresses below). Give your view of the Southern Ozark Headwaters Ecosystem Reserve and Bean Mountain/Dismal Hollow RNA proposals. Question any timber, road or game management on Buffalo District, especially Buffalo and Little Buffalo headwaters. Write about the proposed Sandy Springs Timber Sale for Bean Mountain. Remember the Chief of the Forest Service must declare a Research Natural Area.

Newton County Wildlife Association (NCWA) has for more than seventeen years fought for OzNF reform and was successful in forcing FS to stop aerial application of herbicides on the Forest. They monitor management practices and comment on plans, network with other groups outside the area, and sometimes lobby in DC. They need donations as they are run by very low income folks who live in an area relatively remote from services. NCWA supports and would help implement the SOHER. (For NCWA one year membership, including Wolfeyes T-shirt, send \$22 to NCWA, POB 189, Jasper, AR 72641. State shirt size.)

The writer of this proposal, who lives in the SOHER, has undertaken to draft a reasonable reserve plan that has some chance of acceptance and to promote it regionally and nationally. I hope the publication of this proposal in *WILD EARTH* will bring recognition to the priceless natural heritage of this area. I would like to begin a newsletter concentrating on this southern Ozark land, but my income ranges right above zero as I try to homestead an old mountain-top farm. Several other people help me, and if we can get some

support we'll continue. We need conservation biologists and naturalists to assist in assessing the forest associations, identifying rare plants, possibly testifying in lawsuits, and aiding other efforts vital to establishing the Southern Ozarks Headwaters Ecosystem Reserve.

Officials and addresses are: Arkansas Senators David Pryor and Dale Bumpers, United States Senate, Washington, DC 20510; Lynn Neff, Supervisor, OzNF, POB 1008, Russellville, AR 72801; Southern Regional Forester, USFS, 1720 Peachtree Rd. NW, Atlanta, GA 30367; Dale Robertson, Chief, USFS, USDA 201 14th St. SW, Washington, DC 20250; Bill Clinton, President, 1600 Pennsylvania Ave. NW, Washington, DC 20500.

Write your own congresspeople too.

Doug Alexander (HCR 62, Box 664, Deer, AR 72628) is an Ozark naturalist and homesteader.

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A Preliminary Biodiversity Plan for the Oregon Coast Range

A Report to the Coast Range Association

by Reed F. Noss, Ph.D.

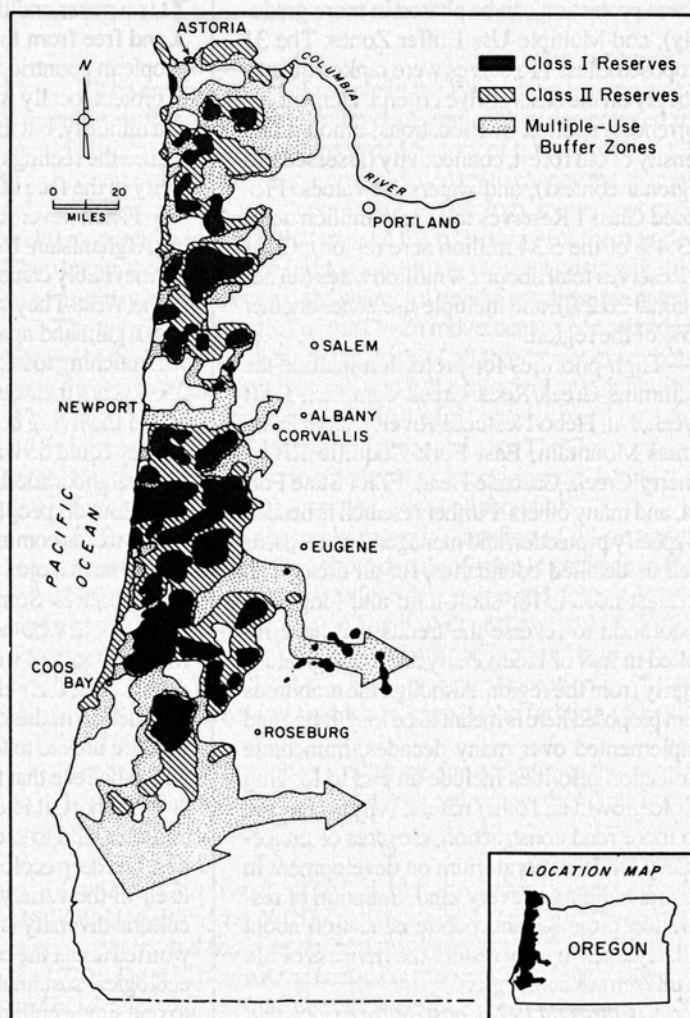
Wild Earth Editor's note: The following is the abstract from a new study done by WE Science Editor Reed Noss for the Coast Range Association, a regional wilderness advocacy group (POB 148, Newport, OR 97356). As the North American Wilderness Recovery Strategy (The Wildlands Project) progresses, Wild Earth will run more and more abstracts and summaries of regional proposals, as well as some proposals in full. (Most will be too long to fit in our pages, so running summaries plus pointing to the full reports will be common. The Coast Range report is 40 pages long and is available from the Coast Range Association for \$10.) Wildland proponents working on such proposals should consider submitting pieces to Natural Areas Journal, Conservation Biology, and other peer-reviewed periodicals as well as to Wild Earth; and should participate with The Wildlands Project in disseminating the proposals in various ways (TWP clearinghouse, POB 5356, Tucson, AZ 85703).

CONSERVING OREGON'S COAST RANGE BIODIVERSITY

This report presents a case study of biodiversity conservation at the scale of a bioregion: the Oregon Coast Range. Goals for conservation at a regional scale include representation of all ecosystems across their natural range of variation; maintenance of viable populations of all native species, well distributed across their natural ranges; maintenance of ecological and evolutionary processes; and adaptability to change, both natural and human-induced. These goals have been enunciated for a long-term conservation strategy for North America—The Wildlands Project—and are exemplified here.

The Oregon Coast Range Bioregion is defined here as the Physiographic Province extending from the Coquille River in the south, north to the Columbia River, east to the Willamette Valley, and west to the Pacific Ocean. This region is characterized by a mild climate with moderately high rainfall, and contains the largest remaining tracts of temperate rainforest in North America, south of Canada; coastal headlands, estuaries, dunes, and beaches; grassy montane balds; diverse wetlands; and other communities. Rare species include endemic plants, the fisher and wolverine (both possibly extirpated within the last decade), Oregon silverspot butterfly, northern sea lion, peregrine falcon, bald eagle, native salmonid stocks, and the northern spotted owl and marbled murrelet.

The conservation evaluation employed in this study was pluralistic and utilized several sources of data: (1) 1:126,720 (1/2 inch = 1 mile) scale base maps with geographic features, including roads and land ownership; (2) element occurrences of species and natural communities that are very rare at global (G3 or T3 and higher) or state (S2 and higher) levels, from the Oregon Natural Heritage Program; (3) recent spotted owl and marbled murrelet data from the Oregon Department of Fish and Wildlife; (4) maps of late successional and old-growth forests from the congressionally appointed Scientific Panel on Late-Successional Ecosystems (the "Gang of Four"); (5) maps of draft watershed



reserves for aquatic biodiversity from the American Fisheries Society, Oregon chapter; (6) wildlife corridor maps produced from data on road kills and other observations; and (7) location of remaining roadless areas, landscapes with low road density, and other relatively undeveloped areas. These data were mapped on mylar overlays on each of the nine base maps.

Proposed reserve boundaries were indicated on separate mylar overlays on each 1:126,720 scale map. Reserve locations were determined from clusters or constellations of rare species and community occurrences, presence of significant patches of late successional/old-growth forest, important watersheds, and other significant undeveloped areas. Three categories of protected and semi-protected lands were recognized: Class I Reserves (areas of high priority for immediate and strict protection due to overlap of many important criteria), Class II Reserves (areas that can accommodate a greater range of human uses and where protection can be phased in more gradually), and Multiple-Use Buffer Zones. The 31 proposed Class I Reserves were ranked quantitatively on the basis of five criteria: element occurrences, spotted owl locations, amount and density of old forest, connectivity (assessed in a regional context), and watershed values. Proposed Class I Reserves total 1.25 million acres (23.4% of the 5.34 million acre region); Class II Reserves total about 1.4 million acres (an additional 26.2%); and multiple-use zones another 25% of the region.

High priorities for protection include the Cummins Creek/Rock Creek complex, Drift Creek, Mt. Hebo/Nestucca River, Marys Peak/Grass Mountain, East Fork Coquille River/Cherry Creek, Cascade Head, Elliot State Forest, and many others. Further research is needed to specify protection and management needs, as well as detailed boundaries, for all areas. The greatest need is for short-term and long-term restoration to reverse the trends that have resulted in loss of biodiversity and ecological integrity from the region. Although the ambitious plan proposed here is meant to be long-range and implemented over many decades, immediate protection priorities include an end to logging of old growth and other natural (virgin) forests, no more road construction, closures of unnecessary roads, a moratorium on development in natural habitats of every kind, initiation of restoration projects, and public education about what it takes to fully restore the richness of life in this remarkable region.

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The Breadth and the Limits of the Deep Ecology Movement

by Arne Naess

The gist of what is said in the following may be expressed in 3 sentences: To be joyfully active in the deep ecology movement is a serious affair. It is ethically unobjectionable not to combine it with being active in the peace movement and social justice movement. We respect our partners in the Green movement, but have "more than enough!" to do where we stand.

It is a never ending joy to think of the existence of a broad movement to protect the wild land free from thoughtless interference by humans. It is a special joy to see how many people in countries where they are primarily occupied with mere survival, nevertheless try to protect locally what is left of free nature. Defenders of free nature are, of course, always in a minority, but to be aware of comrades in arms locally and in so many countries helps to reduce the feelings of sorrow that so easily take hold when contemplating the reigning passivity in the face of the ecological crisis.

I shall never forget traveling in 1949 through India and Pakistan to a mountain bordering Afghanistan. Because of our lack of money and the 500 pounds of equipment and food, we inevitably came in close contact with people who were very poor from the point of view of the West. They were eager to hear what made us leave our country on a kind of pilgrimage. Again and again it astonished us to see how well they understood our longings and it was touching to hear them often say "How I would like to be with you." Through more than 2500 years their culture had embraced a respect for the dignity and wisdom of mountains and of the living beings roaming the (at that time) enormous Himalayan forests. Of course, all they could do was, together with other activists, protect the patches of free nature in their own neighborhood.

How do people in materially poor countries react when we talk about deep ecology? Using words common in their own cultures, many say "But this is what I always have felt!" This is not a majority reaction, but a minority that I guess is not smaller than in the so-called rich countries. Some are glad to get words for what they feel.

People who never have heard the term are supporting the deep ecology movement. Most supporters would feel bored if I, as a theoretician, started conceptual clarification of details. Yet, their efforts are consistent with deep ecology and often restrain the galloping destruction in their neighborhoods. It is a strange belief that people who work hard to survive are unable to feel the majesty of mountains, the inherent value of forests and wild life, and to believe that they are more "anthropocentric" than we are in the technocratic West.

In short, it is encouraging to experience the vast, intercultural roots of deep ecology attitudes, and to see that they are alive among people who focus on procuring life necessities. The deep ecology movement is broader than sometimes suggested. The broadness shows itself in the variety of scenarios for a better future, envisioned by the supporters. Human cultural diversity is part of the richness of life forms on Earth. Many supporters do not seem worried about the prospect of fairly uniform green societies all over the globe, but as I see it, ecological sustainability as an absolute requirement does not limit social-political structure to one single culture.



The peace movement, the social justice movement, and the radical environmental movement are the three movements in which work on the grassroots level by hundreds of thousands of people is indispensable and has considerable influence in world affairs. Within the radical environmental movement, I include not only the deep ecology movement, but also highly engaged "radical" supporters of more anthropocentric views who have the same serious view of the ecological crisis as the supporters of the deep ecology movement. Each of the movements introduces limitations on the range of cultures. The requirements of the three overlap but are not identical.

The tremendous upsurge of environmental concern since the 60s has caused many supporters of the peace and social justice movements to "jump on the environmental band wagon." But all three movements constantly need reinforcements. As dynamic social movements, exact delimitation of the three is, of course, out of the question; but historically much can be said about what has happened since World War II in terms of those three.

In the 50s, when Third World problematics gained force (with, for instance, "trade, not aid" as a slogan), there was considerable pressure to combine the peace and social justice movements into one. Some activists supporting this combination saw social injustice as a sort of violence, structural violence. The non-violent battle against large-scale violence then comprised both the "classical" peace movement and a large part of the social justice movement. (Johan Galtung's works are central to this trend.) It has turned out, however, that people inspired by the vision of a world without wars had more than enough work to do without direct participation in the complexities of how to fight social injustice, including maldistribution and imperialism. Pax Britannica and Pax Sovietica have shown how imperialism and other forms of obstructing self-realization potential over vast areas can be compatible with keeping peace. On the other hand, activeness in typical social justice conflicts may require one's energy and leave no time for activism in matters of peace. The division of labor does result in underestimation of the work of our friends in the other movements.

In recent decades millions of very poor people in Southeast Asia have seen their standard of living significantly bettered. How can we but rejoice? Yet, interference with ecosystems has concurrently increased. The prospect of a billion or more people being rescued from severe need does not necessarily mean a gain in overcoming the ecological crisis. Leaders of the social democratic regime often talk as if development were part of the (smooth) way of overcoming the crisis. This talk is politically convenient but utterly misleading.

The empowerment of people in the West living in a most degrading way in the midst of a level of opulence never equaled in world history (read "in human recorded history of human societies") is an imperative and more people are needed to try to change the shameful conditions. Some supporters of the deep ecology movement may feel they ought to join, and that may be the right thing for them to do. They know, though, that the fight against the ecological crisis will still need as many activists even if the shameful conditions are eliminated.

The very ambitious goal of the Green movement as conceived in Europe in the late 60s is to reach the goals of all three great grassroots movements: no wars, social justice, and full ecological sustainability. When students voted overwhelmingly in the first green wave, they were led by former anarchists, Marxists and peace activists. The Green movement is supposed to avoid one-sidedness and sectarianism, letting the three movements blossom in constant close collaboration.

Collaboration does not imply extensive reading of all pertinent literature and keeping informed about details of what is going on in the two other movements. That tends to feed depression and despair. Reading is passive and the information from all over the world is mostly discouraging. Perhaps I say this due to my experience of being occupied by the Nazis from 1941-45, but a persistent question is: "How about morale? Can anything be done to keep it (the fighting spirit) at its highest level?"

In sum, let us do our job as well as we can and rejoice that others do theirs, keeping in touch and sometimes acting together. This is the surest way to keep the spirit.

Arne Naess (University of Oslo, Division for Environmental Studies, POB 1116, Blindern, N-0317 Oslo, NORWAY) is the author of numerous articles and books on the philosophy he named for the world in the 1970s: Deep Ecology. Arne is also legendary for his hiking stamina and his defense of free Nature in Norway.

Eco-Porn and the Manipulation of Desire

by José Knighton

Along the eastern horizon, the swollen orange edge of the sun finally burns into view after staining the December morning for an hour with a wash of mauve, maroon and crimson. I howl to my distant companion, out of sight, along the rim of a ghostly world just being unveiled by highlights. He, I'm sure, is well aware of our world's enlightenment, peering through the window of his 4 x 5 camera, adjusting the bellows above its cumbersome tripod. But I howl anyway for the pure joy of it.

The towering Wingate cliffs are first to be splashed with frost-dispelling fire—Island in the Sky above us, Ekker and Elaterite Buttes to the west and the ribbon of the Orange Cliffs beyond. Bands of mist with echoing shadows condense across their faces, rising from the bewildering ridges of the Maze. The meandering tangle of canyons beyond and below my perch on the undercut White Rim is as convoluted as the surface of the brain, and their depths as ineffable. An interlocking sandstone sprawl fills the arc of horizon beyond the Green River down to its confluence with the Colorado, to Cataract Canyon, the Needles' distant prongs of light, Horse Mountain, the Seven Sisters, Cathedral Butte, the blue bulk of the Abajo Mountains. Backlit luminescent mist rises from frosted meadows beyond the Colorado. The other Wingate rim of the world, Hart's Point to Hatch Point and the Needles Overlook, drapes long shadows below the now-full disk of sun.

A picture is worth a thousand words. From my precipitous peninsula I can just discern a dark fleck along the bay of overhanging cliffs where Todd is stationed to catch a fragment of fantastic morning fusion. He frames the glowing monument of Ekker Butte with its hoop of uncanny mist. In his foreground a shadowed, absurdly overbalanced hulk of White Rim looms on a tapering pedestal flake that could peel and collapse under the weight of a chattering junco. One picture will capture a minor fraction of an immense, yet intimate, moment of magical Canyonlands sunrise, a meager instant of the shifting tide at the warm end of the spectrum across a thousand canyons, cliffs, spires, buttes and indescribable sculpted forms. But captured it will be.

One picture . . . and I could babble a million words in feeble approximation. In an hour, full daylight will again cast normality across Canyonlands. The odd mist will burn off. Hard white light will fill the deep shadows. A miraculous dawn will become a savored memory. But Todd's camera, barring any major lapses in technology and technique, will have trapped a sacred moment like a rabbit in a snare. And its reproductions will be as permanent as a taxidermied jackalope.

My petty resentment is showing, my mean-spirited stinginess. I want to embrace this moment that we struggled for, rose before a frozen dawn for, thawed an ice-filled coffeepot for, slept through a too-long, frost-rimed December night for. I want to hoard the immeasurable, transitory glory that we share with no other visible humans. Someday, potentially, Todd's fragment of this brilliant dawn could be re-experienced by someone warm and comfortable in an easy chair, leafing through a magazine or glancing at a calendar. But there is more to my concern than petty resentment, something that has stirred a disconcerting apprehension.

My friend Bruce, a photographer of significant discipline and taste, and I stood around a table of this year's barrage of nature calendars criticizing the undeniable allure of their contents. I made a flippant and spontaneous comment about this year's crop of "eco-porn." Bruce, although

We...devalue homely, flat-chested, overweight landscapes. The empty plains, the overgrown woods, the mosquito-ridden sloughs are more productive habitats than most scenic viewpoints in national parks, but few people care about, or for, them.



he had been critical of nearly every posed bit of landscape, gave me a sudden look of what was at once dumbfoundment, horror and recognition. Our shared laughter dissolved the tension and irony of my statement.

Unfortunately, once coined, metaphors, portentous or vacuous, tend to circulate. I found myself compelled to analyze this one mainly to dispel what I felt was a superficial illusion that pertinence arose merely from the pin-up style of calendars.

Pornography, even in a liberal atmosphere, is a heavy accusation. Even the tame Hefneresque version is insidious because it manipulates desire, taints it with consumerism, and misdirects passion away from reality toward an inanimate object. Worst of all, it mutates a living, breathing human being into an inanimate object in the eye of the beholder.

The model, chosen for her (or his) approximation of a stereotyped ideal, is posed in the intimate setting of a bedroom or shower. Selectively provocative lighting simulates dawn or evening glow through a shuttered window. A suggestive atmosphere manipulated by rose-colored filters or special lens reveals those physical attributes most alluring to the viewer, attributes otherwise available only after achieving an intimate relationship. The vital, animate sexual persona becomes an object of desire—cheesecake. Even if no response or passion is aroused

in the viewer (a frequent, but questionable claim), a physical persona of surpassing beauty has been grotesquely trivialized by being removed from essence and context.

After drawing parallels to the preceding analysis of pornographic imagery, I have to include much of the photography of landscape as effectively pornographic. Landscape photographers resort to the methodology of creating a pornographic image, and the result is equally manipulative and exploiting.

The stereotyped ideal, the towering peak or other monumental landform, is posed in a setting of intimacy from the scenic viewpoint. Perspective and foreground further reveal familiarity. Selectively provocative lighting—dawn, alpenglow and stormlight—is preferred. A suggestive atmosphere manipulated by rose-colored, diffusing or polarizing filters reveals those physical attributes most alluring to the viewer, attributes otherwise available only after achieving an intimate relationship. All the same techniques are used to enhance the captured reality, to beef up the bosom of the Grand Tetons.

This could all be perceived as a coincidence of photographic method were it not that, as with cheesecake and beefcake, the intention of most landscape photography is to appeal to, even seduce, the be-

holder with an image removed from its physical context, amplified into a commodity by technique. Neutral reality is objectified to evoke a subjective response for commercial gain, to sell calendars and magazine subscriptions or to connive contributions.

This accusation does not deny the artistry of landscape photographers. Nor does it necessarily invoke an Islamic edict against representationism. In fact, the manipulation of the viewer's (or participant's) response is an intrinsic aspect of art. It does, however, reveal a certain kinship between David Muench and David Hamilton, between Ansel Adams and Helmut Newton. The commercialization of art may be an unavoidable consequence of capitalism. This flaw, however, is not the sin in the heart of greater and lesser landscape photographers. Nor is its counterpart the focus of outrage from the women's rights movement toward pornographic imagery.

That outrage is aimed squarely at the exploitation of the female body, and the psychic damage to individuals (both model and voyeur) and society caused by the pervasion of pornography. In this context, the parallels of cheesecake and landscape are most incriminating. The catchword for the women's rights movement's counterassault against pornography is "exploitation." The dehumanization of women (image as object) is the most evident and undeniable negative aspect of pornography.

The psychic damage, however, is more subtle and pervasive. Cheesecake images generate a cumulative, aesthetic ideal of the female body in the cultural unconscious. All women are then evaluated by an unrealistic standard, one that even the models would fall short of without being carefully posed and augmented by technique. Women who fail to match this prejudicial standard are then devalued as homely, flat-chested, or overweight, even though they may in fact be more productive or creative individuals than those who might pass as centerfolds. One need not subscribe to *Playboy* magazine to be influenced by the *Playboy* standard. It pervades our commercial culture. Especially in advertising, we are continually assailed by the same female (and male) contrived ideal. Our social fabric is warped by distorted perception.

It can be argued that since the primary complaint against pornography is the trivialization of women as sex objects, then landscape photography is not pornographic because landforms *are* objects and the content of these images is not sexual. What this argument truly reveals, however, is the depth of our cultural malaise.

The Grand Tetons and the Grand Canyon, both stereotyped objects of idealized, romanticized desire in our cultural psyche, are in fact living environments more vital than any single human being. The glamorization of these particular protrusions and cleavages, primarily by landscape photographers, into erogenous zones of our collective imagination has damaged both them and us. They have been damaged by our cumulative attention. We make pilgrimage to the objects we have admired on calendars and trample the habitats of other species or exterminate them for their inconvenience to our viewing pleasure. In the process, our perceptions have been blunted and perverted, just like the readers of *Playboy*.

We also devalue homely, flat-chested, overweight landscapes. The empty plains, the overgrown woods, the mosquito-ridden sloughs are more productive habitats than most scenic viewpoints in national parks, but few people care about, or for, them. We are collectively seduced by the rectangular stormlight portrait of the bosom of the Grand Tetons, with its crafted illusion of intimacy totally detached from the context

of the high plains where herds of antelope trapped by grazing allotment fences on public lands starve to death in windrows to be buried by drifting snow.

Although a general aesthetic response may be innate, the specifics of beauty are not facts. Our attention has been captured and coerced by a conspiracy of consumerism. It would be unfair to attack landscape photographers for catering to our tastes. We are all guilty of not being aware of manipulation and its effects.

It is not guilt, however, that I wish to solicit with this cultural introspection. I do not mean to add yet another brick to our collective burden of environmental remorse. It is already more than we can heft. Neither do I wish to disparage the dedicated professionals in this field who are sincerely concerned about our greater home. What I intend with this examination is to invoke awareness, to reveal how easily our passions are manipulated to our detriment. Without the intervention of conscious perception, our passive attention is little more than a gullible victim of petty consumer tyranny. Without vigilant and discerning senses, artist and observer are both equally abused.

We need to see the kinship between the image of Antelope Canyon's convoluted narrows bathed in reflected light being used to pimp Kodak film and the image of lathered curves of ambiguous flesh being used in a Zest commercial. We also need to recognize less evident implications of this same aesthetic hydra.

Elliot Porter's landscape photography directs the intimate and inherently manipulative techniques away from glamorous vistas to reveal the magnificence of the mundane. His detailed portraits of nature's glorious chaos cater less to our naturalistic prurience. Because of his stature as an artist, he is a significant influence on younger photographers. But his stylistic connections to contemporary eco-porn are still quite evident.

The book *Secrets from the Center of the World* exhibits an eye for a startlingly altered and refreshing perception. Steven Strom's photographs reveal secrets of the obvious that have been concealed by the prevalent, dissembling intimacy of eco-porn. Textures of undulant landforms are painted with sparse desert plant communities. Relationships are exposed. Landscape icons are shunned. It wasn't until I began struggling with the issue of eco-porn that the exceptional nature of these photographs was manifest. They are taken, for the most part, at midday! No blush of alpenglow here.

Now the appeal of these homely southwestern landscapes seems to presage my own delinquent concern. There is no seductive illusion of intimacy or accessibility. They are images of a stark and harsh land where the inhabitants have struggled for accommodation. The mind readily extends these images beyond their limiting formats. They are not captured, trapped images removed from context. They are context.

I find hope in these brazen noon-day impressions, hope that is stifled in the seductive shadows of more glamorous landscape images. I find hope that such unself-conscious images could find a niche in our marketplace. I find hope that men and women might recognize each other beyond phoney cheesecake and beefcake stereotypes. I find hope that we may recognize the living Earth beyond postcard modernism. I find hope for attentiveness and discernment. I find hope that I may not always resent sharing a hard-won and spectacular dawn with someone casually leafing through a magazine or glancing at a calendar.

José Knighton is a poet and wilderness explorer in Utah.

Malthus Was Right

by Mary de La Valette

On a planet where ecological collapse appears imminent, if not ongoing, proposals for creating a sustainable society do not qualify for serious consideration unless they take into account the population factor. Excellent concepts for living within our limits, such as Beyond Beef and Rocky Mountain Institute's Negawatt and Feebate plans, fall short in practical application as benefits gained are eaten up by additional population. [RMI's programs are intended to reduce energy consumption.]

Most of us seem to be in denial on this subject. We choose, at best, to focus on Third World numbers, despite the fact that each newborn American will consume at least twenty times the resources of a Third World child and that the Industrialized World's consumption patterns are based on the exploitation of the remaining resources of the Third World which GATT (General Agreement on Tariffs and Trade) and NAFTA (North American Free Trade Agreement) aim to make globally accessible. We have created an economy in which full employment for our exploding populations depends on overconsumption of finite resources; an impossible equation, with no possible end result but a lifeless planet.

In our relatively brief sojourn on Earth, we humans have conducted an unbelievably wasteful slash-and-burn, "no tomorrow" rapacious attack on all living systems, including the animal and plant residents of Earth. The party is almost over. We are now killing off the last great populations of animals—seals, kangaroos, wildebeest, among others—simply because they compete with us for dwindling food, land and water. Weyerhaeuser and Hyundai have begun the last great logging operations on the boreal forests that belt the Earth. The destruction has accelerated in direct proportion to our numbers. We can no longer avoid the issue of human overpopulation. The problem of human overpopulation has been avoided because it is the most unpopular to confront and the most difficult (if even possible) to solve. Confronting overpopulation is not, however, akin to attacking motherhood. On the contrary, it is absolutely essential to admit the folly of our multiplying numbers, if we are to offer any future for the Earth's children. To maintain the present "comfort" level in our society is not possible if we have to share the bountifulness of the Earth with a doubled human population. There are now close to six billion people on this planet. With that number, the oceans are dying from our pollution and our landfills are leaching poison into the remaining groundwater. At the present rate of population growth, there will be fourteen billion people by the middle of the next century. A vision of stinking, lifeless oceans, dead from our waste, is not a vision any mother has for her child.

The Beyond Beef Coalition's documentation of environmental damage, disastrous health effects and overwhelming cruelty to animals is a mandate for change. However, without a corresponding reduction in human population, the shift to vegetarianism would not alleviate our impact on the planet. We would, in theory, feed more people, thus in effect, exacerbating the problem. Meat-eating obviously has to go. Agribusiness has exploited the animal kingdom to its limits and with the failure of intensive farming of animals in factories, the entrepreneurs are moving on to exploit the plant kingdom. When shrinking space makes that unprofitable, the multinationals may move Beyond Vegetables to the microbial kingdoms. The pundits of industry—Julian Simon et al.—are not at all unhappy at the prospect of burgeoning numbers of consumers.

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From any ecological viewpoint, more people is a nightmare. The tragedy of the Amazonian rainforest is directly attributable to exploding populations. The Brazilian government solved their problem of unmanageable urban slum growth by building a World Bank funded road into the rainforest, starting the slash-and-burn invasion. A subsidized cattle industry followed the masses of desperate peasants.

Nature's cures for human overpopulation—war, disease and famine—are already at work. We have a preview in Somalia, in the AIDS epidemic, in the almost fifty civil wars raging around the planet and in the violent crime endemic in our major cities. If we do not control our populations now, while we still have a semblance of order, we will reach a point of total anarchy. This breakdown of social structure is evident in the Balkans and looming in the former USSR.

Many Americans seem to think they can continue in their wasteful, overconsumptive lifestyles, somehow isolated from the ongoing holocaust. Theirs will be a rude awakening. We are all subject to the laws of the Earth. The vast changes caused by our huge numbers affect the entire planet. Rainfall in our Midwestern crop-producing states depends on the transpiration of forests in Amazonia, which are being rapidly cut and burned. Heavy metals dumped off the coast of New Jersey have turned up in the tissue of marine mammals in the Arctic...and in the fish we eat. And, even as our former "environmental" President Bush was sabotaging the Earth Summit Treaty that would have globally phased out ozone destroying chemicals, scientists were reporting an alarming thinning of the ozone layer over the Northeastern U.S. and populations of blinded rabbits were discovered in southern South America and Australia.

Unless we have the courage and vision to face the population crisis and to discuss solutions, the future is grim indeed. China and India have recognized their population problems. India tried mandatory sterilization; China implemented a one child policy. Neither policy was acceptable in the long term. The best approach to population reduction is a public that understands the unthinkable alternative.

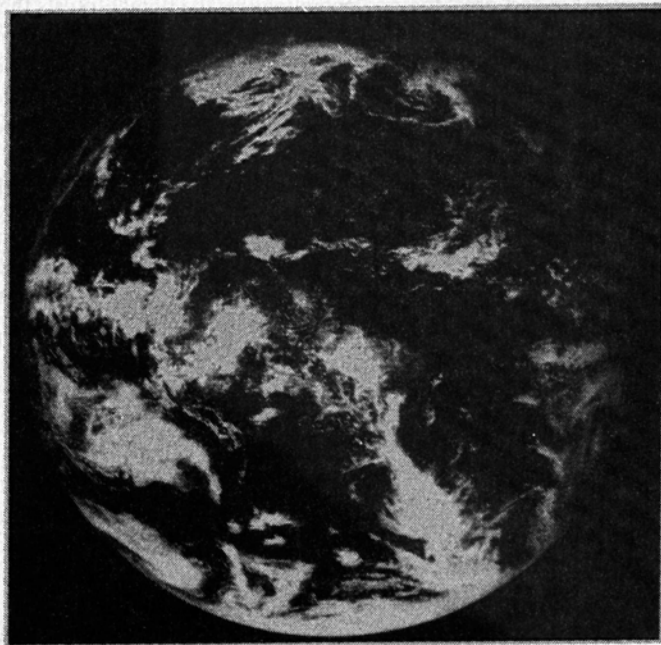
That said, an approach with potential is the tax route. Taxing families for having more than one child is a possibility. Tax incentives for remaining childless is another. Some couples would substitute "stuff"—overconsumption, the other part of this two-headed monster. Unless we can reestablish in the masses a *raison d'être* other than shopping and consuming, we gain nothing. Industry, by definition, will continue to overproduce and destroy to the end. Only a public that rejects that system can stop us from going like lemmings over the cliff.

Intentional simplicity, frugality, vegetarianism, energy conservation and efficiency, Planet Drum's Green City program and the growing international interest in Deep Ecology and ecosophy all hold promise for a new ecological world order. The Clinton/Gore Administration can create vital change. Gore's positions on population, spelled out in his book *Earth In the Balance*, include education and empowerment of Third World women and global access to family planning.

Addressing the population problem necessitates addressing the immigration issue. It is becoming obvious that continuing immigration into the U.S. merely relieves the source countries from confronting their own population problems by exporting their surplus to the U.S.

To conclude, it would be good indeed to evolve into a vegetarian culture that lived lightly on the planet. There would be a dramatic reduction in heart disease and cancer; the horror of slaughterhouses and factory farming would end; and elimination of livestock production would allow the land to restore itself. However, unless this is done in conjunction with human population reduction, we will be no closer to creating a sustainable society. Vegetarianism and conservation are transitional answers only to the core challenge of designing a Beyond Growth Society. The alternative is to watch the misery index worldwide continue to climb.

Mary de La Valette is a writer and environmental leader working with Gaia Institute (POB 582, South Lynnfield, MA 01940.) Beyond Beef can be contacted at 1130 17th Street, N.W., Suite 300, Washington, DC 20036.



Book Reviews

BOOK REVIEW: THE QUETZAL AND THE MACAW: THE STORY OF COSTA RICA'S NATIONAL PARKS

by David Rains Wallace; 1992; Sierra Club Books: 222 p., \$25.

Serious North American environmentalists seldom seek National Park designation to protect land and wildlife; rather, we think in terms of wilderness (the more the better). Costa Rica, however, has used a national park system to protect extensive tracts of wild lands throughout the nation. Modeled after the United States National Park system, the Costa Rican park system has surpassed ours in two significant ways: it encompasses about ten percent of the country's land area and includes examples of each of the country's major ecosystem types. Our national park system, in comparison, encompasses approximately three and a half percent of the United States' land area.

David Rains Wallace's *The Quetzal and the Macaw* is an anecdotal history of Costa Rica's national parks. Wallace, whose several fiction and non-fiction works include *The Klamath Knot* and *Bulow Hammock*, has a conversational writing style well suited to tying together the many threads that make up this story. As Wallace tells the story, it contains elements of history, suspense, and heroism; at stake is a portion of the Earth's biological diversity entirely out of proportion to the amount of land affected.

The Resplendent Quetzal and the Scarlet Macaw—after which Wallace entitles his book—are extraordinarily beautiful birds. International tourists—who were the original economic incentive for preservation of Costa Rican national parks—eagerly seek to see these two animals. To Wallace, the quetzal and macaw are symbolic of the Costa Rican park experience, not just of tourism. They represent the different types of habitat needs that were met with the nation's first parks, Poas and Santa Rosa. Poas, a volcanic crater high on Costa Rica's continental divide, provides ideal cloud-forest habitat for the quetzal. Santa Rosa, in lowland tropical deciduous forest,

provides habitat for the macaw.

The quetzal and the macaw are also suitable symbols for two individuals to whom Wallace attributes much of the success of Costa Rica's parks: Alvaro Ugalde is highly gregarious, not unlike the macaw, whereas Mario Boza is self-effacing and reticent, more like the reclusive quetzal. As students, Ugalde and Boza became the entire national park service when it was created at the end of the sixties. In the last two and a half decades, these two individuals have played various roles in the national park system but have never stopped their consistently successful advocacy of more and better parks.

The Quetzal and the Macaw is a personable look at the individuals and events that have shaped the growth of Costa Rica's national park system. More than just a story of the evolution of successful policy and land management, the book depicts the sometimes dramatic confrontations that preceded success. These include the firing of one of the nation's first preserve wardens, who killed and sold all of an endemic subspecies of monkey in the preserve he patrolled; the mysterious murder of a conservationist; and the establishment of a spectacular park after angry community members bombed a gate separating them from the lush rainforest and beaches a developer threatened to bulldoze and cover with hotels and restaurants.

Wallace does not hesitate to show us that success in promoting conservation biology while meeting the economic needs of a third world country is not complete. The preservation and maintenance of the national park system is subject to the whims of popular opinion and public policy. Populations of the quetzal and macaw are declining: the quetzal because establishment of montane preserves has not met the bird's biological need for lower elevation habitat during certain parts of the year, and the macaw because its brilliant plumage has made it a favorite in the exotic pet trade.

Alvaro Ugalde, now Director of Costa Rica's Park Service, is not content with having ten percent of the country's land in parks while wildlife populations dwindle. Ugalde's goal is twenty-five percent of the nation in in-

terconnected parks, with some management control over another ten to fifteen percent of the country's land area.

I would encourage anyone with an interest in public lands policy and biological conservation to read *The Quetzal and the Macaw*. Themes developed in the book are relevant to land preservation efforts in any country. Foremost is the idea that a truly committed individual can have a profound influence on land preservation. As important to the US reader is that we have no right to be complacent with our park system. Although the US likes to think of itself as a world leader in environmental protection, we have no official comprehensive plan to either enlarge our natural preservation areas or to create linkage corridors between existing areas. By contrast, Costa Rica, although dwarfed by the U.S. economically, already has a larger percentage of its land protected and is seeking to double that!

Reviewed by Mick Klasson, 222 Dover Drive, Gals, CA 95632

THE GREATER YELLOWSTONE ECOSYSTEM: Redefining America's Wilderness Heritage

Edited by Robert B. Keiter and Mark S. Boyce, Foreword by Luna B. Leopold, Yale University Press, New Haven, CT 06520, 442 p., \$45

Mark Boyce and Robert Keiter, both professors at the University of Wyoming, have done an excellent job of selecting papers presented at the 1989 symposium on the Greater Yellowstone Ecosystem held in Laramie, Wyoming. Each chapter in one way or another attempts to clarify wildlands management issues. Together they forecast the coming change from management based on human utilitarian interests—attempting to manipulate and direct natural ecological processes for direct human advantage—to ecosystem management which avoids undue manipulation of ecosystems and instead controls incompatible human uses.

Although the focus of the book is on the

Greater Yellowstone Ecosystem, its value goes well beyond the bounds of Yellowstone; for the issues here are being faced by conservationists and land managers throughout the world. How do we, for example, manage for biodiversity? Or should we manage at all—for biodiversity or anything else? What is natural and what is manipulation? Are humans a part of the wildlands environment and to what extent? In essence the authors are attempting to answer a fundamental question of how a diverse array of human wants, needs, and desires can be integrated into a natural setting while still maintaining ecosystem integrity.

These and other relevant questions are posed and answered from a variety of perspectives. The authors of the 24 chapters include outspoken critics of such federal government policies as Endangered species protection, private property rights advocates, and ecosystem protection proponents. Most of the chapters are by scientists doing research in the Ecosystem on topics ranging from stream ecology to public attitudes about wolf restoration. As with any compendium, the writing and quality of thought varies from author to author, but the book has some very good and thought provoking ideas.

The book's five parts focus on current controversial natural resource issues—proposed wolf reintroduction, wildfire management, ecosystem management, and wildlife issues related to Elk and range condition. Some of the recent research highlighted challenges popular perception and mythology. Several researchers conclude that Yellowstone's winter range is not being "overgrazed" by ungulates, as many have suggested in the past; fire ecologists argue that large wildfires are the norm in the Yellowstone Ecosystem and cannot be precluded by prescribed burns; a sociologist presents study results showing strong support for wolf reintroduction across the country, even within Wyoming. Opposing views are also presented.

The Greater Yellowstone Ecosystem would serve as an excellent textbook for a course in wildlands management, public lands policy, or environmental ethics, as well as rich reading for anyone interested in the ongoing debate about how to manage or not manage the Greater Yellowstone Ecosystem, and by inference, the world. I highly recommend the book.

Reviewed by George Wuerthner (Box 273, Livingston, MT 59047), author of The Fires of Yellowstone and many other natural history books

The Olympic Rain Forest

by Ruth Kirk with Jerry Franklin, 1992, University of Washington Press. 127 p.

No Room For Bears

by Frank Dufresne, 1991, Alaska Northwest Books, Anchorage, Seattle. 252 p.

The Living

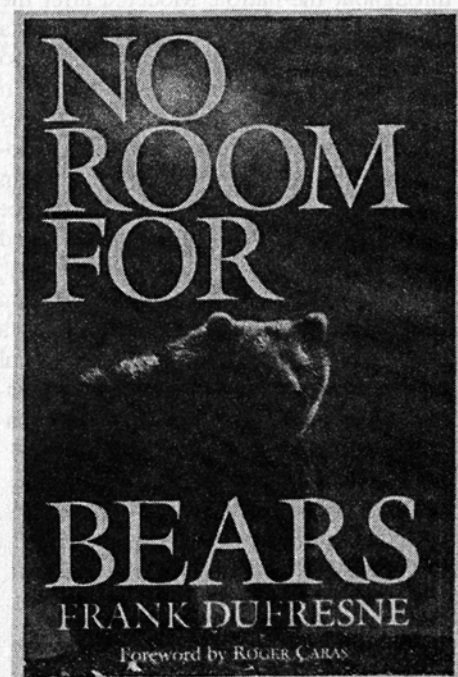
by Annie Dillard, 1992, Harper Collins. 397 p.

E.F. Schumacher in his famous book *Small is Beautiful* said our society has a metaphysical illness, and therefore needs a metaphysical cure. I think there is a great deal of truth in that observation. We lack a sense of responsibility to our community because we have failed to define what our community is and who it includes. We face so many critical problems these days that it seems impossible to solve any of them. Some people have learned much about what certain species require for survival and what our wastefulness and greed are doing to their chances of survival, indeed, the planet's survival. These knowledgeable people have written books to share what they've learned, with the ostensible goal of facilitating change. Why then have we not experienced a revolution? Perhaps it is because too few of those people are questioning the foundations of our society...or better, bringing their readers to these questions on their own. In my opinion, the best way to bring a reader to these ideas is through a good story.

In the Summer 92 issue of *Wild Earth*, Daniel Conner reviewed three books with "nature messages" and made the important point that a good story is the best vehicle by which to transport an important message. The message that we are losing, and may well have lost, most of the Earth's superlatives... the biggest and oldest bears, trees, whales, and fungi, for example...is dire. The three books reviewed here have these points in common: They are about superlatives; they pertain to some of the last wild places in the United States; and they are written by highly qualified authors. If the purpose of their writing is to inspire the awe they feel for their subjects, all three have succeeded. If the purpose is also to facilitate change, only Annie Dillard has succeeded. The reason? She wrote a good story. A good story doesn't merely transfer information from author to reader; it actually gives the reader an experience, and allows the reader to participate through imagination which creates a sense of "ownership." When I read a book full of facts and information, I feel like I have to

memorize what I'm being told. When I read a good story, fact or fiction, the events stick with me as though I actually experienced them. Maybe Native American cultures lasted so many thousands of years because they were good story-tellers!

Ruth Kirk does well by the grand and Middle-Earthen nature of Washington's coastal temperate rainforest. She has compiled a picturesque, informative and easy to read introduction to the Olympic Rainforest. The photographs alone make this book worth owning. Kirk's passion for and spiritual connection with the place is evident. Together with renowned old-growth forest ecologist Jerry Franklin, she describes the landscape, human culture, and Olympic Rainforest biota. Alas, neither writer is able to capture the spirit of the place, and a good, lasting story it is not.



If you like to read about bear encounters, *No Room For Bears* is your book. It is full of stories, many good ones, though some feel trite perhaps because the book was originally published in 1965. Nonetheless, Dufresne's message is as timely today as it was nearly thirty years ago: we are squeezing these beings out of existence. Bear habitat is shrinking daily. Geneticist Fred Allendorf, in a presentation at the 1992 meeting of the Society for Conservation Biology, said that if we are to help save Grizzlies we may be reduced to transporting them around by airplane (truly a rude thing to

do to such dignified individuals) for mating, to retain the genetic diversity of the species.

Dufresne knows bears, and through his story telling he presents the biology, psychology and idiosyncrasies of the bears he encountered. This book is well worth reading, even moving at times, but also falls short of the long-lasting impact of a well told story.

Annie Dillard has written her first novel, and it is the rarest orchid in an endless forest of bracken fern and sorrel. Through an historically accurate fictional account, she follows three generations of early settlers to Bellingham Bay in northwestern Washington starting in 1855 and ending in 1897.

Dillard not only conveys the feeling of what it must have been like for first and second generation European immigrants settling such a wild place, but also describes the personalities of the landscape features that set Bellingham Bay apart from every other place on Earth. She captured the personality of the Nooksack River in a most eloquent description:

The Nooksack River was born of a drip in a cirque at the tongue of a glacier hung on a western rampart of Mount Shuksan. The drip froze into an icicle, which dropped into a small pool; a runnel from the pool threaded a high valley out of the cirque and through the mountains adding seep to melt and swelling so fast that a mile from its source a man needed one piece rubber waders to cross it. This was the Nooksack River. It ducked into the forest, chuted between foothills, and fell asleep on the Nooksack plain.

In a short chapter concerning one of the true to fact episodes, she describes a meeting between Jim Hill, owner of the great Northern Railway, and Frederick Weyerhaeuser, owner of the largest timber enterprise in the world, which at the time was shipping Wisconsin and Michigan lumber east. Mr. Hill was trying to convince a wary Mr. Weyerhaeuser to invest in Pacific Northwest lumbering. This meeting sealed the fate of the ancient forests. When the deal was done, Hill was left reflecting:

Jim Hill remained by the fire, calculating with a pen. Since a timbered acre in Washington yielded 40,000 feet of lumber, then it compared right favorably with an acre of Dakota wheat. In fact, one timbered Washington acre would produce freight wealth for his railroad equal to 367 years' freight wealth from an acre of wheat. He looked at the figure with satisfaction. It crossed his mind that one could harvest such heavy timber but once, while the

acre of wheat produced forever. He had learned at his mother's knee, however, that this is an imperfect world.

The last paragraph of the book is the most breathtaking and glorious ending I've ever experienced.

If you want to learn about the landscape of the Pacific Northwest, if you want to understand why we are so hell-bent on chopping it all down, if you want to learn what effects the land has on its people, both natives and newcomers, and if you want the first-hand experience of a woman who describes the very heart and soul of the Pacific Northwest, read *The Living*.

Reviewed by Sandra Coveny, POB 724, Durham, NH 03824

VISIONS UPON THE LAND: Man And Nature On The Western Range

by Karl Hess Jr, 1992; Island Press, Washington DC.; 278 p., \$22 hardback

Ahhh, if only reality were as pleasant and pretty as the calculated substitutes offered up for our approval! Desert Slaughter would be Desert Storm, McDonald's would be our kinda place, and *Visions upon the Land* would be a sincere attempt to reform public lands ranching policy for the good of the environment and all people. Alas, dear friends, how often we are misled by those who stand to gain. Here several factors should forewarn us.

First, as a former range specialist, range ecologist, range instructor, and current range policy analyst, Karl Hess Jr. has a long-standing involvement with—if not vested interest in—the Western ranching establishment.

Second, Hess exemplifies the "we know what's best for nature" mindset shared by Allan (HRM) Savory, Alston Chase, and other self-described "progressive ecologists." Their belief system maintains that humans have so altered Nature that, as written by Allan Savory, "There is no longer any such thing as natural." The environment will continue to deteriorate unless we exert ever wiser and more effective influence on it. And since Nature is no longer boss, we are free to create landscapes of "unlimited possibilities." While this may be insufficient reason to dismiss Hess's book, it is good reason to question his motives.

Third, Hess's book is sponsored by the

Cato Institute, Redd Foundation, and Foundation for Research on Economics and the Environment (FREE), all of which promote privatization of public lands.

Fourth, is the book itself. Take a moment to contemplate the title: *Visions upon the Land: Man [sic?] and Nature on the Western Range*. Its main theme is that narrow-minded concepts of public lands management as expressed via government interference have caused the environmental and economic disaster we now call welfare ranching: "Intolerant visions swept across arid landscapes independently of the ethics of individual ranchers, transforming the land and affecting its people for the worst." "Intolerant visions," Hess explains, are basically those "sweeping ideologies" adopted (and distorted) by the BLM and Forest Service over the years as actual policy that prevents ranchers from practicing the beneficial, innovative, and diverse stewardship they would if not "disempowered" by this bureaucratic intrusion. Public lands ranchers have neither the ability nor incentive to practice wise management because "outside influences" not only thwart their efforts, but prevent them from realizing the fruits of their labors. Thus, stockmen need MORE CONTROL over the public land they use if they are to manage it properly.

Hess spends the first 10 of his 12 chapters reinterpreting public lands ranching's past and present to promote this contention. We learn that the BLM and Forest Service have always excluded stockmen from the management process, that stocking rates have fallen by more than 50% over the past 50 years ("the passing of the livestock industry"), that the conservation ethic that traditionally dictated public lands ranching management has since World War II given way to "the regulatory grasp of the environmental welfare state," and that the visions of John Muir and other radical environmentalists are "so prevalent in the landscape visions that have dominated law and policy on public lands."

While Hess acknowledges many of the negative impacts of public lands ranching, he is careful to absolve stockmen from responsibility. While maintaining that intolerant visions and bureaucratic control are the real culprits, he cultivates many of the traditional myths stockmen use to preserve public and political favor: environmental degradation is mostly a thing of the past, ranching is the backbone of the rural West, cattle utilize otherwise wasted vegetation, and so on.



And as usual, sympathy for the poor ol' dusty cowpoke runs thick and heavy. Public lands ranchers are "victims" in "a world that is largely indifferent to their fate" (rather than the rural West's wealthiest, most powerful and idolized group). In one short story, Hess claims a certain permittee (whom I know as a millionaire) might have to sell "his" public-land ranch and subdivide his private inholdings for development if the Forest Service doesn't address the excessive number of Elk competing with his cattle (the Elk actually get less than 10% of the allotment's forage).

As an introduction to each chapter, Hess provides a 2-3 page narrative of some rancher's attempt to "improve" the range. In each case, the grazer's good intent and hard work are dashed against a wall of government indifference or restrictions. Hess writes in the Preface, "I have selected . . . stories of exceptional ranchers—unrepresentative ranchers, perhaps..." Absolutely. And while I cannot deny that some of these ranchers do want to "improve" the range (whether for livestock, people, or Nature is another question), I do know that these situations have been distorted for effect. Indeed, the real lesson of most of these stories is that reducing or eliminating ranching is good for the range, not that ranchers know best how to manage the land.

The last 2 chapters take a final swipe at environmentalism and then propose "the most sweeping land reform in American history": "Over a 20-year period . . . the federal government would be required to divest itself of the surface rights to all lands managed by the Forest Service and BLM. . . . Every American holding a social security number at the time the proposal is implemented would receive one hundred shares of America's public lands."

Hess goes on to describe this glorious "market of landscape visions" proposal, its blessings and possibilities, and how it would transfer power to "those closest to the land." One line in particular caught my eye: "Stockmen would have the option to purchase [*shares to, I assume*] their [*public land, I assume*] ranches . . ." Wouldn't such an arrangement amount to de facto ownership? Stockmen already own 25% of the West outright. How much more would they end up with, considering that they currently graze an additional 35% of the West as BLM and Forest Service land and that as a whole they are one of the richest little groups on Earth?

As slanted as this book may be, it does have its merits. It is at times insightful and informative. The discussion of environmentalism and deep ecology is interesting, if ultimately misinterpreted. *Visions* is well-writ-

ten, carefully crafted, attractively presented, and published by Island Press. Of course these qualities also make its special agenda that much more palatable to the reader.

Beyond these perhaps dubious qualities, I find little to recommend in this book. Its pages drip with impossible altruism. It is stuffed with misrepresentations, calculated rhetoric, and philosophical fluff. Broad generalities and unsubstantiated claims substitute for substance, while many important issues are neglected. Circular logic abounds, and Hess tries to prove his point so often in so many similar ways that the book is a study in redundancy. His attempt to recreate ranching reality to conform to his contentions underscores the weakness of his position.

Further, the most important test of Hess's give-ranchers-MORE-CONTROL proposal is ignored. That is, if CONTROL by ranchers of the land they use is the key to good management, then why (according to professional reports, common knowledge, and my eyes) are the West's private rangelands in as bad or worse condition than public rangelands?

Visions is sweet dreams, especially to public lands ranchers. But a pretty panacea cannot change rangeland reality.

Reviewed by Lynn Jacobs, author of Waste of the West

Learning To Listen To The Land, by Bill Willers; \$24.95/\$14.95 paper; 1991; Island Press, 1718 Connecticut Ave, NW Suite 300, Washington, DC 20009.

David Brower, who wrote the Foreword for this anthology, sees it as a handbook of guidelines for restoring the Earth. It is indeed a notable and eclectic work. Editor Bill Willers has gathered excellent essays from EO Wilson, Reed Noss, James Lovelock, Norman Myers, Carolyn Merchant, Herman Daly, Dave Foreman, and many other new paradigm thinkers. —JD

Conservation For The 21st Century, edited by David Western & Mary Pearl; 1989; 365p; Oxford U Press, 200 Madison Ave, NYC 10016.

This collection of papers goes far toward charting a conservative course for conservation next century. Various biologists, land managers, politicians, and others contribute articles on conservation biology, management, and politics. The conservation biology section includes outstanding pieces by Jared Diamond (Overview of Recent Extinctions), Norman Myers (A Major Extinction Spasm: Predictable or Inevitable?), Storrs Olson (Extinction on Islands: Man as a Catastrophe), and John Eisenberg & Larry Harris (Conservation: A Consideration of Evolution, Population, and Life History). Part V, An Agenda for the Future, has an provocative piece by Michael Soulé (Conservation in the 21st Century: Summary & Outlook). —JD

Butterfly Conservation, by TR New; 1991; 225p; Oxford U Press, 253 Normansby Rd, South Melbourne, AUSTRALIA.

Australian zoologist TR New has written an excellent overview of butterfly conservation for the scientist and layperson alike. As New emphasizes, butterflies serve as excellent flagship species: they belong to Earth's most abundant and diverse class of organisms (Insecta), but unlike most of their classmates, they are popular and well studied (comparatively). Conservation efforts for butterflies, however, could be a mixed bag, for many species depend on open areas—such as prairies, glades, marshes and other sunny areas—and land managers like to use livestock grazing, timber cutting, and even mowing as surrogates for natural disturbances or to replace lost grasslands. New cites many examples of butterflies that have lost so much of their natural habitat that artificial maintenance of open areas or butterfly ranching may be deemed necessary to prevent their extinction. —JD

Preserving Family Lands, A Landowner's Introduction to Tax Issues and Other Considerations, by Stephen J. Small; 1990; Stephen J. Small, Esq., Boston, MA 02107; 46p; \$6.

Stephen Small's book is an introduction to the numerous land-saving options available to landowners and their families. Small covers conservation easements, remainder

interest, testamentary gifts, cash sales and gifts by will. He compares donating land to charities or conservations groups with passing it on to family members. All these options are complex, yet explained in a comprehensible manner. Small also provides names and addresses of professional planners and consultants who can help. The average landowner is unaware of the ways to protect family finances and land. I highly recommend *Preserving Family Lands* to all landowners and environmentalists. —KHF

One Square Mile, An Artist's Journal of America's Heartland, by Cathy Johnson, 1993, Walker and Co., 720 Fifth Avenue, New York, NY 10091. 210p; \$17.95.

One Square Mile is the journal of an artist and naturalist who studies, in great depth, one square mile in Missouri. Cathy Johnson explores the various communities in her local region: woods, meadow, pond and creek. In her microcosm Johnson views deer mouse, fossils, Gray Dogwood, spring flowers, fawn... and records her sightings and thoughts through words and sketches. She provides basic information about the wildlife she sees, pinpointing aspects readers can recognize on their own. Her artwork inspires the reader with vivid pictures of her subjects.

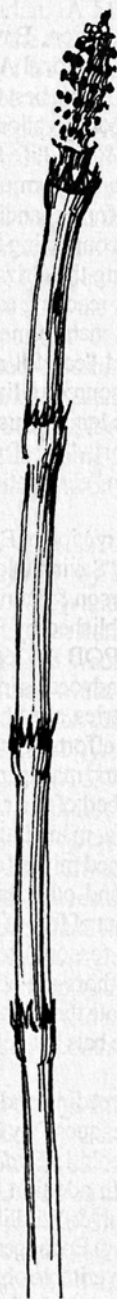
Johnson illustrates the various roles each species plays in the web of life. She shows readers how simple and important it is to become familiar with one's surrounding environment, thus encouraging bioregionalism. Johnson reveals that one need only use the naked eye to become knowledgeable of the natural world.

This book is one of a four-volume series. The other volumes focus on areas in Massachusetts, New Jersey, and California. —KHF

Nature Watch: A Resource for Enhancing Wildlife Viewing Areas, Wendy E. Hudson ed., Falcon Press Publishing Co., Helena, Montana. 199p; \$19.95.

Nature Watch, a Defenders of Wildlife publication, is a guide for the establishment of wildlife viewing areas. The report is a response to the growing interest in wildlife viewing in this country. It stresses the importance of viewing sites being sensitive to natural surroundings while providing aesthetic and educational wildlife viewing. *Nature Watch* discusses how to provide a sound wildlife viewing site which will inspire viewers to enjoy, appreciate and thus protect wildlife; educate viewers on biodiversity; and encourage bioregionalism while showing the connections between regional and global ecosystems. *Nature Watch* covers subjects varying from the selection of proper material for signs to fundraising.

Nature Watch includes pieces from diverse authors such as conservation biologist Reed Noss, Northwest Defenders of Wildlife Director Sara Vickerman, and Technical Services of Interpretive Exhibits Vice President Ed Austin. *Nature Watch* is an important resource for any groups or persons interested in educating Nature watchers. —KHF



Noteworthy Articles

A Look at Conservation Literature

by John Davis

"Sharp-shinned Hawk Populations in a Free-Fall," by Paul Kerlinger; *Peregrine Observer*, vol. 15 #1&2 (1992). A raptor expert describes the alarming decline of the once common Sharp-shinned Hawk, as documented by counts at Cape May, New Jersey, and elsewhere. Kerlinger hypothesizes that declines are partly attributable to acid rain and insecticide spraying in the birds' breeding forests.

"Preservation Is Not Enough: The Need for Courage in Wilderness Management," by Thomas Fleischner; p. 236-253 in *Wilderness Tapestry: An Eclectic Approach to Preservation*, U of NV Press, 1992. Fleischner's timely inquiry into problems besetting wilderness in this country—resource extraction in undesignated wilderness, over-use by recreationists in designated Wilderness—leads him to call for road closures, enlargement of Wilderness Areas, and biocentric education programs by the land management agencies for recreationists.

"Thinking About Population," by Craig Comstock, Ernest Callenbach, Fritjof Capra, and others; *Elmwood Quarterly*, summer 1992. The Elmwood Institute (POB 5765, Berkeley, CA 94705) is a new paradigm think tank that has enrolled an exceptionally diverse and innovative bunch of thinkers. Recently, Elmwood convened a session of such to begin "envisioning a sustainable world population." The resulting Green Gulch Declaration offers a "systemic" approach to the population crisis—addressing such underlying factors as unequal levels of consumption, harmful technologies, economic and social conditions unfair to women, and obsessive economic growth.

Keeping the Grizzly Bear in the American West: A Strategy for Real Recovery, by Mark Shaffer of The Wilderness Society, on behalf of TWS, Sierra Club, Greater

Yellowstone Coalition, Environmental Defense Fund, and National Audubon Society; 10-92. This may be the best Grizzly paper yet by mainstream conservation groups. Declaring the US Fish & Wildlife Service's Grizzly Bear recovery plan, "a formula for extinction," the report calls for expanding the proposed recovery zones, connecting them with habitat linkages, restoring the Grizzly to portions of its former range, reaching an agreement with Canada for joint management of shared bear populations, and "careful management" of roads and of resource utilization in Grizzly habitat on public lands. This last is where the report falls short; "careful management" should have been "elimination."

"The Conservation of Bats in Europe" by Paul Racey, and "Saving Old Mines for Bats" by Elizabeth Pierson & Patricia Brown; *Bats*, winter 1992 (published by Bat Conservation International, POB 162603, Austin, TX 78716). Wildlife advocates in Britain and other European countries are ahead of their US counterparts in efforts to save bats. In this country, public land managers in the West face a dilemma: Robbed of their native caves and other hibernacula, many bat species now depend on abandoned mines for homes; yet the Forest Service and other land management agencies want (out of fear of liability suits and for other better reasons) to close the mine shafts. These authors are now working with the agencies to gate the mines in such ways as to allow access to bats but not clumsy humans.

"Captive Breeding and Conservation of Lion-Tailed Macaques," by Donald Lindburg & Laurence Gledhill; *Endangered Species Update*, 11-92. In addition to publishing, as usual, the US Fish & Wildlife Service's (singularly depressing) Endangered Species Technical Bulletin (a veritable obituary), this issue of the *ESU* has an article that well addresses many of the dilemmas faced by managers of

captive populations. The Lion-tailed Macaque, native to India, is now more abundant in zoos than in the wild, due to successful captive breeding; and reintroduction potential is limited by the lack of remaining wild habitat.

"Insects: The Master Chemists" by Thomas Eisner, "Moths That Go Click in the Night" by Melinda & William Conner, and "The Importance of Stinging Insects" by Beth Norton; *Wings*, winter 1992. The Xerces Society's thrice yearly picturesque periodical is well worth the Society's \$25 membership fee. Among the fascinating facts from this issue's three feature articles are these: Some bombardier beetles can mix defensive chemicals in their glands to spray enemies with a liquid at 100 degrees Celsius—the temperature of boiling water. Some moths have evolved the ability to detect bats' echolocation signals. "Without the assistance of aculeate wasps in regulating populations of plant-feeding insects, humans probably could not produce enough food to survive." (Never forget to give thanks to aculeate wasps before commencing dinner.)

"The Wolf Test," by Jeff Fair; *Appalachia*, 12-92, p. 9-23. Jeff Fair discusses here prospects for Gray Wolf reintroduction in the Northeast. He believes that most hunters—commonly considered primary opponents to predator reintroduction—actually would support recovery of wolves in northern New England and New York. *Appalachia* (Appalachian Mountain Club, 5 Joy St, Boston, MA 02108), moving toward completion of its second century, is "America's Oldest Journal of Mountaineering and Conservation"; and it is encouraging to see such a venerable periodical run an article that essentially endorses reintroduction of large carnivores.

"The Impact of Hurricane Andrew on the Ecosystems of South Florida" by John Ogden, "Movement Corridors: Conservation Bargains

or Poor Investments?" by (you guessed it) Daniel Simberloff et al., "Dispersal Can Limit Local Plant Distribution" by Richard Primack & SL Miao, "Fragmentation of Phragmites [a genus of reeds] Habitats: Minimum Viable Population Size, Habitat Suitability and Local Extinction of Moths, Midges, Flies, Aphids, and Birds" by Teja Tschamtk, "Mechanized Logging, Market Hunting, and a Bank Loan in Congo" by David Wilkie et al., "Rejoinder to Rohlf & O'Connell: Biodiversity as a Regulatory Criterion" by Joseph Dudley, "The Red Wolf Is Not a Hybrid" by Ronald Nowak, "Toward a Science of Letting Be" by Bill Willers; **Conservation Biology**, 12-92 (\$49 for Society for Conservation Biology membership; Blackwell Scientific Publications, 238 Main St, Cambridge, MA 02142). As usual, *CB* this time includes too much important information to even begin to summarize. As you peruse it, note the sub-themes—corridors, metapopulations, and wolves—and the comments by Dudley and Willers in favor of a scientific community actively engaged in defending wild Nature. Note also the common feeling among thoughtful biologists that—withstanding the widely publicized findings of Jenks & Wayne (which showed in Red Wolves genetic similarities to Gray Wolves and Coyotes not befitting a separate species)—*Canis rufus* is unique at least at the sub-specific level and worthy of protection in any case.

Buy Land—They Don't Make It Any more; **The Northern Forest Forum**, Winter Solstice 1992. PAW founder and Wildlands Project board member Jamie Sayen just started *Northern Forest Forum* last year, and already it is receiving rave reviews from throughout the Northern Forest region—northern Maine, Vermont, New Hampshire, and New York. The theme of this fine new journal (POB 6, Lancaster, NH 03584; \$12 or more a year) is "Working for Sustainable Natural & Human Communities." The sub-theme of this second issue is land acquisition. If state and federal governments would show a modicum of ecological and economic sense, they could now buy and preserve 10-15 million acres in northern New England and New York for less than the US spent on four Stealth bombers.

The third *Forum*, just out, includes "A Talk with John Collins" (the new and pleasantly prudent Chairman of Adirondack Park Agency), and news on parcel purchase possibilities in the Adirondacks and other Northern

Forest areas. The tone is positive: With the Northern Forest Lands Council and even industry representatives saying that the Northern Forest needs a system of ecological reserves, the tide seems to be turning.

"Family Planning Amazon Style" by Warren Hern, "A Crossbill's Twist of Fate" by Craig Benkman, "Conecuh Bogs, Alabama" by Robert Mohlenbrock; **Natural History** (POB 3030, Harlan, IA 51593; \$19), 12-92. Hern (author of the brilliant paper "Why Are There So Many of Us?" which showed human civilization to be analogous to cancer) here describes overpopulation in Shipibo tribes of the Peruvian Amazon. Shipibo numbers multiplied as modern society's incursions undermined traditional customs that held population in check. Benkman describes how human introduction of the Red Squirrel to Newfoundland—to help restore the overtrapped Pine Marten—is imperiling that island's unique subspecies of Red Crossbill. This time in his column, This Land, Mohlenbrock finally criticizes the Forest Service, for disrupting the fire regime of and establishing plantations around Alabama's pitcher plant bogs.

"On Setting Goals: From Snapshots to Movies and Beyond" by Peter Dunwiddie, "Biodiversity Conservation in Europe and North America: Grasslands—A Common Challenge" by David Wedin; **Restoration & Management Notes**, winter 92. The biannual, thick, rich magazine of the Society for Ecological Restoration (\$17/yr; SER, 1207 Seminole Hwy, Madison, WI 53711) again presents here scores of pages of information and ideas important for habitat defenders and restorers. See especially Peter Dunwiddie's warning not to artificially maintain restored ecosystems in a static state: allow natural flux. David Wedin's comparison of restoration challenges in Europe and North America shows that Europe still has more native diversity and more opportunities for recovery than we commonly assume.

"50 Simple Things Bill Clinton Can Do to Save the Earth," by Gar Smith; **Earth Island Journal**, winter 92/93. A sequel to his "50 Difficult Things You can Do to Save the Earth," *EIJ* Editor Gar Smith here presents some modest but good steps our new President could take toward a healthy planet (such as listing all CITES Appendix II species as Threatened under the Endangered Species Act;

and declaring a national moratorium on unsustainable logging). Encouragingly, Gar says Clinton has actually accomplished a few of the tasks. (Please, though, Gar, reconsider #30. The clearcut Pacific Northwest should be restored to its natural condition, not planted "with fast-growing hemp to prevent soil erosion" and produce pulp.) *EIJ* is always packed with information you'll not find elsewhere, on imperiled species, ecosystems, and indigenous cultures. Join Earth Island Institute to receive the most diverse international environmental news quarterly available (for \$25; 300 Broadway, Suite 28, San Francisco, CA 94133).

"Northern California Salmon, Steelhead and Cutthroat," by Pat Higgins; **Wild California**, winter 93. Biodiversity Network (POB 397, Garberville, CA 95542), a project of EPIC (Environmental Protection & Information Center) has started a newsletter covering California's "ecosystems on the brink." This article discusses the status—grim, of course—of northern California's stocks of sea-run salmonids. Already, 49 stocks of these are at risk of extinction. See also in *Wild California's* inaugural issue "Southern California's Coastal Sage Scrub," describing the plight of this unique "drought-deciduous community adapted to a Mediterranean climate ..." ranging "from Southern California to northern Baja California [which] contains more than 60 endemic species of plants and animals."

"Biodiversity Conservation in Running Waters," by David Alland & Alexander Flecker; **BioScience**, 1-93. The authors summarize threats to lotic systems and how to address them. Freshwater fishes are probably the last vertebrate group in which many of the species are yet to be identified by science. See also in this issue "Social Foraging Classes in Raptorial Birds (p.14-20)," which speculates that highly developed cooperative hunting may be important for many raptors, in particular Harris's Hawk in the Southwest.

"Orchids on the Rock" by Todd Boland, "Forest Habitats of Newfoundland" by William Meades, "Serpentine Barrens" by Michael Burzynski & Anne Marceau; **Wildflower**, winter 93. *Wildflower* (\$30; Canadian Wildflower Society, 4981 Highway 7 East, Unit 12A, Suite 228, Markham, Ontario, Canada L3R 1N1) has begun a series of issues focusing on the flora of particular regions. This first bioregional

number highlights the plants of Newfoundland. Subscribe now to receive the issue (summer 93) featuring flora of New York's Adirondack Mountains.

"A Special Fondness for Beetles" by Stephen Jay Gould, "Species in a Bucket" by Edwin Pister; *Natural History*, 1-93. Gould waxes eloquent, as usual, in his column This View of Life; here using Haldane (a prominent British evolutionary biologist earlier this century, not to be confused with an ozone-depleting chemical) and that biologist's famous one-liner (about the Creator having "an inordinate fondness for beetles") to underscore the incredible diversity of life: perhaps as many as 150 million species, some biologists now say, with about half of these being arthropods (mostly insects) and perhaps 40% of these arthropods beetles.

"Species in a Bucket" is a remarkable story about how one man (Pister) literally held the fate of an entire species—the Owens Pupfish, one of several Death Valley area pupfishes critically imperiled by human-introduced game fishes—in a bucket. Luckily, the author did not stumble, and *Cyprinodon radiosus* still survives.

See also in this issue the enthralling articles on mantises (and how they use ultrasonic hearing to evade bats), Spotted Hyenas (which live in matriarchal clans) and skuas—"the only bird that breeds both in the Arctic and Antarctic." (Don't take this quote literally: Though they may be more libidinous than many other birds, an individual skua is content to breed in a single hemisphere—perhaps even a single island, such as New Zealand's Enderby Island.)

"Gap Analysis: A Geographic Approach to Protection of Biological Diversity," by Michael Scott, Frank Davis, Blair Csuti, Reed Noss, Bart Butterfield, Craig Groves, Hal Anderson, Steve Caicco, Frank D'Erchia, Thomas Edwards Jr, Joe Ulliman, and Gerald Wright; *Wildlife Monographs*, #123 supplement to *The Journal of Wildlife Management*, 1-93. The Wildlife Society (5410 Grosvenor Lane, Bethesda, MD 20814) publishes articles too lengthy for its *Journal* as *Monographs*. Many pertain directly to conservation efforts. After a prolonged bout of author identification, this one summarizes the strengths and weaknesses of Gap Analysis. Outside the orthodontist's office, Gap Analysis is a method to find lacunae in protection systems—areas or taxa not represented in protected natural areas.

PAW Journal Special Obliterate! Revegetate! Issue (vol 2#3) Featuring the New and Improved Road Rippers Guide. PAW here reprints, expands, and updates the Killing Roads tabloid produced by *Earth First!* and Biodiversity Legal Foundation three years ago. This may now be the best single tool—of the literary sort—for activists wanting to stop and close roads. For a copy, send a hefty donation (\$2.50 is the suggested donation, but PAW deserves more) to Preserve Appalachian Wilderness Network, 117 Main St, Brattleboro, VT 05301 (802-257-4878).

"Icy Indicators of Global Warming" by Derek Denniston, "India's Walled-In Wildlife" by Howard Youth; *WorldWatch*, 1-2/93 (POB 6991, Syracuse, NY 13217; \$15). Naysayers of anthropogenic global warming should read this alarming report of retreating glaciers worldwide, especially high altitude glaciers in the tropics, contrary to computer predictions. Naysayers of human overpopulation should read Youth's report on the population-related problems besetting India's many parks: poaching, isolation, fuelwood gathering...

"Landowners turn the Fifth into a sharp-pointed sword," by Florence Williams; *High Country News*, 2-8-93. As Ray Vaughan warned in our winter issue ("The Brethren Strike Back") and Florence Williams explains in detail here, the property rights movement (as manifested under various euphemistic monikers such as Wise Use Movement, Americans for Free Enterprise, and Blue Ribbon Coalition), is using the takings provision of the Fifth Amendment to fight environmental protection laws. Anyone wanting to keep abreast of Western news should read *HCN* biweekly (Box 1090, Paonia, CO 81428; \$28).

"Operation Conservation," by Eddie Nickens; *Nature Conservancy*, 3-4/93. The Department of Defense manages about 25 million acres in the US. TNC is now working with the DoD to inventory and protect the rich and seldom appreciated biodiversity on this country's military lands, many of which have been essentially off-limits to humans—but not their bombs—for decades.

Oiko: The Alternative Environmental Digest; \$20/yr; POB 115, Greenwood, VA 22943. This new quarterly abstracts articles from "radical, grassroots [redundant?] environmental" periodicals—somewhat like *Wild Earth's* Noteworthy Articles, but decidedly less

pedantic and sesquipedalian. *Wild Earth* is among the publications *Oiko* abstracts.

"Beyond the Reality Principle," by Theodore Roszak; *Sierra* 3-4/93. Notwithstanding its consistently lustrous appearance, *Sierra Club's* magazine is running some important articles these days (*Sierra Club* membership \$35; Dept J-186, POB 7959, SF, CA 94120). Well-known author Theodore Roszak (*Person/Planet*, *Beyond the Wasteland*, etc.) introduces here (as in his new book *The Voice of the Earth*) "ecopsychology." Granted, new-age neologisms tend to turn the traditional tummy, but Roszak argues convincingly for an ecological conception of sanity which could help mend the human/Nature split and in so doing end our war on Earth. See also in this issue Margaret Knox's article on how Native Americans are facing corporate threats to their lands ("Their Mother's Keepers"), John Daniel's chronicle of the death of Pacific salmon ("Dance of Denial"), and Terry Tempest Williams's account of her search for Big Horn—and encounter with big bombs—in Arizona's Cabeza Prieta National Wildlife Refuge ("All That Is Hidden").



illustration by Heather B. McDonald

Announcements

THE FUND FOR WILD NATURE, SEEKS GRANT PROPOSALS

The Fund for Wild Nature (FWN) exists to support no-compromise defense of wilderness and biodiversity with a focus on grassroots activism and making the insights of Deep Ecology more widely accessible. FWN is restructuring the Fund to become more effective in generating funding and otherwise supporting radical environmental projects. FWN needs new Board members who want to work directly on fundraising. FWN is forming an Advisory Group to supplement the resources of the Board and plans to resume direct funding of projects in a few months. In the meantime, we want to receive proposals that do not require instant funding and work with activists to develop project ideas into well-formulated proposals that we can help circulate. If you have a proposal, project idea, or suggestions for Board or Advisory Group members, please contact us (The Fund for Wild Nature, POB 42496, Tucson, AZ 85733, or call David Parks (415) 586-6831).

BIOMEDICAL SCIENTISTS URGED TO SUPPORT ENDANGERED SPECIES ACT

Reauthorization of a strong and well-funded Endangered Species Act is a must for the health and survival of many wild things. In an attempt to use the "nature as warehouse" (Norton) approach in convincing legislators to support a stronger act, the American Institute of Biological Sciences (AIBS) is encouraging biomedical researchers to contact the AIBS's Public Policy Department. AIBS is attempting to establish a broad coalition representing the interests of the biomedical and research communities in the reauthorization process. Without the products of the planet's biological diversity, the disciplines of medicine and pharmacology would be severely restricted. Future advances in biochemistry and medicinal chemistry, for instance, depend upon access to the Earth's species richness. Scientists need to make this point to their Congressional Representatives in a concerted and organized effort. Please broadcast this appeal among your colleagues and friends. For more information,

please contact Jennie Moehlmann, Public Policy Manager, AIBS, 730 11th St NW, Washington, DC 20001.

NATIONAL FOREST REFORM POW WOW

Heartwood will host the 7th annual National Forest Reform Pow Wow, Memorial Weekend, May 28-31, 1993 at Cathedral Domain, a camp within the Daniel Boone National Forest. This event is the largest gathering of North American forest activists: grassroots groups, political leaders, and woods lovers. The conference is being sponsored by the Forest Reform Network, Heartwood and other forest protection groups.

The Pow Wow will focus on the connection between forest health and community health, and between wasteful consumption and forest destruction. The conference includes workshops, walking tours, and panel discussions. Topics will range from Endangered species to the Wise Use Movement. For more information contact: Andy Mahler (812) 723-2430, Cathy Guthrie (606) 886-2034, or Heartwood, POB 402, Paoli, IN 47454 (812) 723-2430.

INTERNATIONAL CONFERENCE ON TORTOISES AND TURTLES

In 1989 an international consortium of turtle specialists produced a global Conservation Action Plan as a response to the rapid decline in turtle populations. The plan calls for establishing sanctuaries and curbing the trade in declining species. Conservation, Restoration, and Management of Tortoises and Turtles—An International Conference, July 11-16, will provide educational forums aimed at strengthening the Conservation Action Plan. For more information contact Turtle Recovery Program—Conference Coordinator, American Museum of Natural History, 79th Street & Central Park West, New York, NY 10024-5192.

THE GREENDISK PAPERLESS ENVIRONMENTAL JOURNAL

At last, for all you computer addicts who cannot tear your eyes away from the glowing screen—an Environmental Journal on disk.

The GreenDisk provides information on a vast array of subjects: biodiversity news, environmental employment opportunities, book reviews, announcements, conferences, contacts... GreenDisk is published in IBM and Macintosh formats on 3.5" and 5.25" disks. The subscription is \$35 (U.S.) for six issues a year. For more information contact The GreenDisk, POB 32224, Washington, DC 20007.

WILDLANDS PROJECT SPECIAL ISSUE ON GREENDISK

A forthcoming issue of The GreenDisk will focus on The Wildlands Project and its vision for North American wilderness recovery. Additionally, the folks at GreenDisk have arranged for a large portion of *Wild Earth's* special issue on The Wildlands Project to be available by FTP (file transfer protocol) over the Internet. Contact: greendisk@igc.apc.org for details on how to access this information.

WORLD NO GOLF DAY

Currently there are approximately 24,000 golf courses worldwide, with thousands more under construction. The United States has 13,000. The average area of one golf course is 250 acres, thus 3.4 million acres of land in the U.S. are used for golf courses. The proliferation of golf courses has resulted in severe ecological problems: loss of forests and wildlife, depletion of water resources, soil and water contamination from silt and chemical run-off, and air pollution from sprayed chemicals.

The Global Network For Anti-Golf Course Action (GNAGA), a group formed in Japan, has declared April 29, 1993 "World No Golf Day." This date marks GNAGA's first anniversary. People around the world will express opposition to golf course development through rallies, demonstrations, symposiums, etc.. Also the first international "World No Golf Day" conference will be held April 24-28, 1993 in Penang, Malaysia. Please send your ideas and questions to: USGNAGA Liaison, Donna Wong, 1525 Uluha'o Street, Kailua, HI 96734; (808)261-8292.

JOB ANNOUNCEMENT: STAFF CONSERVATION BIOLOGIST

The Wildlands Project seeks a STAFF CONSERVATION BIOLOGIST. Reporting to the Science Director, the biologist will manage the scientific program of this long-term project to restore native biodiversity and wilderness conditions across North and Middle America. The Wildlands Project is a nonprofit corporation coordinating efforts of grassroots conservation groups in cooperation with scientists and other professionals. The staff conservation biologist will conduct workshops on reserve design and other topics relevant to regional conservation planning; initiate, conduct, and supervise preparation of map-based conservation plans; and correspond with conservation groups, scientists, press, and the general public about The Wildlands Project.

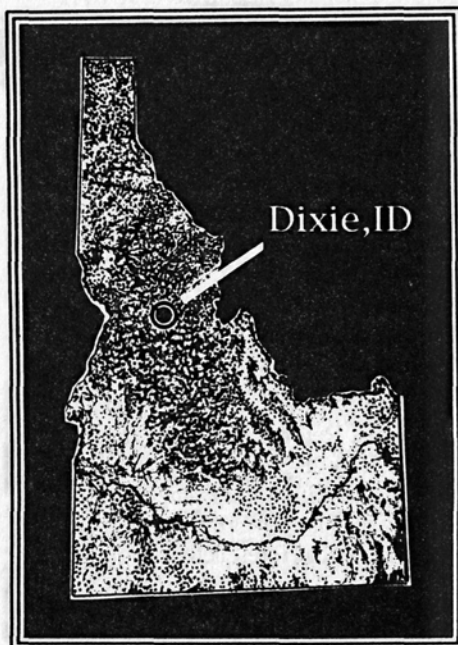
QUALIFICATIONS: Ph.D. in ecology or related field, with emphasis on conservation. Excellent organizational and communication skills. Peer-reviewed publication record required. Experience in field biology, biological inventory, reserve design, geographic information systems or other mapping, and conservation politics. Strong personal commitment to biocentric conservation. Salary commensurate with qualifications. Send cover letter and c.v. to Reed Noss, Science Director, The Wildlands Project, 7310 NW Acom Ridge, Corvallis, OR 97330.

EASTERN OLD-GROWTH FOREST CONFERENCE

A two day conference on ancient forest ecosystems in the eastern United States will be held on August 26-27 at the University of North Carolina at Asheville, accommodating 300 attendees. The theme of the conference is the preservation of ancient ecosystems. Speakers include Donald Leopold and Robert Zahner. For information contact Robert Leverett, 52 Fairfield Ave., Holyoke, MA 01040 and see *Wild Earth* summer issue.

DANA LYONS NORTHWEST TOUR

Eco-troubadour Dana Lyons, along with Lone Wolf Circles and The Howling Gonzo Orchestra, round out their tour of the Northwestern US in April and May. April 16: Portland, OR; 17: Olympia, WA; 18: Lopez Island, WA; 20: Bellingham WA; 21&22: Tacoma, WA; 23-25: Randle, WA; 30: Walla Walla, WA. May dates are planned for Spokane, Nevada City, Chico, and Davis. Call Karen Lohr, Tour Coordinator for details 919-877-4109.



IDAHO'S WILDERNESS NEEDS DEFENDERS

Your taxes are being used to fragment and destroy the largest complex of wild, roadless country in the lower 48 states. The Forest Service is building 145 miles of road and plans to hack a 76,000 acre wound in the Nez Perce National Forest in Idaho. The embattled area, the Mallard/Cove Drainage, is situated on the northern border of the Frank Church River of No Return Wilderness and south and east of the Gospel Hump Wilderness. Mallard/Cove is a vital corridor between those two Wilderness Areas. Mallard/Cove is home to Gray Wolves, Chinook Salmon, Moose, bear, several owl species, Wolverine, Fisher, and countless other forms of life. The drainage has large pockets of old growth, with giant Ponderosa Pine, Douglas-fir, and Grand Fir. The forest is spotted with meadows, marshes, and bogs, each adding to the diversity and beauty of the landscape. Will you stand by while this wilderness is butchered?

Look at a map of Idaho. See that big green area in the middle? You are looking at the last area in the lower 48 states where we can set aside enough land to perhaps preserve a functional, self-sustaining coniferous forest ecosystem.

Look at the Idaho map again. Draw a line from your abode to Dixie, ID and get there this summer. The Ancient Forest Bus Brigade is providing two free meals a day and camping is free.

For more information contact: Wild Rockies EF!, POB 9286, Missoula, MT 59806; 406-721-4255

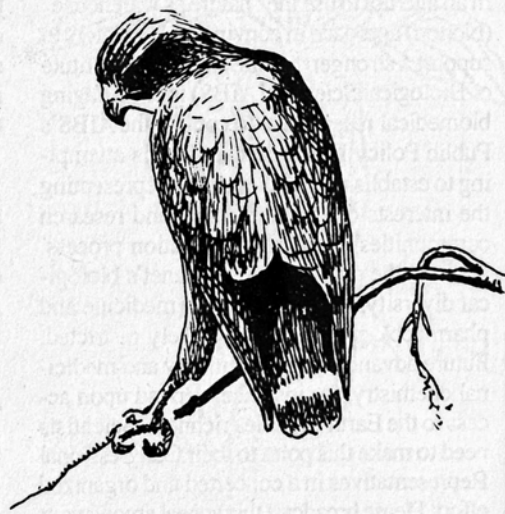
Ancient Forest Bus Brigade, c/o Steve Paulson, Rte 1, Box 14C, Lenore, ID 83541

BRITISH COLUMBIA SUMMER EXPEDITION

Photographers, scientists and writers are invited to a summer expedition along the coast of British Columbia to study BC's remaining temperate forests. The objective of the trip is to inventory remnant tracts of native forest along the coast. Upon completion of the trip, an international campaign will be launched through articles, slide presentations, documentaries and lectures to educate the public on the plight of BC's forests. Donations are needed, as the expedition and campaign are expected to cost \$100,000. For information, contact Jay Zimmerman, Western Canada Wilderness Committee, POB 8596, Victoria, BC V8W 3S2 Ph/Fax: 604-388-9292; or Peter McAllister Ph: 604-477-9739 or 604-558-0043. See this and next issue of *Wild Earth* for information on BC wilderness.

NATIONAL CARRYING CAPACITY ISSUES CONFERENCE

Carrying Capacity Network will host a conference on National Carrying Capacity Issues on June 4-6, 1993 at the Hyatt Regency Crystal City in Arlington VA. The conference theme is US Carrying Capacity: Priorities for the 90s... environment, economy, population, immigration, and resources. For details and registration information, contact Mama White at CCN; 1-800-466-4866 or 202-879-3044.



juvenile Broadwing Hawk, by Bob Ellis

Seeing Bear

Walking Petersburg Creek
the Tlingit's Seektkah Heenuk'w,
across the Wrangel Narrows
from the mud-flat sloughs of Mitkof Island
I pass the last cabin
last sign
last mark on the map
& come upon brown steaming mounds of berry scat,
piles of gutted humpies, half-chewed, fins still twitching.

Through skunk cabbage rank with growth
& devil's club waiting in ambush
its honed thorns prickly with menace,
I skirt innocent gooseberries
expecting the worst,
prepared around each bend for some dark hulk
swatting fish
& the ultimate terror of *Ursus horribilis*.

Thick groves of old growth
soak up light
& squeeze out shapes
the stab of strange limbs
flicker of breeze.

No quick exit out this maze of Sitka spruce
tangled arctic bog
muskeg carnivorous with quivering insects
caught in the sundew's last embrace.

Lost in this still untamed Alaskan bush
where two-leggeds have no more weight
than the meat they carry on their bones
puffing my tin whistle like a Webelos,
clapping hands
singing out of dread not joy,
I keep seeing the hundred hides of Death,
its snout hairy
fangs bristling
about to attack.

Shadows leap out at me from the brush,
startled
hungry
rearing up on hind legs
so near I can smell their panic
wild as fish breath
murder growling in their fierce gaze.

To run or play dead?

Bruin gone berserk & bounding towards me
slashed muscle
the snapped arm ripped from its socket
claws long as Bowie knives
eyes like smoking volcanoes.
its bulk crushing me into the earth.

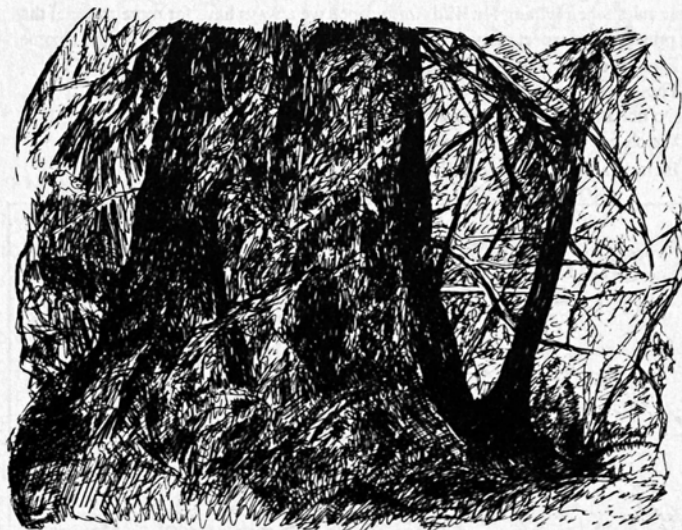
Seeing hot flash
my whole life engraved on a salmonberry
ground to pulp
in the molars of a steel-trap jaw.

Truth is
walking that trail
I meet no one
neither grizzly nor deer,
not even a mouse munching lichen.

The air is crisp
clouds huddled against nameless peaks.

Perhaps for the first time in my life
I am alone
with the dark shape of myself.

—Lone Cone Free Poem



Old Growth Sitka Spruce, by Peggy Sue McRae

ABOUT SUBMISSIONS

Wild Earth welcomes submissions. **Poems** should be sent directly to our Poetry Editors, Art Goodtimes (Box 1008, Telluride, CO 81435) and Gary Lawless (Gulf of Maine Books, 61 Maine St, Brunswick, ME 04011). Poets should realize that we receive hundreds more poems each quarter than we can publish.

Artwork, articles and letters should be sent to the Art Director or Editor at our main address (POB 492, Canton, NY 13617). *Wild Earth* welcomes submissions of original illustrations or high-resolution facsimiles thereof. Botanical/zoological/landscapes are eagerly sought, with depictions of enigmatic micro-flora especially prized. Representational drawings should include common and scientific names.

Articles/letters should be typed or neatly hand-written, double-spaced. Those who use a computer (heaven forbid) **should include** a copy on disk. We use Macintosh but can convert from PCs ("personal [like hell] computers"). Writers who want their material returned should enclose a self-addressed stamped envelope.

Articles, if accepted, may be edited down for space or clarity, though if substantive changes are made, the author's approval will be sought. Articles with significant scientific content (e.g., most biodiversity reports and wilderness proposals) will be reviewed by our Science Editor for accuracy and clarity. Wilderness proposals will also be reviewed by our Executive Editor, and controversial or complicated pieces may be peer reviewed. Lengthy biologically-based articles generally should include literature citations.

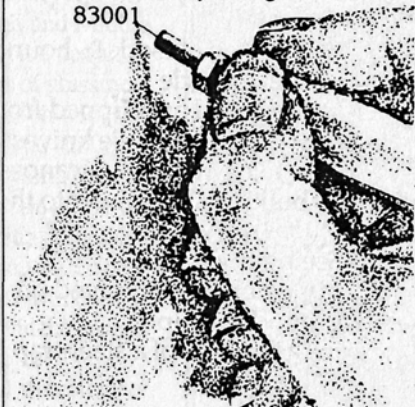
Wild Earth occasionally reprints articles; but due to the surfeit of submissions we receive, reprints will usually be low priority. If an article is being submitted to other publications as well as *Wild Earth*, the writer should indicate so. We usually try to avoid duplication. We generally welcome other periodicals to reprint articles from *Wild Earth*, provided they properly credit the articles.

In matters of style, we follow the *Chicago Manual of Style* loosely and Strunk & White's *Elements of Style* religiously. Also, we suggest that authors remember several basic rules when writing for *Wild Earth*, since we always have far more material than we can print and we expect our writers to be lucid, perspicacious, and ineffably winsome.

1. Eschew surplusage (Twain).
2. Thou shalt not verbalize nouns (Abbey 1988).
3. Do not affect a breezy manner (Strunk & White 1959).
4. Watch your antecedents (Davis 1988).
5. Include a goddam floppy (Butler 1992).

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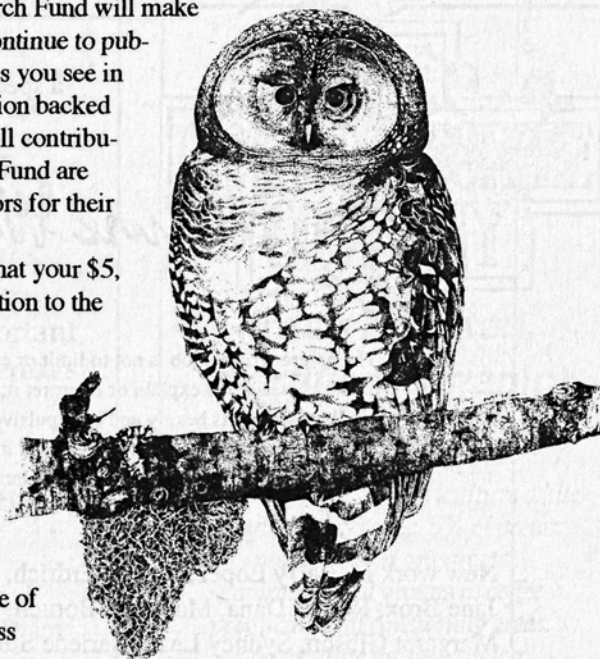
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THE RESEARCH FUND

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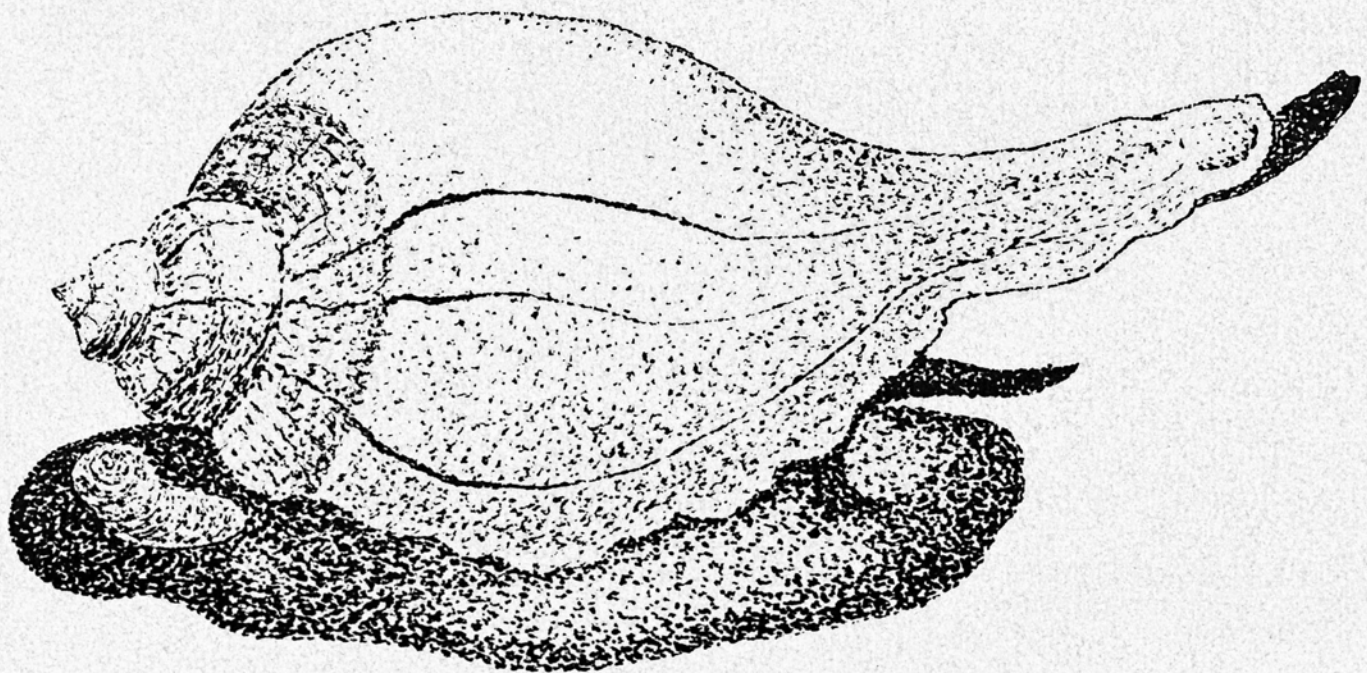


* O.K. Here's our gimmick. For a limited time, all donors sending \$75 or more will receive a signed, limited edition print of the Northern Spotted Owl by artist Peggy Sue McRae. This is the same, stunning image that appeared on the cover of *Wild Earth*'s premiere issue. ↑

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(the wunnerful, wunnerful)

Channeled Whelk (*Busycon canaliculatum*)



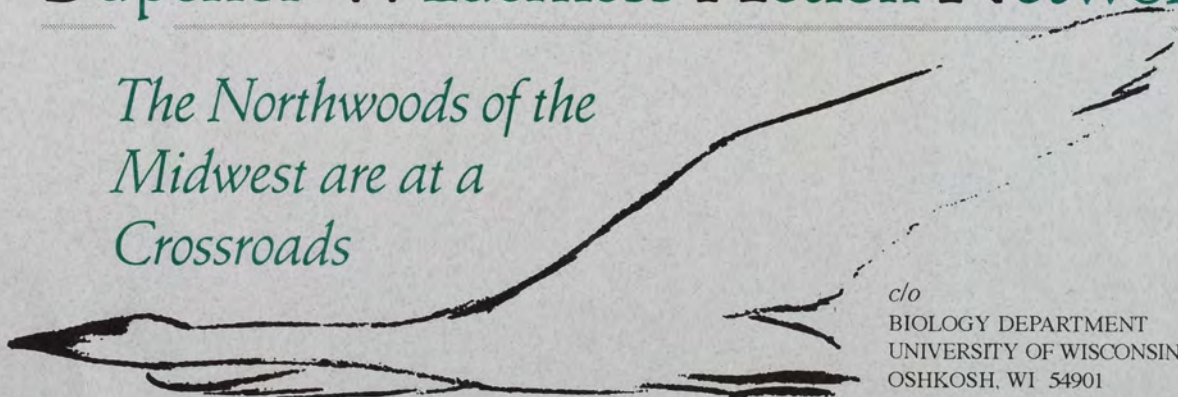
Busycon canaliculatum is a marine snail of the Atlantic Ocean. It is native to shallow bay waters from Cape Cod, Massachusetts, to St. Augustine, Florida, where it enjoys a sedentary life, dining on clams and oysters. (Cousin Lawrence, too, was rumored to favor an indolent and sumptuous lifestyle.) A Channeled Whelk is typically about 4-7 inches tall (or long, or wide, or in diameter...one never can be sure with a gastropod), and buffy gray in color, with a yellowish aperture. Native Americans used whelk shells for wampum. The Channeled Whelk is one of a huge number of marine organisms that humans have—sometimes unwittingly, always unwisely—introduced to foreign waters: it is now found in the Pacific Ocean, too. Rachel Carson described the Channeled Whelk, and its near relative the Knobbed Whelk, in her beautiful book *The Edge of the Sea*.

Artist Jennifer Wiest (whose work also appears on p.24) is a Friend of the Gastropods and New Jersey resident.



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Although there is still potential for wilderness recovery in these north woods, the possibilities are dwindling, for development is proceeding rapidly. While national attention is focused on points west, clearcutting is rampant, even in those few tiny pockets of old growth that escaped the axe at the turn of the century.

The SWAN philosophy is ecocentric, and its aims are to initiate and/or support the following:

- A proposal for a biodiversity reserve system based on the concept of cores, buffers, and corridors.
- GIS mapping and gap-analysis efforts.
- An economic analysis of the Bioregion.
- Restoration of native ecosystems and communities, and the reintroduction of extirpated species.
- The early publication of a quarterly newsletter.
- A biodiversity educational program which will involve travelling speakers and the production of films.

501(c)(3) tax-exempt status is pending. Meanwhile we are seeking ecocentric individuals and groups to join the SWAN network. Send \$20 or whatever you can spare to help this SWAN to fly. Write to the above address, or call (414)424-3064 or (414)233-8997. Let us know the area of the Bioregion of special concern to you.

