EARTH FIRST! JOURNAL

May 1, 1990 **Vol. X, No. V**

IN DEFENSE OF WILDERNESS & BIODIVERSITY THREE DOLLARS

BJ

Hawaiians Fight for the Rainforest

Geothermal Development Threatens Largest Remaining Stand in U.S.

by Paul Faulstich

On March 25, 141 were arrested as part of the largest demonstration yet against the drilling of geothermal wells in the Wao Kele O Puna Rainforest on the Big Island of Hawaii. The geothermal project, undertaken by True Geothermal Company and endorsed by Hawaii's governor and other high-powered, short-sighted people, has already invaded the largest intact tropical lowland rainforest in the United States. The demonstration drew over 1500 protesters, representing more than 30 groups concerned with social and environmental issues, including Earth Firstlers from Hawaii and the mainland.

The peaceful protest was staged in front of a 12 foot high fence dubbed "True's Berlin Wall," constructed in front of the drilling site two days before the action. In honor of those arrested, for trespassing or obstructing police, the remaining protesters tied green ribbons and Hawaiian Ti leaves on the fence.

Complete with Jamaican drums, Native Hawaiian prayers, and "Reclaim the Rainforest" banners hanging from bamboo poles, the demonstration was also a celebration. Singing "We shall overcome," and chanting "Hey TRUE We're Talking to YOU, Get OUT of Hawaii," protesters let it be known that we won't stop until the rainforest is safe!

The Big Island Police Chief Victor Vierra wants each of the arrested protesters to be assessed $400 in addition to their other fines in order to cover police and National Guard expenses for "keeping peace" at the protest. Vierra claims that their operation cost the state and county over $55,450. The three dozen armed police — some flown in from the neighboring island of Oahu — were unnecessary since the demonstration was intended to be non-violent.

The True geothermal project is planned as the biggest energy project undertaken in Hawaii. The 27,000 acre rainforest slated for development is the only refuge in Hawaii where native birds have developed immunity to exotic avian malaria. Some 95% of all plant and animal species in the area are found in Hawaii and nowhere else.

The active volcano Kilauea rises gently above the lush Wao Kele O Puna (meaning "the Rain-belt of Puna") forest. This is a successional rainforest; periodic lava flows have created a unique ecosystem. Plants and animals have developed in a complex synergism with volcanic activity.

The geothermal wells and power plants would be major pollution sources. Geothermal wells produce hydrogen sulfide, a toxic gas that, when mixed with air, becomes sulfuric acid (one of the main components of acid rain). Typical of Hawaii's lax environmental policies, the state has no air quality standards for hydrogen sulfide. Biologists and others fear that the toxic emissions would drive off birds and insects that pollinate the great Ohi'a trees. This pollination is essential for the reseeding of areas inundated by lava. Hawaii is in one of the world's most geologically unstable areas. One substantial earth movement could destroy pipelines, thereby dispersing toxins into the air and soil.

Noise pollution is another factor with unknown effects on wildlife. Because of the enormous pressure created by the surfacing of underground gases, the geothermal wells need periodic venting, a process with a decibel level of a 747 taking off.

To produce the 500 MW of electricity, at least 140 geothermal wells would have to be drilled. These wells would produce vast quantities of toxic brine containing arsenic, lead, mercury, manganese, and cadmium along with other heavy metals and toxic chemicals. Soil and groundwater contamination from settling ponds filled with this brine would be difficult to avoid and hard to detect. Reinjecting the brine back into the earth has been suggested, but might not be possible because of the unique lava tube ecosystems in this region. Lava tubes are underground corridors formed when molten lava flowed through the area; they are habitats for rare fauna, including spiders and insects that live only in these formations. The reinjection of toxic brine could destroy these unknown ecosystems.

While only about 1% of the rainforest (300 acres) would be *directly* destroyed by bulldozing, the whole area would be subject to fragmentation by a network of roads, pipes, and powerlines. The acreage would be distributed throughout the forest. Fragmentation makes the forest vulnerable to invasion of harmful non-native species. Hawaii contains over half the Endangered Species of plants and animals in the US.

Prior to 1985, the Wao Kele O Puna Rainforest was a natural reserve set aside to protect native wildlife. In 1985 this land was opened for development through a state-organized land swap. Over 27,000 acres of "public trust" land in the Puna Forest Reserve was traded for 25,000 acres of adjacent private land at Kahauale'a. This adjacent land

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photo by Karen Pickett

To protest the "timber pact" between state politicians and timber executives in Northern California, 20 activists ambushed a truck carrying old growth logs in mid-February. Five people climbed onto the logs and chained themselves in place, stopping the truck for most of the afternoon and thereby backing up traffic for 18 miles. The traffic jam included a long line of log trucks coming out of a Pacific Lumber log deck.

A Day of Action for Temagami

Earth First! Eastern Canada recently decided to make its presence known. Many of the local EF!ers had been active on the Temagami issue (see March *EF!*) so we held a Temagami Day of Action:

March 26

0400 - Activists hang a banner on the Ontario Provincial Premier's Constituency Office in London Ontario. The banner demands a halt to logging in n'Daki- Menan (Temagami), land claimed by the Teme Augama Anishnabai.

0730 - National radio announces that today is to be a Day of Action aimed at the Provincial Government. The report discusses Civil Disobedience and the group responsible — Earth First!

0900 - Twenty activists rally at the office of Bernard Granmaitre in Vanier; 3 of them blockade the door in support of the Teme Augama. Two other groups of EF!ers, finding their targets closed, roam Ottawa: crimes looking for a place to happen.

1000 - Activists gather outside the offices of Cabinet Minister Richard Patten; 12 peacefully occupy the office. Nine activists occupy the offices of Hans Daigeler in Nepean. In Toronto people rally outside the offices of the Ministry of Natural Resources.

1030 - From the Toronto rally, 23 people move around the corner to the Provincial Legislature, leap the barricades and rush inside the building to block the main stairway; 9 lock on to the stair railing. Across the province radio stations give regular bulletins as news of actions come in.

1100 - In Kingston, Guelph, Hamilton, St Catherines, Thunder Bay, Ottawa, London, Stratford, and Kitchener over 1000 people gather to march on the Offices of their MPP's with the same demand: Stop Logging Native Land! In many cities people came out despite high winds and cold weather. Those who had the foresight to do civil disobedience are warm and comfortable in various offices.

1200 - Rallies and marches are in full swing. Demands and petitions are presented, thousands of leaflets and information packages distributed, and dozens of press interviews are aired across the province. Police and security remove the protesters from the steps of the Legislature and fine those who locked on.

1230 - In Kingston 7 are arrested as they chalk slogans on the office of Kenneth Keys. Thirteen more enter the office and 2 lock on.

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FREEDOM RIDERS NEEDED TO SAVE THE FOREST

Mississippi Summer in the California Redwoods

Following in the footsteps of the brave civil rights activists of the 1960s, Earth First! is calling for a Mississippi Summer in the California Coast Redwoods. Thousands of students, activists and retirees are being summoned to northern California to non-violently put their bodies on the line in defense of the most famous ecosystem in the world.

Response has been tremendous. Protesters will begin to arrive in May and continue coming into September, to blockade logging roads, climb giant trees, and peacefully picket logging corporations. "It's going to be a long hot summer," said Judi Bari of Ukiah Earth First! "The eyes of the nation will be watching us."

'Non-violence' will be the password for all participants. "All activists will be required to take non-violence training," said EF! activist Greg King. "Any participant not in full agreement with non-violence as *the* principal concern during the actions will not take part in Redwood Summer." The non-violence code will include prohibiting property destruction and physical or verbal threats to loggers or police.

Incoming Freedom Riders will check in at hospitality houses and then be sent to campsites or lodgings. "We've had an incredible response from people opening their doors and their land," said Pam Davis of Sonoma County EF!

Forest activists believe the comparison to Mississippi Summer is accurate because of both the tactic of calling for outside help and the battle against a form of bigotry, which EF!ers call speciesism. "Many humans see the Earth and other species as something to be conquered and enslaved," said Darryl Cherney of Garberville EF! "We believe that the Earth deserves civil rights the same as people do. A redwood, a spotted owl, a black bear all have a right to exist for their own sake, irrespective of what value they may have for human profit."

But there is another kind of bigotry: Prejudice against environmental activists. Last summer, there were three incidents of violence against protesters [see related article]. Two teams of attorneys are volunteering their services to both help activists who are arrested and ensure that discriminatory law enforcement doesn't occur.

Redwood Summer organizers don't want bigotry toward timber workers either. "The battle is not between the timber workers and environmentalists, it's between giant logging corporations and our community," said Bari, who organized labor unions for seven years and is currently the driving force behind IWW Local #1, an NLRB recognized Wobbly union which includes both millworkers and EF!ers. "Our goal is to slow the timber companies down to sustained yield. For every day we shut down a logging operation, that's another day the workers can collect a paycheck."

Northern California residents assisting with Redwood Summer are rife with political experience. In the last four years, there have been over 100 direct action protests in Humboldt, Sonoma and Mendocino Counties. Said EF! co-founder Mike Roselle, "Redwood Summer promises to be the biggest national mobilization of EF! activists ever."

The conflict has intensified recently with two forest-saving initiatives well on their way to being eligible for the November statewide ballot, and two bills in the US House of Representatives, both introduced by Representative "Pete" Stark (D-Alameda), causing heartburn amongst industry execu-

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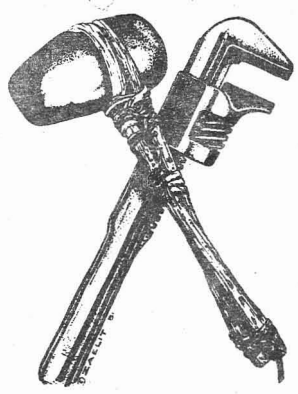

RAMBLINGS

At last, in this issue, our Road Tabloid appears. Thanks to the efforts of EF! Biodiversity Project activists, we herein present the definitive denunciation of roads. Even if you recycle the rest of your *Journal*, please save your Road Tabloid and use it to close roads!

We have a second major reference tool in this issue, too: part one of an overview of *old-growth in the East* (no, that's not an oxymoron). The study is divided into 5 regions, 1 covered in this issue, the other 4 in the next two issues. As far as we know, this is the first time such an inventory has been done for the East. It will provide Eastern activists with a list of places to defend and expand.

With this issue we also introduce a new service to those of our readers who take pleasure in monitoring internal consistency, political correctness, and such. Below you will find an index to gratuitously offensive remarks, neatly arranged so you needn't bother wading through all the other material in each issue.

Z has written for this issue an explanation of how the *Journal* works. Dale and I have both added footnotes to this, to elaborate on a few of Z's statements.

You may detect in Z's article a touch of weariness on the part of the *Journal* staff. It's true; we're bushed. Thus, we'll sell no merchandise at the RRR this year (and neither will Ned Ludd Books, we're told). We're going to have fun. Also, we plan to shut down the Tucson and Canton offices from June 23 through July 23, as we'll be at the RRR, on the road, or on the trail during that period. Because of our time away, the August issue will be a week late.

—John Davis

HOW THE *JOURNAL* WORKS

By Nancy Zierenberg

Are you confused about just how the *Earth First! Journal* works? Who does what around here, anyway? First a little history....

The *Journal* started as a small xeroxed newsletter put together by Dave Foreman and Howie Wolke. After a time, it went to a newspaper format. Several other people came and went with help on the paper. A group consensus decision was made that to avoid unnecessary bullshit the *Journal* should be a sole proprietorship. Dave was volunteered.

As a sole proprietorship business, the *Journal* was kept alive partly by personal money from Dave and others. The trinket section was developed to help support EF! and to help produce the *Journal*. John showed up in Tucson to volunteer in 1985. Dave began bestowing editorial duties on him in 1986. Kris showed up just before the North Rim Rendezvous in 1987. Dale was hired in the spring of 1988 to take over some of John's duties. Nancy Z came to relieve Charles Conner as mail order person soon after the 1988 Rendezvous.

Dave gave up the *Journal* sole proprietorship in January 1989 to devote full time to writing and speaking. Ned Ludd Books was split off from the *Journal* as Dave's sole proprietorship business. There was no buyout of the *Journal*. It was incorporated, with the consensus of those working on the Journal, and currently has an application pending for non-profit 501(c)4 status. We didn't like doing that but it had grown so big that in order to gain bulk mailing and other advantages, we had to go the straight game. We still rely heavily on volunteers to get the papers labeled and mailed out every issue. Tucson Earth First! consistently contributes to the movement with their volunteer time.

John Davis has been the editor of the *Journal* for about two years. He wades through all the handwritten scribbles and typewritten tomes sent in. Worthwhile articles are edited for space constraints and grammar. Articles that are not well thought out, or seem pointless or redundant or not of interest to the movement in general, are not published. Much more material comes in than can be published. John is an editing genius. It's not an easy job.

When Dave turned over the editorship of the *Journal* in 1988, he remained the publisher until it was incorporated in January 1989. Now Earth First! Journal, Inc., a 4-person collective, publishes the Journal.(1) Dave is no longer on the staff, but maintains the books listing in the *Journal*. He also helps at mailing parties and occasionally writes an article for the *Journal*, as well as his column "Dear Ned Ludd".

Dale Turner is the assistant editor. Besides writing articles for the *Journal* he maintains various parts of the publication, such as the local groups and paid ads pages, and "Dear SFB", and is responsible for the entire layout of the *Journal*. He's the one who gets it to press in the form you see. He also volunteers at mailing parties.

Kris Sommerville is the business manager for *EF! Journal*.(2) If it weren't for her organization, expertise, and dedication, the *Journal* would be in a mell of a hess! She handles the mailing list, keeping up with subscriptions and address changes for all you mobile activists. She also maintains all financial records. She has to deal with taxes, paying bills, maintaining accounts, etc. In short, she does a lot of work.

Nancy Zierenberg (me) runs the merchandise end. I'm responsible for mailing your orders to you, making sure we have merchandise to send (ordering books, t-shirts, etc.), organizing mailing parties, answering a million phone calls and trying to be helpful and informative. I'm sort of a person-friday around the office in Tucson.

These four people are paid by the corporation a whopping $5+ an hour and work anywhere from 30 (rarely) to 80 (commonly) hours a week. All four are dedicated to the cause and are active in local EF! and other enviro. groups.

(1) On the Triune Nature of Earth First!

Prologue: ***Ten years ago this spring, five disgruntled environmentalists formed a tribe, launched a movement, and articulated a philosophy — Earth First! As Earth First! begins its second decade, it is in the paradoxical situation of being stronger than ever before, yet more beset by internal tensions than ever before. This footnote will explore this paradox.***

Introduction

We are wont, in Earth First!, to insist that we are not an organization. We say we're a movement or a tribe, and these generally seem to be adequate ways to describe EF!; yet for many observers of EF! and even many proponents of EF!, we remain an amorphous entity or set of entities. Perhaps we defy description because, in addition to being only loosely organized, EF! has at least 3 fundamental aspects. We have historically been a movement, a philosophy, and a tribe. However, these 3 aspects have not weathered the years equally. The EF! movement has grown more in the past few years than ever before; the EF! philosophy has spread as quickly as can be expected of a perspective that would subvert the dominant paradigm; but the EF! tribe has become too diverse to remain united, and this may be the primary source of the present tensions within Earth First!.

At the risk of both repeating and contradicting more perceptive EF! exponents, I'll try to answer the wherefore and the why of EF! in a manner that might help the many new *Journal* readers (500 new ones this issue) understand what we are, and might help reaffirm our united commitment to defend Mother Earth. Before doing so, however, it is important to note that EF! has always been characterized by unity in diversity. We have experienced remarkably little of the infighting that eventually weakens or destroys most groups working for serious change. Even in its formative years, when EF! really was one tribe, the group included characters ranging from swashbuckling anti-cow-cowboys to widely published biologists. We are now 10 years old, and a decade of tolerance for diversity suggests that we can weather the storms looming on the horizon and emerge a

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(2) Changing Times, Changing Names

As you probably noticed, our front page looks a little different this issue. After much discussion, we've changed the name to *Earth First! Journal - In Defense of Wilderness & Biodiversity.*

This publication has been commonly referred to as the "Earth First! Journal", but we've finally added *Journal* to the official title to clarify our position within the Earth First! movement. As the masthead has noted for many years, this publication is an independent voice within the movement, just one of many, and is not the "official newsletter" of Earth First! Unfortunately, folks outside the movement rarely pick up on that, and even active EF!ers miss it. Articles and letters published in the *Journal* have been interpreted as official positions of the movement, and used to bludgeon Earth First! in general and the *Journal* staff in particular. Likewise, certain essays printed here have been interpreted by some activists within the movement as attempts to dictate policy and procedure for the movement.

While I cannot speak for the motives of our many writers, the four of us who put this thing out share a common intent - to publish an interesting newspaper covering activities within the Earth First! movement and providing related news and ideas for all who will fight to defend wilderness and biodiversity.

Which brings us to the new subtitle. This makes the third subtitle in ten years of publication (for a while in 1984 this was THE *NO-COMPROMISE* ENVIRONMENTAL JOURNAL). We had several problems with calling ourselves THE *RADICAL* ENVIRONMENTAL JOURNAL. For one, calling ourselves radical somehow served to bring out everyone who wanted to disrupt The System, for whatever reason and by whatever means. While some may consider it a radical act to shoplift from Scarfway or to threaten "hits" on individual "eco-fuckers", such things don't appeal to the four of us who publish the *Journal*.

Also, calling ourselves the radical environmental journal seems pretentious since now there are many: *Glacial Erratic, Walkabout, Wild Rockies Review,* and the eloquent *LWOD*, to name a few.

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Page R8: Carlton's road closure article, ed. note under Adirondacks.
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Page 2: Footnote #2 to Z's article, paragraph 4.
Page 17: *Egodefense* ad.

EARTH FIRST! JOURNAL
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The ***Earth First! Journal*** is published by the Earth First! Journal, Inc. and is a worker-owned and -operated newspaper within the broad Earth First! movement. It is not the "official newsletter" of the Earth First! movement. *Earth First! Journal* is a forum for the no-compromise environmental movement. Responsibility rests with the individual authors and correspondents. The contents do not necessarily represent the viewpoint of this newspaper, the Earth First! movement, local Earth First! groups or individual Earth First!ers.

Although we do not accept the authority of the hierarchical state, nothing herein is intended to run us afoul of its police power. *Agents provocateurs* will be dealt with by the Grizzly Defense League on the Mirror Plateau.

Submissions are welcomed and should be typed or carefully printed, *double spaced,* and sent with an SASE if return is requested. Electronic submissions are even better, either on Macintosh disks or via Econet (send to "earthfirst"). Art or photographs (black & white prints preferred, color prints or slides OK) are desirable to illustrate articles and essays. They will be returned if requested. Please include explicit permission to reprint slides. Due to our tight budget, no payment is offered except for extra copies of the issue.

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For subscriptions, merchandise orders, donations, inquiries, general correspondence, Letters to the Editor, articles, photos, etc., send to: Earth First!, POB 7, Canton, NY 13617. Phone: (315) 379-9940.

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Contributing Photographers: Joe Cempa, David Cross, Roger Featherstone, Orin Langelle, Doug Peacock, Scott Smith, Howie Wolke, George Wuerthner.

Mailing: Tucson Earth First! Group

SCHEDULE

The *Earth First! Journal* is published 8 times a year on the solstices, equinoxes, and midpoints: November 1, December 21 or 22 (Winter Solstice), February 2, March 21 or 22 (Vernal Equinox), May 1, June 21 or 22 (Summer Solstice), August 1, and September 21 or 22 (Autumn Equinox). Deadlines for articles, artwork and ads are three weeks before the cover date. The newspaper is mailed Third Class on the cover date. Subscriptions cost $20 a year. First Class delivery is available for $15 extra a year. Surface delivery outside the USA is available for $30; airmail delivery overseas is available for $45 a year.

Subscriptions or questions should be sent to: Earth First!, POB 7, Canton, NY 13617.

Letters to the Editor

Letters to the editor are welcomed. Lengthy letters may be edited for space requirement. Letters should be typed or carefully printed and double-spaced, using only one side of a sheet of paper. Be sure to indicate if you want your name and location to appear or if you wish to remain anonymous. Send letters to POB 5871, Tucson, AZ 85703.

Dear John Davis,

Congratulations re getting EF! out on recycled paper, and thanks. That is putting our money where our mouths are. And yes, I would read EF! if it were typed and photocopied. Incidentally, Metro Monitor of Minneapolis is now being printed with SOY based ink (!). I will be in Mpls. later this month and will try to check up on it and report to EF!

I also appreciate, as a journalist, your list of editorial wants.

In addition to the topics you list for EF!, I would like to see a LOT more "dumb", "naive" questions asked. Such as:

1) Could other substances besides silver or platinum be used to coat photographic papers? Conceivably a vegetable substance? (I can't imagine what — but if ink can be made of soy, who knows what human creativity might not achieve?)

2) Why is paper made of trees that take 20-60 years to grow, when it can be made of any annually renewable vegetable fiber? (In Cuba, they use the bagasse, the inedible detritus from sugarcane.) This would mean retooling machinery, which isn't "economical" — i.e. profitable under capitalism. But who says we have to have capitalism forever? (I consulted several paper recyclers about this: no info. Would LOVE to see a THOROUGH discussion in EF!)

3) What is the energy use to FAX this letter, instead of: truck from Taos to Albuquerque, plane to (I presume) NYC or maybe Buffalo, truck to Canton?

4) Besides being a big paper user (I am a composer as well as a journalist, and it takes a LOT of paper to compose an opera or symphony!), I am a maniacal coffee drinker. I am well aware there is blood in every cup. The general "give it up" attitude is the baby-out-with-the-bathwater. Let's explore: CAN coffee be grown in a greenhouse? How many bushes would I need to provide myself 3 cups a day? What are the comparative costs glass/plastic for a greenhouse? Can "plastic" be made out of vegetable fiber, rather than petroleum? And what does use of vegetable fibers do vis-a-vis our food supply?

5) When did toilet paper become general? In the Islamic world, I understand, they wash — which is probably more sanitary.

EF! could probably find experts to write about all these things.

If you have read this far, you see that the drift of all this is: IS there appropriate technology? The verdict isn't in yet.

— Joanne Forman, Ranchos de Taos, NM

Dear Shit for Brains:

Nineteen shit-smeared cows shot dead. Outrage, Disgust, Bounties and condemnation. If I were a cow, I'd rather be gunned down in slickrock country than butchered in Greeley and have my remains sold off as a greasy Quarterpounder.

If I were a bleeding heart, I'd be even more disgusted about the useless, legalized slaughter of bison that stray from Yellowstone Park. And I'd be outraged at the wanton, wholesale extermination of natural predators perpetrated by the federal government to protect the ranchers' products.

But I am neither cow now bleeding heart. And while I regret the loss of any innocent life, even cow life, I salute the courage and the conviction of the masked marauders, if in fact it was a terroristic environmentalist and not another drunken slob-hunter, who mistook the cows for some fat, out-of-season elk.

— Notta Cow

Dear Earth First!

Getting ready for planting my garden this year I was inspired to write you.

I am 40 years old, my wife is 41, we have 2 children, 14 & 17. My wife and I have been involved in recycling since 1977 and organic gardening since 1980 and we have always used fuel efficient cars and kept them for a long time. We do our best to conserve water and electricity. We heat our house with wood and we own about 90 acres of forest land in Tennessee and Kentucky and we own and use 4 off road vehicles.

The whole point of my diatribe is that I am getting sick and tired of members of the Earth First movement and other environmentalists looking upon us and other ORV riders as vermin to be eradicated from public lands the same as wolves were from Yellowstone earlier this century. We have, whether you folks like it or not, just as much right to responsible use of public lands, and to exist, as you do and I for one resent the thought of paying my taxes which have been considerable to finance playgrounds for people like you only.

Therefore I am going to take a new tack. For every act of incredible arrogance and stupidity toward off road motorcyclists, or any other group of people for that matter that I hear about by any environmental group, yours especially, I will return in kind. I might do something simple like leave a light on all night, or let the water run or not plant a tree in one of our pastures, to something as serious as cutting down a large tree, or sending recyclables to the landfill. But unlike your style I'll do what I do in broad daylight instead of under the cloak of darkness. I am also recommending this to my friends in the motorcycle business.

You see ladies and gentlemen for every act of aggression on your part to stop imagined evil you will actually be causing an act of pollution that is actual and I will enjoy it immensely I assure you.

— David Lotz, White House, TN

Ed. note: Glad to hear you're such a "responsible" steward of the land. —DT

Earth First!ers:

Like you, I am dismayed at the damage being done to the environment of Our Earth. Yet I cannot bring myself to adopt your strategies.

The crux of the problem is the consumption of resources by an ever-expanding human population. But rather than attempt to prevent the undesirable consequences of human avarice, I'm inclined to let us reap the reward of our actions. Let the air be polluted, the groundwater contaminated. This will result in the deaths of the very people who are producing the ecological menace!

As population and resource consumption increase, so will ecological problems. Eventually it will reach the point of famine and disease, until the human population is reduced to a manageable level. I consider it a case of Nature Striking Back.

Let it happen. The Earth will regenerate afterward. The Earth will survive. I've come to doubt whether we as a species deserve to.

— Stephen van Eck, Exton, PA

Earth First!

A hardy handclap for Roselle's rebuttal of Foreman's sermon. "Leave your hippy garb at home" sounds like marketing tactics to package EF! to an elite group of eco-consumers. A quote by John Africa (remember the movie?) "We're all taught to respect filth if it's wrapped in a $500 suit."

I must take issue with Mike's stance "There is a conspiracy but I doubt consumers had much to do with it." Why else has the planet been so pillaged except that we've all been programmed to fulfill our desires of a mountain of fossil fuel powered plastic metal chemical consumer crap? I don't think anyone conspired to strangle our planet; we've just fallen for the hard sell of techno-comforts. And the industrial flats, the rivers dredged and damned, roads, concrete, it's all part of the price for VCRs, mobility, etc. and smokestack scrubbers, cleaner fuels, etc are not going to solve anything, especially with population increases. We are all leaving our individual tonnages in toxic legacy.

Not having a car 2 miles from the hardroad drives this home. No trash pickup is an eye-opening experience and I recommend it. I've been forced to notice our throwaway culture. By gardening, canning, homebrewing and buying bulk from our co-op we've cut down on a lot of packaging. We're down to less than five 50# dog food bags of trash a year which is a record for a family of three in my book (any challengers?).

This isn't abstinence from the good life as I've always been a hedonistic sort, a real glutton actually. Consumer crap is just so boring and predictable anymore. It can be a bit alienating around mainstream crowds talking cars and videos — I'm appreciative of like minded friends to hoot it up with and even the family seems to be coming around. We're all going to relearn our own bioregion as 500 mile vacations become obsolete. It's gonna take this level of personal changes if we're going to get buffalo back into the Ohio River bioregion.

I think I'll get a Mohawk on my skunk costume for Earth Day.

— That Guy Yoono, Myra, WV

Dear Folks,

I'm writing this brief letter with hope of helping to serve the EF! movement in two ways. Both are basic grassroots networking techniques, things we must always be on the alert of moving away from.

First, for those traveling through this area or hiding in the woodwork, I'm involved with organizing a writer's co-op in this small town of Lancaster, PA. Any folks interested in sharing their work or finding out what's being done here should get in touch. Southeast PA is an area in need of the insight of eco-poets.

Second, a friend and I are going to travel across this country starting around late August. We hope to cover much of the southeast and west. We'd like to participate in as many EF! gatherings and events as possible. We're interested in distributing newsletters and literature pertinent to radical environmentalism.

If any of this sounds good to you, let me know.

— Jim Groff, POB 1182, Lancaster, PA 17603

Hi folks,

I came upon some information which doesn't seem to be widely known, but I think it should. Being an auto mechanic, I have access to U.S. government books on smog control devices for cars, and my nose has access to the exhaust fumes put out by these wonderful things.

In the front of the U.S. EPA Standards for Emission controls, we read the catalytic converter reduces certain pollutants such as oxides of nitrogen and carbon monoxide, but it also, through chemical processes, changes sulphur dioxide into sulphur trioxide which they admit is the acid in acid rain. The difference in emissions put out by cars after catalytic converters were installed in them was immediately obvious to me because I had to smell these things all day. I would like to instigate legislation to cure this or at least make it more widely known.

— Adios

Shit fer Brains:

I must bitch about Opossum's "Critter Flea Market" (Eostar, p. 26). Buying animals to set them free rewards those who sell them. They will capture more. This point is so elementary that I am ashamed of having to say it.

Also, I'm sick of writers in the EF!J and other enviromags who use too many words to say too little. Quit showing off! Quit wasting my time! Stop wasting paper (trees) and ink! Good writing gets to the point. In case you haven't noticed, we're losing.

— Scorpion, Raleigh, NC

Triune Nature . . .

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stronger force for Gaia.

THE EARTH FIRST! MOVEMENT

Earth First! is a movement, not an organization. Instead of a central bureaucracy, we have autonomous entities — local and regional EF! groups, task forces, roving individuals — who essentially shape their own agendas. This places tremendous responsibility on individuals in EF! An Earth First!er is not simply a person who sends in an annual fee for membership, as a Sierra Clubber may be; an EF!er is one who actively defends the planet.

Size: The number of such defenders is hard to determine. Depending on how strictly one defines the movement, EF! probably has 500-50,000 adherents on this continent and perhaps one-fifth as many outside North America. That is, the extremely active EF!ers may number only about 500, but the less active supporters may number up to 50,000. *Earth First! Journal*, presently the most widely distributed periodical in the movement, has a readership of about 15,000.

Issues: EF! has broadened its scope of issues through the years but remains focused on wilderness and biodiversity, or *wildlife* in the fullest sense of that word. Of course, almost all so-called environmental issues pertain to wilderness and/or biodiversity, so almost any environmental activists can consider themselves part of the EF! movement if they take an uncompromising biocentric stand on their issues.

In its early years, EF! worked mostly on wilderness issues in the Western states, but the movement is now nearly as strong in the East as in most of the West. EF!'s major ongoing campaigns include the following:

West: Northern California EF! activists are using blockades and other forms of civil disobedience (CD) to fight the destruction of the last unprotected Coast Redwood forests on Earth. Oregon and Washington EF!ers are employing CD and education campaigns in trying to save the last 5% of Northwest old-growth forests from the timber companies. Montana EF!ers are demonstrating and educating on behalf of Gray Wolf restoration in the Northern Rockies and for Grizzly Bear protection in the Northern Continental Divide Ecosystem and the Greater Yellowstone Ecosystem. Arizona EF!ers are organizing guerrilla theatre actions and subversive letter writing campaigns to prevent the construction of an astrophysical complex atop 10,720' Mt. Graham. New Mexico EF!ers are preparing a lawsuit to force the Department of Interior to reintroduce the Mexican Wolf (a subspecies of Gray Wolf) to wild habitat in New Mexico.

Midwest: Wisconsin EF! is writing, demonstrating, and floating (in large flotillas) against mines in northern Wisconsin. Illinois EF!ers are blockading, holding press conferences, and slinging MUDDD (Massive Unheard-of Death Defying Defense) to halt the clearcutting of Shawnee National Forest. Texas EF! is employing CD, and working through local political channels (e.g., lobbying Austin's City Council) for stronger laws against destruction of habitat of Threatened and Endangered species.

East: Florida EF!ers are demonstrating

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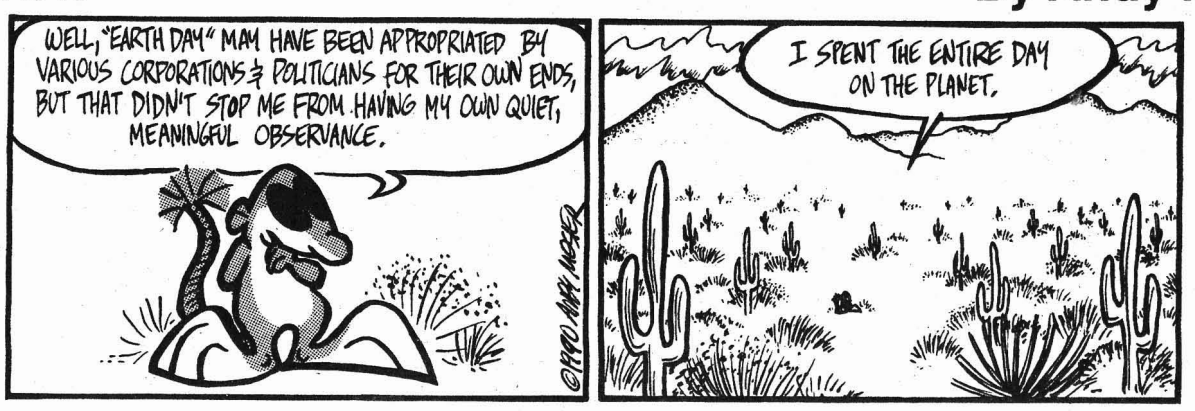
K. RAT

By Andy Mosier



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and publicizing for Florida's many imperiled species and ecosystems, especially those in north Florida's National Forests and south Florida's Everglades Ecosystem. Virginia EF! is monitoring the George Washington National Forest and forcing closure of illegal mines and roads. Greater Adirondack Bioregion EFlers are developing a visionary Adirondack Wilderness Proposal to publicize the need to stop the Gleneagles condominium development and other proposed projects in the East's largest relatively unspoiled forest.

Task forces and individuals: Preserve Appalachian Wilderness is documenting forest destruction and publishing research papers to pressure state and federal governments to purchase and protect private timberlands in northern New England and New York. The EF! Biodiversity Project is using Freedom Of Information Act requests, appeals, and lawsuits to force the US Fish and Wildlife Service to list and protect imperiled species (e.g., Flat-spired Three-toothed Land Snail, Cahaba Shiner, Desert Tortoise, Florida Panther, Florida Manatee, Grizzly Bear, Woodland Caribou) under the Endangered Species Act. The Direct Action Fund is financing banner hangings, civil disobedience and other direct actions wherever local EF! groups need money. Northern California's Redwood Action Team is helping organize for this summer what may prove to be the biggest series of direct actions in the history of old-growth (a long history, as some of these behemoths are over 1000 years old). The Grazing Task Force is publishing a book and leading protests against livestock grazing on public lands. The EF! Wolf Action Network and EF! Grizzly Bear Task Force are both organizing protests and letter-writing campaigns on behalf of their respective species. The Ocean Task Force, by placing silent agitators on tuna cans, hanging banners, and other direct actions, has just forced Heinz to promise to buy only "dolphin-safe tuna." Finally, scores of EF! proponents are quietly and anonymously sabotaging — monkeywrenching — the machinery used by corporations and agencies in destroying natural areas.

Tactics: As the above sample of issues suggests, EF! groups' tactics range from lobbying to blockading and individual EF!ers' tactics range from letter-writing to monkeywrenching. Unfortunately, to be effective, EF! often must adopt a confrontational style. Though it is unrealistic to view environmental struggles in black and white terms — almost all American consumers are responsible for environmental destruction, and no corporate executives are *completely* evil (they are, after all, biodegradable) — the primary forces of destruction in North America are both evident and powerful: *They are opponents*. Hence, EF! groups generally use a multifaceted and/or escalation strategy to oppose land despoilers. Tactics may initially be letter-writing and passive demonstrating, then blockading, then for some individuals monkeywrenching. Or these tactics may all be employed simultaneously, though in some cases CD and monkeywrenching don't mix well.

As the most controversial of tactics associated with EF!, monkeywrenching merits special comment. Monkeywrenching is a matter of individual choice. As a group, EF!ers do not ordinarily monkeywrench; many EF!ers, however, do monkeywrench, generally alone or with one or two trusted friends. The EF! movement does not officially advocate monkeywrenching, but most within the movement accept it as a fair tactic to thwart intransigent environmental abusers; and *EF! Journal* takes an editorial stand in favor of prudent monkeywrenching.

Monkeywrenching tactics are explained thoroughly in *Ecodefense: A Field Guide to Monkeywrenching,* by Dave Foreman and Bill Haywood; and *EF! Journal* runs a regular column ("Dear Ned Ludd") on monkeywrenching tactics, so here it will suffice to simply mention a few especially popular methods: Pulling survey stakes is effective against construction and road-building projects in the early stages of development. Pouring sand in the crankcases of dozers and other heavy machinery can destroy their engines and cost their corporate owners tens of thousands of dollars per machine. Plugging culverts beneath logging roads can cause the roads to wash away. Slashing tires and pouring sand into the gas and/or oil can disable off-road vehicles. Cutting fence on public lands out West effectively cuts welfare ranchers' profits. Spiking trees can prevent them from being felled.

Tree-spiking, however, has been overstressed by media covering EF! Tree-spiking, some monkeywrenchers would say, is a technique of last resort. It's better to disable the timber company's machines. Some tree-spikers see their work as an inoculation against deadly parasites — clearcutters. They do their work with the safety of loggers in mind and with utmost reverence for the forest. (Being inoculated may hurt, briefly.) They warn authorities about the location of the spiked trees to ensure the safety of loggers and mill workers. Authorities are likely to cancel spiked timber sales, because locating and removing spikes is expensive.

Before the leaving the topic of tactics, it is important to talk about conservation biology. Conservation biology is a subdiscipline of ecology concerned with the preservation of biodiversity. It is an applied science with a strong ethical component — a "crisis discipline," in the words of Michael Soulé, former president of the Society for Conservation Biology and proponent of deep ecology. Conservation biologists are providing scientific support — and, to a lesser extent, even political credibility — for what Earth First! has been advocating for years — the need for huge preserves, habitat corridors, restoration of natural disturbance regimes, reintroduction of extirpated species, etc. EF! has attracted in recent years growing numbers of conservation biologists, and *EF! Journal* has increasingly linked conservation biologists with activists by providing very readable conservation biology articles.

Why A Radical Approach Is Necessary

To begin, in answering "why Earth First!?," it's fitting to mention the global perspective. We are in the midst of the most severe extinction episode in the planet's history. Humans are causing the extinction of 3 to 100 (estimates keep rising) species a day. To avert eco-catastrophe, extreme defensive measures are essential.

Moreover, radical environmental activism is necessary because mainstream environmentalism is failing. For reasons EF! founders Dave Foreman and Howie Wolke have discussed at length in their *EF! Journal* articles and their books (*Ecodefense* and *Confessions of an Ecobrute* by Foreman, *Wilderness on the Rocks* by Wolke, *The Big Outside* by Foreman & Wolke) mainstream environmental groups have won protection for limited areas but have not slowed the overall rate of wilderness destruction in North America. A brief discussion of land mismanagement by the main federal land managing agencies helps elucidate the need for bold approaches to environmental defense.

The US Forest Service, which manages 190 million acres of forest and grassland in this country, allows clearcutting and/or livestock grazing on the vast bulk of its lands. The FS has become essentially a timber industry and welfare rancher support group. The agency roads or otherwise develops 1-2 million acres of National Forest a year, and almost invariably opposes Wilderness protection of its lands.

The Bureau of Land Management mismanages about 180 million acres in the Lower 48 and, like the Forest Service, develops about 1-2 million of this annually. The BLM also has jurisdiction over a major portion of Alaska. On most of its Lower 48 lands (all in the West) the BLM promotes livestock grazing and mining. The BLM is closely allied with the grazing industry, and has presided over the severe disruption of most grassland and desert in the West.

The US Fish and Wildlife Service manages the National Wildlife Refuges in this country, and oversees implementation of the Endangered Species Act. The FWS allows hunting and fishing and/or grazing on most of its 400 plus Refuges, and even allows oil drilling and timber cutting on some. Moreover, FWS has failed to protect imperiled species under the Endangered Species Act. So far, FWS has granted Endangered status to only 378 species and Threatened status to only 112 species in the US even though thousands of species in this country face extinction. FWS itself has classified over 100 species as C3 — not eligible due to presumed extinction; and has allowed over 1000 nominated species to languish while sluggishly adding only 30-50 species a year to the protected list.

The National Park Service has, albeit to a lesser degree than the FS and BLM, become an ally of a moneyed special interest: entrepreneurs of industrial tourism. In Yosemite, Yellowstone, and many other National Parks, the NPS has built *loop* roads into wild country, opened prime habitat to concessionaires, and otherwise developed natural areas. (The NPS has an inordinate fondness for loops, as the late author and erstwhile Park ranger Ed Abbey noted.)

The Grizzly Bear offers a prime example of mismanagement by the FWS, FS, NPS, and BLM. The Griz is listed as Threatened, yet these agencies continue to allow and even subsidize road-building, clearcutting, grazing and tourism development in the bear's prime habitat in and around Yellowstone and Glacier National Parks.

Oft forgotten in discussions of federal land agencies is the Department Of Defense. The DOD already owns, bombs, and strafes millions of acres in the US — large areas in the East and Midwest, much larger areas in the West. The Army, Navy, Air Force, and National Guard are presently attempting to seize another 4 million acres in the West for flying and bombing games.

EARTH FIRST! AS A PHILOSOPHY

In more abstract terms, Earth First! is a philosophy and a way of life. EF! in this sense is closely related to deep ecology and biocentrism. That is, EF! means recognizing that the planet and all its life forms have value (or dignity, or worth, or élan vital, or deoxyribonucleic acid or whatever it is that gives entities their reason to be) irrespective of their utility for humans. EF! means living in accordance with biocentrism — the principle that all natural life is equally central from the standpoint of the planet. This is diametrically opposed to anthropocentrism — the predominant worldview in human society, at least in the (over)developed nations. Anthropocentrism is the view that humans are the measure of all things, that things have value only insofar as they serve human ends.

Of course, EF! as a movement and EF! as a philosophy are inseparable; and EF! as a movement can be seen as part of the deep ecology movement, with biocentrism as *the* central tenet for EF! and a major tenet for deep ecology. Deep ecology, which is also both a movement and a philosophy, can be said to be related to Earth First! roughly according to the image of ripples in a pond explained by Dave Foreman in *EF! Journal* several years ago: Deep ecology is within the international conservation movement. EF! is a sizable part of deep ecology. EF! is distinguishable from other elements of deep ecology by its emphasis on direct action and

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Temagami . . .

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In Toronto the activists regroup and then effectively shut down the Provincial Legislature as they blockade all the doors.

1300 - Three are arrested and fined in Vanier. Police are summoned to the Kingston office and 13 are arrested; the 2 lock-ons are cut free and charged.

1400 - The blockade of the Legislature is broken up by police. Occupants of Patten's and Daigeler's offices now number 28 and 13. As the day wears on protesters talk to staff, share pizza, play scrabble, and watch the news. Media coverage is extensive, and some of it is even accurate (one or two editors read the press release). All told, perhaps 2000 people protested.

2400 - Having stayed for the entire Day of Action, activists in Daigeler's office leave peacefully. In Patten's office 12 prepare to spend the night as food and blankets are brought in. In Kingston 9 are still being held by Police.

March 27

1000 - Tired and happy protesters leave Patten's Office after 24 hours; EF! treats them to breakfast. Media interviews continue through the day.

2400 - In Kingston 3 are still being held for bail; the longest participation in the Day of Action.

Summary

The Day was a massive success, generating widespread public sympathy. Many people spoke to Members of Parliament. Over 100 acts of civil disobedience brought only 35 charges; the hardest hit were the group in Kingston who drew 20 criminal charges, 2 of them including willful damage. (Police cut through office equipment rather than locks and charged the protesters for the damage.) Ten days later EF! and the Temagami issue are still in the news as the media tries to figure out who EF! is and what they will do next.

In Ontario the EF! "policy" is that we support the Native Land Claim and recognize the sovereignty of the Teme Augama Anishnabai over n'Daki-Menan (Temagami). We ask that any other EF!ers who become involved in the Temagami issue support the Land Claim. PLEASE do not take any actions in the region without the knowledge and consent of the Band.

In many old-growth issues EF!ers feel they have both a right and moral obligation to take action because they are citizens of the society that is destroying the old-growth. In this instance we do not have such moral authority because we are not part of the culture that owns the land, though we are part of the culture that wants to destroy it. The land belongs to the Teme Augama culture, and any actions must be with their consent. Please contact us for more information.

As a result of the organizing for the action, Earth First! Eastern Canada has become EF! Ottawa (same address) and EF! Toronto. EF! in Ontario will continue to be active on Temagami, and is planning a major action to oppose James Bay II; details will be published in *EF! Journal*, but anyone interested should contact us now.

—Mike Kaulbars

TEMAGAMI UPDATE

As of April 15, Temagami's old-growth pine forests have been tenuously spared, but their fate hangs by precarious bureaucratic threads. Widespread provincial media attention due to continued protests has split the cabinet of Ontario Premier David Peterson over the decision to give the final go ahead to license Temagami's logging.

For close to 36 hours beginning the morning of April 9, 4 Temagami Wilderness Society (TWS) activists perched themselves up trees in Toronto's Queen's Park, and tried to reach the Premier by cellular telephone to keep the heat up on the question of logging Ontario's largest remaining old-growth pine ecosystem. Only President Bush's untimely visit to Toronto managed to upstage the event, while in recent press conferences TWS has been joined by Greenpeace Canada and the Western Canada Wilderness Committee (WCWC) in calls for a moratorium on logging in Temagami.

For the logging trucks to roll, Ontario's Minister of the Ministry of Natural Resources (MNR), Lyn McLeod, must approve the final draft of Temagami's Interim Timber Management (i.e., Manglement) Plan, covering the MNR's designs on Temagami's wilderness for two years, from 4/1/90 to 3/31/92, and calling for the "harvest" of some 8% of the area's forests. The plan cleverly disguises its impact on old-growth Red and White Pines by placing affected stands in "working groups" of "poplar/spruce forest." The MNR can then claim that the clearcuts are for pulpwood. TWS's research has uncovered that 90% of the Red and White Pine the MNR plans to cut is in these "other working groups."

Efforts to save Temagami are currently focused on calls for Minister of the Environment Jim Bradley (who appears to be sympathetic to the case for old-growth) to conduct an environmental assessment. Those interested in Temagami's fate should immediately write (or Fax) a letter to the Honorable Mr. Bradley. The wording is critical; one must "request the designation of an environmental assessment for the Temagami Interim Timber Management Plan." Include reasons; a few suggestions are: the still unresolved Teme-Augama land claim, the lack of a baseline flora or fauna inventory, the outdated forest inventory, and the absence of any consideration of wilderness values in the MNR management plan. Finally, "demand a reply," which legally should force some other action than consignment of the request to the circular file.

***Minister of the Environment, Hon. Jim Bradley, 15th Floor, 135 St. Clair Ave, W. Toronto, Ontario M4V 1P5; Fax 416-323-4682**

Triune Nature . . .

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by its Luddite tendencies. Also, some EF!ers don't like the term 'deep ecology' (saying it sounds like the study of benthic organisms) and simply speak of biocentrism (as advocated by Aldo Leopold long before Arne Naess coined the term "deep ecology").

EF!'s Luddite tendencies are perhaps its most unique attribute. EF!ers question — if not outright condemn — technology, and some EF!ers deal with technological machines the way the Luddites (of 18th century England) did — they bash them, or otherwise sabotage them so as to prevent their replacement of living entities. In contrast, some other deep ecologists look to appropriate technology — an oxymoron, many EF!ers say — to reverse the growing eco-catastrophe.

Even as the deep ecology circle contains the smaller Earth First! circle, EF! subsumes the various EF! local groups and task forces. It also includes Sea Shepherd Conservation Society (the EF! navy), and, unofficially, several *ad hoc* coalitions and regional wilderness groups. There is also significant overlap between EF! and the Rainforest Action Network (founded and led by EF!ers Randy Hayes and Mike Roselle), Rainforest Information Centre in Australia (founded by EF!er John Seed), and Earth Island Institute.

THE ERSTWHILE EF! TRIBE

Problems of Growth: Earth First! was established as a tribe. EF! never had *official* leaders. The leaders have been those who organized local groups and campaigns and initiated actions. Its decentralized, tribal nature has prevented EF! from being coopted by the moneyed interests — as has happened to mainstream environmental groups, to various degrees. In the last few years, though, as environmental crises have become inescapably obvious even to the apathetic American masses, the EF! movement has mushroomed far beyond the expectations of its founders. The young tribe of a few hundred wilderness zealots has been joined by thousands of planet proponents of all persuasions. Inevitably, this has led to tensions over style, tactics, the content of *EF! Journal*, and questions about where to defecate at our annual movement-wide gatherings (Round River Rendezvous).

A Solution: Some thought porta potties were the answer. Others dumped on that idea. (Turner 1990) They (the potties) were at best a mitigatory measure.

The original tribe of zealots has evolved, lost some members, added more, but now comprises only a portion of the EF! movement. We've not been a single tribe since we hit the national media. The media have enabled us to disseminate our message, but they've also cost us our unity. It is time for all of us in Earth First! to recognize that we are becoming several tribes, time to ponder how or whether we should thus govern ourselves, and to rejoice over our growing strength.

In terms of governance, or composition at least, a model for us to consider is the tribal confederation formerly practiced by some American Indian nations. Such nations lived apart but came together periodically to hold counsel, pass the pipe, exchange genetic material (Foreman, 1985), and ... *network* ! Though it is not now essential that we delineate or choose names for our tribes (some may even say this would encourage xenophobia), it is safe to say that we who work for *EF! Journal* identify closely with the original tribe. Dave Foreman in his upcoming book, *Confessions of an Ecobrute*, aptly calls this tribe the reluctant radicals. We are the EF!ers who are radical activists not because we find activism fun, certainly not because we enjoy jail, but because we fear for the life of the planet. We'd rather be out in Nature, out birdwatching, but we write, lobby, protest, blockade, and monkeywrench because the planet is being killed.

While some EF!ers hail from social reform movements, the reluctant radicals in EF! are from the conservation movement. We follow the tradition of John Muir, Will Dilg, Rosalie Edge, Aldo Leopold, Bob Marshall, Sigurd Olson, Rachel Carson, Howard Zahniser, Paul Schaefer, Marjorie Stoneman Douglas, Hazel Wood, Gertrude Blom, David Brower, Chico Mendez, José Lutzenberger and other radical conservationists. We also follow in the steps of some less public figures: Bonnie Abzug, Doc Sarvis, Seldom Seen Smith, Hayduke ... Moreover, as with small isolated populations in Nature, we are influenced by the *founder effect*: EF!'s five founders set a tone of uncompromising wilderness defense that we intend to maintain.

WHERE *EF! JOURNAL* FITS IN ALL THIS

Earth First! Journal can no longer even pretend to be a voice for the whole movement or a forum for all views in the movement. So we ain't gonna try.

We will continue to cover news from throughout the EF! movement, but we will focus almost exclusively on wilderness and wildlife matters and actions. The content of *EF! Journal* will remain largely the same, but we'll not feel obligated to try to cover every action; the movement is too big and the actions too frequent for that. Nor will we feel compelled to publish all debates occurring within the movement. Future issues will stress wilderness and biodiversity almost to the exclusion of the debates over style, emphasis, and politics that have arisen lately. We will not facilitate internecine squabbling. The *Journal* staff will aim to have future issues include, compared to past issues, fewer letters of bickering, similar amounts of action and conservation biology coverage, and more wilderness issues and humor. Of course, *EF! Journal* will continue to welcome a diversity of EF! voices, but we wish to avoid filling pages with irresolvable debates over anarchy, flags, immigration, diet, or belly dancing.

Already, obviously, we have modified the *Journal*'s name. Keeping the old name would be a bit presumptuous, given that we are now but one forum for discussion within the EF! movement. We've also dropped the Pagan subheadings, since almost nobody could pronounce them.

There may now be a need for multiple EF! journals. Some West Coast activists have suggested to us that *EF! Journal* be shorter and devoted completely to action articles. Such a journal does seem a good idea; let's hope these activists start one soon. Perhaps *Earth First! Activist* would be a good title. Many conservation groups publish more than one periodical in addition to local group newsletters (of which the EF! movement now has dozens). If other EF! journals arise, we hope to have a complementary relationship with them, trading articles, ads, and such.

EPILOGUE

The above ramblings are the product of considerable caffeine, consensus, confirmation, and a cabal consisting of the Journal collective and a few fellow reluctant radicals. We are not trying to direct the movement, simply to refocus *EF! Journal* so that it will best speak for Gray Wolf, Grizzly Bear, Cahaba Shiner, Socorro Isopod, Kretchmarr Cave Mold Beetle, the myriad other imperiled creatures, and the wilderness that sustains us all.

—John Davis

Changing Times . . .

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This is not to say that we're charting a new course of moderation. If you've noticed the absence of our "Dear Ned Ludd" section, rest assured that it wasn't deliberate on our part. Ned kept dragging his feet for so long, we finally sent Igor to have a "talk" with him. Now Ned swears he'll once again produce a column every issue, full of all the fun 'wrenching tips and news we've come to expect.

As for using "environmental" in the subtitle, that word's meaning gets broader and weaker every day. If ranchers are "the original environmentalists" and George Bush is "the environmental president" then we're something else. This paper has always been focused generally on biodiversity and wilderness issues; now we'll say it plain on the front page.

What do these changes mean for our relation to the rest of the movement? Very little, I suspect. We will continue to support local groups and organizers as best we can with the EF! Directory, introductory tabloids, copies of the *Journal*, merchandise on consignment, ads and such. We will continue to cover Earth First! actions and issues, and will try to publish the best in thoughtful and provocative environmental (there's that word again) writing. We will do our best to avoid pointless arguments, ignore stupid people, bash cows (sacred and profane), flog freddies, think (sink?) deep (ecology), and laugh at the absurdity of "saving the world." We will accept no compromise in the defense of Mother Earth.

In other words, we'll carry on with the work at hand.

— Dale Turner

Freedom Riders . . .

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tives. Tensions have been further increased by inflammatory press statements made by State Senator Barry Keene, IWA Union Representative Don Nelson, and the *Eureka Times-Standard*. All are insisting that EF!ers will provoke violence on the North Coast. Responded Greg King, "There is the possibility that pro-timber industry interests desire violence against protesters in order to discredit a righteous and necessary non-violent resistance seeking to end forest destruction by an out-of-control industry."

College students are organizing for Redwood Summer on their own. "This will disprove the notion that students of the 90s are apathetic," said Zack Stentz, a UC Santa Cruz organizer. "There is a resurgence of enthusiasm on campus for social causes."

Timber harvest plans will be reviewed to determine where direct action will be most effective. "We monitor all plans for Del Norte, Humboldt, Sonoma, and Mendocino Counties," said Rick Cloninger of Laytonville EF! "In the last 3 weeks over 15,000 acres of timber plans have been submitted for Mendocino and Humboldt Counties alone. Louisiana Pacific, Georgia Pacific, MAXXAM/PL and Simpson are the major problems in this area. Neighborhood groups are going to be counted on to monitor their own forest watersheds and call us if they need help." Besides private forests "regulated" by the state, US Forest Service and Bureau of Land Management public forests will be monitored for logging. "Most Americans don't realize their National Forests are being logged," said Cloninger.

Ed Denson will assist in the coordination of medical services, and as a local business owner, he had an insight into a possible unforeseen benefit of the influx of protesters: "Redwood Summer should be great for the tourist industry. And in future years, Humboldt County will be known for something besides marijuana growing: its magnificent redwood forest, if we can save it."

Protesters should bring a sleeping bag, hiking boots, clothing for 45 to 100 degree temperatures, money for food, a tent if possible, a canteen, day pack, dark clothes (brown, green, black) and a non-violent attitude. Musical instruments, masks, costumes, etc. are welcomed. Campsites, housing, legal services, and some first aid will be provided.

"The destruction wrought by the timber industry is unknown to most Americans," said Darryl Cherney. "Besides the wholesale slaughter of thousand year old trees, they leave toxic dumps from their preservatives and eroded soil that can barely support new growth. Reduced precipitation, ruined rivers, treeless hillsides and a decimated salmon population is the legacy the timber industry has left us. The multitude of forest fires we've been getting are due to the smaller, more vulnerable trees that have grown back, as well as from malfunctioning logging equipment. They've devastated small communities with their boom and bust logging, and when they've stripped the land bare, they'll often sell to a developer for tract housing and condos."

Earth First! advocates small, locally based, employee-owned holistic forestry companies, who perform a light select-cut and uneven aged forestry. A few people already practice this method in northern California.

—Darryl Cherney

photo by Judi Bari

This logging truck, stopped by a spotted owl blockade in August, was used to ram EF! organizer Judi Bari's car less than 24 hours later. Bari and others have asked for an investigation of attempted homicide in the incident.

EF!ers Ask for Investigation of Attempted Murder

Three northern California Earth First! organizers have requested that Mendocino County investigate a log truck driver for attempted murder for running their car off the road with his logging truck last August. Judi Bari (Mendocino Co. EF!) and Pam Davis (Sonoma Co. EF!) were on their way to an EF! demonstration during National Tree Sit Week last summer when a logging truck driven by Donald Blake of Redwood Coast Trucking rammed Bari's car, causing it to fly through the air and crash into another vehicle.

Although they have long suspected that this was no accident, the Earth First!ers recently obtained a photo that shows that the truck and driver that rammed them were the very same truck and driver that they had blockaded at the Louisiana Pacific logging operation less than 24 hours earlier. Said Judi Bari, "This certainly casts suspicion on Blake's motives. I believe this man tried to kill us."

Despite the suspicious nature of this collision, the CHP [CA Highway Patrol] officers who investigated did not test Blake for drugs or question him about his motives. Instead, the entire investigation consisted of the CHP going to the wrecking yard and testing Bari's brake lights; yet an officer came to the hospital and questioned Bari about her brake lights, while she was lying in the emergency room semi-conscious. "This was no investigation; it was blatant harassment," Bari said.

This was the third incident in Mendocino County last summer in which law enforcement showed prejudice against Earth First!ers. Two days before the truck incident, Earth First!er Mem Hill had her nose broken by logger Dave Lancaster at a demonstration in Whitethorn. There were at least 20 witnesses to this assault, and the Lancasters also fired a gun and threatened to kill the Earth First!ers. Yet the Mendocino Co. sheriffs refused to arrest Lancaster at the scene, and District Attorney Sue Massini has so far refused to prosecute. In June, EF! organizer Greg King was punched and knocked to the ground by a logger at a demonstration in Calpella. The logger had also wielded a live chainsaw in the peaceful crowd, yet the officers at the scene refused to arrest him. "There's no protection of the law for EF!ers in Mendocino County," says Bari. "It's like being a Black in South Africa."

Bari has sent a letter to Mendocino Co. District Attorney Sue Massini asking her to investigate Donald Blake, his employer Redwood Coast Trucking, and their employer Louisiana Pacific for attempted murder. She has also requested that a Grand Jury investigate the prejudicial treatment of Earth First!ers by law enforcement in Mendocino County.

—Ukiah EF!, 106 West Standley, Ukiah, CA 95482

photo by Rick Cloninger

This $700,000 feller-buncher became the second this year to suffer spontaneous combustion in the Mendocino County forests.

Ukiah Burning

On March 17, Ukiah Earth First! braved the crowds at the Redwood Region Logging Conference to climb a giant automated logging machine, called a feller-buncher, and hang a banner on it that read "This Thing Kills Jobs and Forests." One of EF!'s climbers, Brett Waggie, a logger from Springerville, CA, said, "The feller-buncher will put my family out of work. We can't afford $700,000 machines, and my family is set up for saw logs, not pecker poles."

The feller-buncher can handle trees up to only 28 inches in diameter, and it is common for it to grab several 8" or less trees at a time and uproot them. It was previously used only on plantations growing trees for pulp and wood fiber products. But the trees being cut in the decimated third-growth redwood forests of Mendocino County are now so small that feller-bunchers are being used here.

The logging conference organizers knew EF! was coming, and they knew we had our eyes on that particular machine. They had tightened security around it, but the two climbers managed to get up anyway while a bunch of more hippie looking EF!ers created a distraction singing songs like "Where Are We Gonna Work When The Trees Are Gone" and "Tonka Toys." The two climbers were eventually arrested and charged with trespassing.

Happy Ending: A few weeks after the logging conference, this same feller-buncher — the pride of Okerstrom Logging Co. — burned in the woods. This is the second feller-buncher that Okerstrom has lost to mysterious equipment fires in Mendocino Co. this year. "Either this thing is a $700,000 lemon, or there are some heroic people out there in the woods," said Judi Bari of Ukiah EF! When asked by local news media if she was responsible for the feller-buncher fire, Judi replied, "It wasn't me. I was home in bed with five witnesses."

—Darryl Cherney and Judi Bari

photo by Karen Pickett

EF!ers in the act of commandeering a Pacific Lumber log truck in Humboldt Co., CA.

DISSENSION WITHIN THE RANKS
Forest Supervisors Come Out Of The Closet

by Paul Hirt

See related story, page 10

When Ronald Reagan appointed John Crowell to the post of assistant secretary of Agriculture in charge of the National Forests, this former timber corporation lawyer announced that his goal for his first four years was to *double* timber harvests in the National Forests. This announcement came after years of unsustainable levels of timber harvesting in the National Forests under previous administrations. Since then, environmentalists have mounted an increasingly ardent campaign to reform both the Forest Service bureaucracy and timber management practices.

But many of us critics, from conservative economists with The Wilderness Society in Washington, D.C. to radical tree sitters in the Pacific Northwest, have wondered why employees of the US Forest Service have not themselves rebelled against this political assault on the integrity of the National Forests. Why has the agency willingly conspired to wipe out the ancient old growth forests of the Northwest? Why have they continued to build million-dollar-a-mile roads into roadless areas to access more timber when there is a glut of timber on the market and a shortage of wilderness? Why are they turning our Southeastern forests into monocultural tree farms and overgrazing our forests in the Great Basin and Southwest?

All kinds of theories have been floating around: The system has corrupted them all...the local level managers have been "captured" by the local industries that they serve...professional training at the nation's universities and the values within the agency itself are dominated by agriculturalists and engineers who want to farm forest "products" and build things...foresters are simply acting "rationally": by meeting outrageous timber targets they get rewarded with enhanced budgets, salaries, and prestige for their forest or region...the Forest Service is a victim and it is really Congress's fault for setting the budgets the way they do. All of these are correct to a degree; but even more is involved.

An in-house poll of Forest Service employees last year revealed another angle to this question of why people who work for the agency have not rebelled against the direction the Forest Service has been going in the past decade. A broad selection of employees from the head mucky-mucks in the Washington office to entry level folks at the districts were asked to identify from a list of values those that they felt the Forest Service rewarded MOST, those that the agency rewarded LEAST, and those that *they themselves* felt the agency *ought to reward* the most. Here are the results of the survey:

The five MOST rewarded FS values are:
#1 Loyalty to the agency
#2 Meeting timber and other commodity targets
#3 Promoting a good FS image
#4 Following rules and regulations
#5 Teamwork

The five LEAST rewarded FS values are:
#1 Independence
#2 Caring for the family (?)
#3 Innovation and risk taking
#4 Caring for future generations
#5 Caring for the welfare and development of others

The top five values that respondents felt *should* be rewarded MOST are:
#1 Professional competence (only 47% said the agency rewarded this most)
#2 Caring for healthy ecosystems (7% said rewarded this most)
#3 Caring for future generations (4% ...)
#4 Innovation and risk-taking (13% ...)
#5 Caring for the welfare and development of others (8% ...)

There is a strong, clear message here about a values conflict between the bureaucracy and those who work for it — as well as a message that the agency rewards those who serve the bureaucracy rather than those who serve the land. This poll proves that not all FS employees have been "corrupted by the system," while it underscores the contention that the reward system needs reforming. But this still does not explain why these people have been so silent and accommodating — except for reasons of job security.

Fortunately, rather than continuing to search for the answer to this question, we can now take heart that this complacency and complicity are apparently on their way out. Significant changes may be coming. Forest Service employees have begun to speak out in the past few years, and as their solidarity has grown, so has the strength of their message. In fact, we appear to be in the midst of a major, historic revolt within the Forest Service, the first such rebellion in the history of the agency. This development is important for two reasons: First, the Forest Service has always been obsessed with presenting a "united front." Visible dissent within the organization is rare. You can see that this is still true today considering that in the poll just cited, employees ranked "independence" as the least rewarded value and "loyalty to the agency" as the most rewarded value. Second, reforms will be easier and more successful if Forest Service employees actively support them.

What is the evidence for this "rebellion," besides an opinion poll? It began with an in-house publication put together mainly by two FS employees in Region 6 (Pacific Northwest) called *The Inner Voice*. Almost as principled and daring as *Earth First! Journal*, this newsletter represented a radical statement of protest against the values and practices of the agency. The masthead of the newsletter announced the formation of a group called the Association of Forest Service Employees for Environmental Ethics (AFSEE). These activist/reformers were flooded with letters of encouragement from agency employees all over the country. Mind you, this is an in-house newsletter. The authors decided that they could best reform the system from within and that only FS employees could belong to AFSEE. The movement is growing rapidly.

More recent evidence of accelerating demand for change was a Forest Supervisors conference held in Tucson, Arizona, 14-16 November 1989 (called "Sunbird"). The tenor of the meeting was extraordinary. Several "Memos to the Chief" evolved out of Sunbird with statements like: "Public values and personal values of Forest Service employees, including Forest Supervisors, are changing.... Many members of the public and many of our employees no longer view us as leaders in environmental conservation. Past and present forest practices do not meet the high quality land management expectations of the public and our employees...there is a growing concern that we have become an agency 'out of control.'" They went on to say that the Forest Service was cutting way too much timber; that soil, water, wildlife, and recreation were insufficiently emphasized; and that too many forests were overgrazed and too few riparian areas were in a healthy condition. These quotes were taken from a memo signed by the supervisors of 63 National Forests in Regions 1, 2, 3, and 4! And they noted that their sentiments reflected those expressed by the supervisors in Regions 5, 6, and 10!

It might be advisable at this point to put a little caution into this analysis. There is a difference between complaint and reform, and before anyone puts too much stock in this "revolt," it would be well to remember the great capacity of bureaucracies to dilute and coopt reformist impulses. *Nevertheless*, it is important that we realize the uniqueness of this event and try to take advantage of it.

Following are a few more observations from the Forest Supervisors' conference that should provide valuable fodder for anyone interested in capitalizing on this sudden revolt of conscience. There are many ways to capitalize: a letter of support to your local forester; calls or letters to your congresspersons about changing National Forest funding priorities; a letter to the editor to help "get the word out" so that everyone begins to think of this as a real movement; an organized campaign by local activists to move their local foresters in this new direction; etc.

Here is a rather obvious statement of fact about the Forest Service which is nevertheless remarkable in that it is taken from an "Open Letter to the Chief" written by the Region 1 Supervisors: "Many people, internally as well as externally, believe the current emphasis of National Forest programs does not reflect the land stewardship values embodied in our forest plans. Congressional emphasis and our traditional methods and practices continue to focus on commodity resources. We are not meeting the quality land management expectations of our public and our employees."

A summary of the findings of the Sunbird conference included this choice statement: "Our timber program has been 35 percent of the National Forest System (NFS) budget for the last 20 years while recreation, fish and wildlife, and soil and water have been 2 to 3 percent each." While the supervisors cautiously acknowledged that recent budgets have funded amenity values a little better, they stated flatly that "...change must come faster."

They also rejected the traditional agency response to criticisms of the timber program: "public challenges to the timber program cannot be overcome by additional funding to timber management, nor by simply improving documentation of the NEPA process"; and then after charging that the "allowable sale quantities" for many Forests "are unrealistic even with full funding," they suggested that the Forest Service simply cut fewer trees.

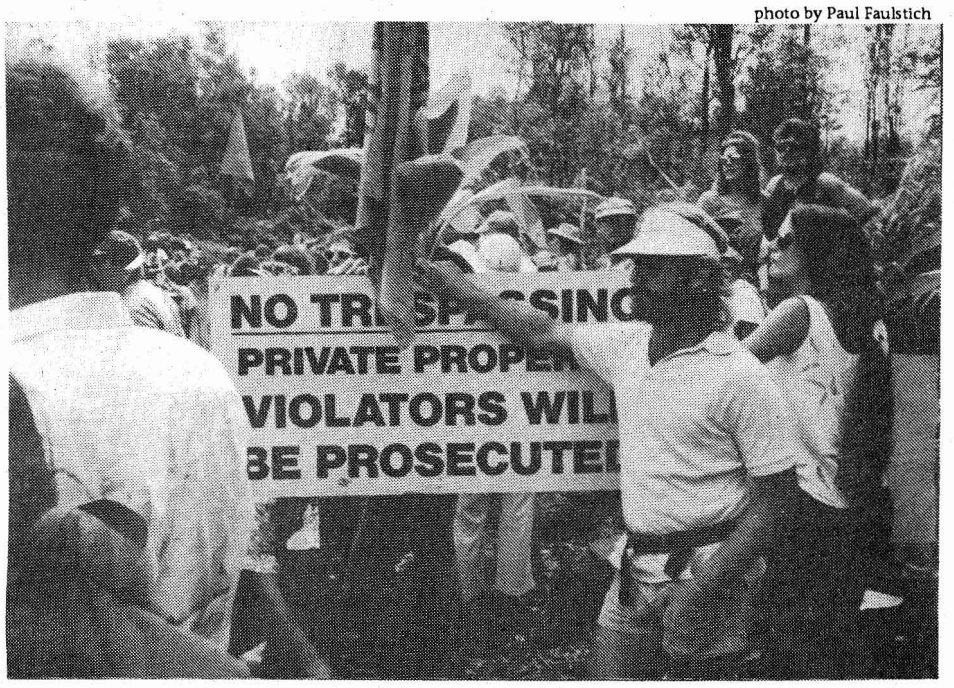
Interestingly, the supervisors noted that "during the first half of this century, we operated in an environment of rural values. We are now operating in an environment where about 5 percent of the population relates to a rural setting." The implication is that the agency currently maintains outdated values and serves an irrelevant population.

On this subject of changing populations and values, the supervisors also noted a huge turnover of supervisors in the last 5 years and projected *70% retirement* in the next 5-8 years. With this change in leadership and influx of new blood, the supervisors felt that significant bureaucratic reforms were both in order and possible. Remarkably, they recommended slashing the Washington office staff, redefining and redirecting the "middle management positions" and pumping more of the budget into the districts where management actually takes place.

We'll have to wait to see where this all leads — but don't be a passive observer.

Paul Hirt is a former conservation chair for the Sierra Club in Arizona. He is presently writing a dissertation on the history of the Forest Service.

photo by Paul Faulstich



1500 protesters opposed to geothermal development in Hawaiian rainforests gathered in March at the edge of the Wao Kele O Puna forest. Arguing that the forest is public land, critical habitat for a huge variety of wildlife species, and necessary for native Hawaiin religious practices, they refused to recognize True Geothermal Company as the 'owner' of the forest. 141 people were arrested in the action.

Hawaiian Rainforest . . .

continued from page 1

vate land at Kahauale'a. This adjacent land was slated for geothermal development until it was partially covered by a fresh lava flow; 12,000 acres of Kahauale'a are now covered with lava, and 1200 acres have been wood chipped.

There was no public input or legislative vote on this land swap. Development immediately began in the rainforest, even without preparation of environmental impact statements. The plan has been to develop fast, so that by the time the public gets onto the scheme it will be too late.

Native Hawaiians and the Pele Defense Fund are challenging the land swap in court, but meanwhile destruction continues daily. The Pele Defense Fund argues that the state illegally bypassed due process through the land swap, and illegally streamlined the geothermal permit process to discourage public debate.

Pele, the Hawaiian volcano goddess, is manifested in Kilauea and surrounding areas. Native Hawaiians believe that geothermal development will injure Pele and that she will retaliate. They are fighting destruction of the Wao Kele O Puna Rainforest on religious grounds. Destruction of the rainforest will also deny the rights of Hawaiians who gather medicinal plants in the forest.

The 500 megawatts would be used for more overdevelopment in Hawaii, of course! The power plant would produce more than 3 times as much electricity as the Big Island currently uses, and any excess power would be transmitted to neighboring islands via an underwater cable. This cable would pass through prime breeding grounds of Humpback Whales. Studies show that electromagnetic fields disorient dolphins and whales, and can cause them to become stranded on beaches. Overland, 9-story-high powerlines would carry electricity across an area that contains more than 350 archaeological sites.

Electricity would also be used for expanded resort development, a missile launching facility, and a metals smelting plant on the Big Island. The smelting plant would be the on-the-ground consequence of stripmining the ocean floor.

With the money already spent on research alone for the underwater cable, solar panels could have been installed for every residence on Oahu, Hawaii's most populated island. All of Hawaii's energy demands can be met through efficient and clean alternatives: solar and wind power, along with conservation measures.

The campaign to destroy the rainforest has been aided by lies and misrepresentation. Geothermal has been called a "renewable" energy source, which it is not. It is no more renewable than oil or coal, and it is widely agreed that the life of a geothermal well is only 20-30 years. In addition, geothermal development will not reduce Hawaii's dependency on imported oil; 66% of the oil consumed in Hawaii is used for transportation. The oil used to generate electricity is residual oil, the stuff left over after refining crude oil for transportation fuel. Therefore, the limiting factor in Hawaii's oil usage is transportation, not electricity. In fact, Hawaii produces more residual oil than is used here, and the remainder is exported.

In 1989 True Geothermal Co. bulldozed almost twice the area "approved" for development, but paid only a token fine. Perhaps the greatest irony, though, was when pro-development factions called anti-geothermal activists "wealthy outsiders"; True Geothermal is based in Wyoming! Moreover, this fight transcends geographical boundaries — it truly is a global issue. If the US can't protect its own rainforests, how can we expect Third World countries to listen to our pleas for protection of theirs?

WHAT YOU CAN DO: Please write immediately to Hawaii's governor and insist that he reconsider his position on geothermal development. Tell him the rest of the country is watching. Ask him to pursue environmentally sound alternatives.
***Governor John Waihee, State Capitol, Honolulu, HI 96813**
If you are coming to the Pacific, contact Hawaii Earth First! (see Directory) to join anti-geothermal protests.

THE AFGHANIZATION OF AMERICA

Is There No End in Sight?

by Leon Czolgosz

The inescapable conclusion from the unprecedented events in Eastern Europe and the Soviet Union during the past year is that a military confrontation between the United States and the Soviet Union is less likely than at any time since the end of World War II. Soviet troops are even now leaving Hungary and Czechoslovakia; with German reunification now only a matter of time, Soviet troops will soon leave East Germany, too. It's likely that within two or three years, there will be no Soviet troops outside the boundaries of the Soviet Union in Europe, unless the Poles choose to retain a token Soviet presence as a counterweight to the specter of a Fourth Reich in Germany.

Of course, the militarists will use the current Soviet show of force in Lithuania to argue that nothing has changed in superpower relations. This argument is false. Regardless of what happens in the Baltic republics, the fundamental balance of forces between the Soviets and the US in Europe has changed forever. As for the Baltic, thoughtful Americans must acknowledge that large portions of the US were acquired by force, and that the bloodiest war in US history was a successful effort by the central government to quash a regional secessionist movement.

The biggest hypothetical threat that US military planners have been preparing for during the last 45 years has been a Soviet invasion of Western Europe. In addition to more than 300,000 US military personnel in Europe deployed specifically against this perceived threat, hundreds of thousands of other personnel, in the continental US and on the high seas, serve primarily to function in that hypothetical European war. With the likelihood of such a war now minimal, will the US military significantly reduce forces and close bases?

No! Despite much media hype about military budget cuts and base closures, the reality is quite different. Yes, a few minor base closures have been proposed (mostly in the districts of Democratic representatives, curiously); but at the same time is planned the largest base expansion program since World War II. In the latest series of moves in the Afghanization of America (a term borrowed from Charles Watson Jr. of Nevada Outdoor Recreation Association), the military is attempting to grab over 4 million acres of land, mostly in the West and mostly on public land, but including lands in the Midwest, South and Northeast, and including hundreds of thousands of acres of private land.

During World War II, a sense of national crisis seemed to justify the military's land acquisitions (the military still has most of these lands). But even then, some people didn't think they should lose their homes, national emergency or not. Such people were evicted from their homes forcibly by armed MPs. Where is the national emergency to justify today's land grab? And where is the public outrage that such a plan should surface even as tensions between the superpowers are lessening?

Just what does the military want? This is hard to tell, since, characteristically, the various branches of the armed forces have proposed a series of seemingly unrelated proposals. Also true to past history, the armed forces are not publicizing their activities. However, enough information has surfaced to give an idea of the scale of the military's appetite. Here is a state-by-state breakdown of the proposals (there are almost certainly others omitted due to lack of information):

CALIFORNIA: The Army wants to add 265,000 acres to its Fort Irwin National Training Center in the Mohave Desert. Most of this land is now administered by the Bureau of Land Management (BLM). The base expansion would include some Wilderness Study Areas (WSAs) as well as lands that might otherwise be added to Death Valley National Monument. The lands would be used by tanks and other mechanized vehicles.

The Navy wants to acquire approximately 8000 acres to add to the China Lake Naval Weapons Center and to the Chocolate Mountains Gunnery Range. Both these areas are also in the Mohave Desert.

NEVADA: The Navy wants to vastly expand its Fallon Naval Air Station. The figures keep changing on this, but the latest estimate is that over 300,000 more acres would be sacrificed. These are mostly BLM lands now (a few ranches might also be affected) and there are probably WSAs involved. These lands would be bombed and strafed by Naval aircraft.

The Army National Guard wants over 600,000 acres in the vicinity of Hawthorne (west central Nevada). Again, this is mostly BLM land and some WSAs may be affected. This area is slated to be a training area for National Guard units from all over the US.

NEVADA/UTAH: The Air Force (which already has extensive holdings in Utah's West Desert) wants about 450,000 more acres along the Nevada/Utah border to use for training in electronic warfare. The proposed expansion is near Great Basin National Park and may include the Deep Creek Mountains WSA in Utah. Fortunately, the same ranchers who successfully resisted the MX Missile racetrack proposal can be counted on to oppose this as well.

WASHINGTON: The Army wants about 6000 acres to expand the Yakima Firing Center.

IDAHO: In the largest of the proposals, so far, the Air Force wants nearly 1.5 million acres in southwestern Idaho to expand an existing 100,000 acre bombing range south of Mountain Home. This scheme would seize some incomparable BLM lands, including the Bruneau River country, as well as some private ranches.

MONTANA: The Air and Army National Guard want over 700,000 acres in northeastern Montana, including productive, private rangelands as well as public lands. Like the Hawthorne, Nevada proposal, a national tank warfare training center is contemplated here.

COLORADO: The Army wants nearly 6000 acres to expand Fort Carson.

MINNESOTA: In 1986 the Army National Guard announced plans to acquire 200,000 acres for a tank and artillery training base. Most of this land would be acquired from the Superior National Forest, near the Boundary Waters Wilderness. Despite the support of the governor, public opposition caused the scheme to be put on hold, but it probably isn't dead.

KANSAS: The Army wants 100,000 acres to expand Fort Riley (an infantry base). Most of the proposed expansion is private land; some of it is highly productive cropland. It evidently includes the Flint Hills [which have some of the last unplowed remnants of the Tallgrass Ecosystem].

MISSISSIPPI: The Army National Guard wants to expand Camp Shelby. The proposal involves a complicated land exchange (by which a few thousand acres of military land would be turned back to the public in Colorado) but the net result appears to be about 100,000 acres removed from public ownership and turned over to the military. Most of this would be taken from the De Soto National Forest.

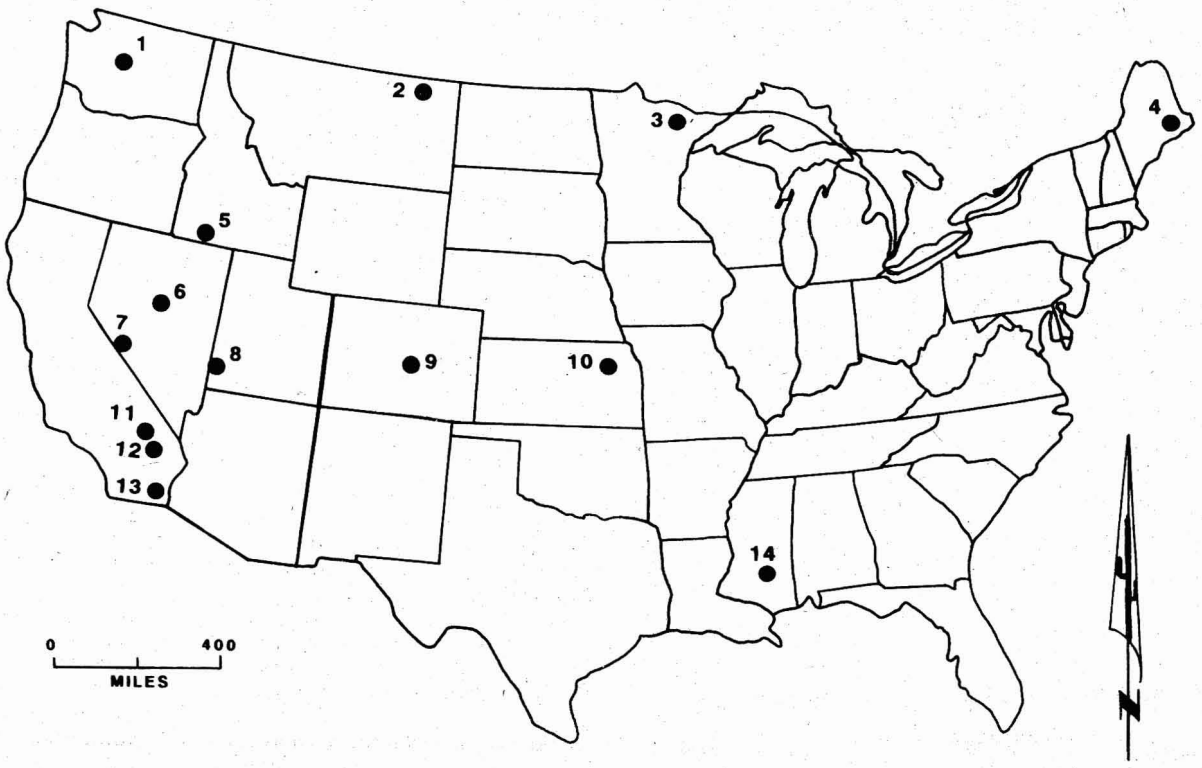
MAINE: The Army National Guard wants to acquire 720,000 acres of woodlands in northern Maine. This land is presently owned by Champion Paper Company (except for a few thousand acres of state land). The military has already concluded an agreement to train on company lands, but would prefer to buy. Since considerable paper company land (most cut-over) has been coming on the market recently, this scheme isn't far-fetched. The lands *should* go into public ownership for a future park or preserve (as has been proposed in *EF! Journal*). If the military has its way, these lands will be used to train National Guard units from all over the eastern US, regular Army, Navy, Air Force and Marine units, and NATO troops.

What can be done to stop this landgrab? Despite lessening East-West tensions, the outlook for curbing the US military's insatiable appetite isn't bright. Ironically, the very likelihood that US forces may eventually be out of Europe simply gives an added argument to military expansionists. After all, they say, if we lose those training areas in Europe, we had better replace them in the US.

Congress ostensibly has the final say on any military land acquisitions. Sometimes the military ignores this legal nicety, and gets away with it, as a few years ago when the Air Force simply took over 80,000 acres of the Groom Range in Nevada . Some of military's base expansion plans are before Congress now, but final action may take years. In some of the proposals, environmental impact statements are being prepared (e.g., the BLM is doing this for the proposed Ft. Irwin expansion and the Idaho proposal). So far, those few in Congress who have expressed any opinion on the matter have been cautious in their remarks. No one wants to be seen as "weak" on the subject of national defense. For instance, Representative Bruce Vento [D-MN], who has held hearings of his House Interior Subcommittee in which citizen complaints about military base expansion plans were aired, still says the military may well need new bases.

What is needed is a barrage of letters to Congress expressing outrage that the military should be trying to expand their land holdings at a time when all reason says they should be reducing. Write your senators (Senate, Washington, DC 20510) and representative (House Office Building, DC 20515) and tell them you oppose any more land acquisitions by the military. If you live in one of the states directly affected, write to your governor and state senators and representatives as well. Tell them to stop the Afghanization of America.

For more information on the threats posed to Americans by their own military forces, subscribe to *Citizen Alert* (Box 5391, Reno, NV 89513).



New military land grabs planned

1. Washington	Yakima Firing Center	6,400 acres	addition	Army
2. Montana	Montana Training Center	718,000 acres	new	Air & Army Nat'l G'rd
3. Minnesota		200,000 acres	new	Army Nat'l Guard
4. Maine		720,000 acres	new	Army Nat'l Guard
5. Idaho	Saylor Creek Bombing Range	1.4 mil. acres	addition	Air Force
6. Nevada	Fallon Master Land Withdrawal	314,000 acres	addition	Navy
7. Nevada	Hawthorne Maneuvers Area	600,000 acres	new	Army Nat'l Guard
8. Nevada/Utah	Electronic Combat Transition Course	450,000 acres	new	Air Force
9. Colorado	Fort Carson/Pinon Canyon	5,760 acres	new	Army
10. Kansas	Fort Riley	100,000 acres	addition	Army
11,13. California	China Lake/Chocolate Mountain	8,320 acres	addition	Navy
12. California	Fort Irwin National Training Center	265,000 acres	addition	Army
14. Mississippi	Camp Shelby	100,000 acres	addition	Army Nat'l Guard
		TOTAL 4,887,480 acres		

GE: Bringing Good Things to Life?

General Electric, the company whose motto claims that they "bring good things to life," is one of the nation's largest nuclear weapons manufacturers. In 1986, INFACT, an organization that "runs corporate responsibility campaigns to stop corporate abuses that endanger people's health and survival," began a GE boycott campaign to force GE to live up to their motto and stop producing nuclear weapons.

In fiscal years 1984-86, GE grossed 11.1 billion dollars of taxpayers' money through weapons contracts with the government. This is, however, only 11.8% of GE's total annual sales, which makes a public boycott potentially successful. Currently about 1.5% of the US population is boycotting GE products. A boycott of 5% would force GE to reevaluate their weapons industry. A boycott of 8-10% could force GE to stop producing nuclear weapons or face an enormous loss of profits.

GE has been active in insuring a market for the weapons it produces. Through the use of political action committees (PACs) GE can legally give large sums of money to congresspersons to insure their support for GE weapons. GE also has 150 lobbyists creating a demand for the weapons. Exxon, in contrast, has 6 lobbyists.

One of the lobbyists' favorite tactics for winning the support of Congress is jobs extortion: reminding members of Congress that the cancellation of weapons contracts will cost jobs and therefore votes. GE has subcontracted the B-1 bomber such that its 50,000 parts come from 5200 subcontractors in 48 states. They left almost no congressional district untouched.

When the B-1 was in danger of cancellation because of charges of obsolescence and because of its enormous cost, GE began an advertising campaign called "Operation Common Sense" to insure the B-1's popularity. Public advertising campaigns such as these are included in the contract costs and are paid for by the taxpayers.

President Carter canceled B-1 production in 1977, but Ronald Reagan resumed the program after he became President. Reagan, who has the dubious distinction of presiding over this country's largest peacetime military build-up, had been on GE's payroll for eight years as a spokesperson. After 1962, when Reagan began his own political career, he

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One Year After the Spill

RESULTS OF THE EXXON VALDEZ OIL SPILL

by Elise Scott, EF! AK Task Force

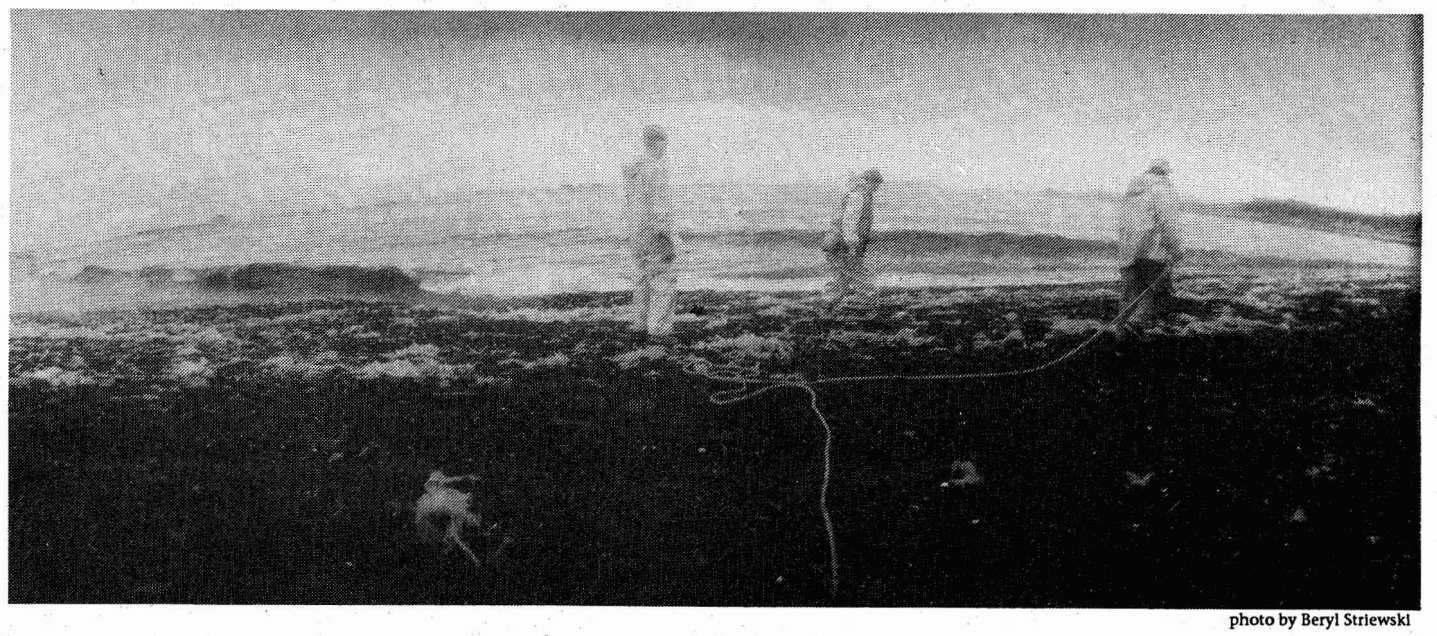

photo by Beryl Striewski

Clean up *1: an act or instance of cleaning 2: an exceptionally large profit, also to make a spectacular profit in a business enterprise: Killing. (Scott, 1990)*

Clean *1: free from dirt or pollution.(Websters, 1985)*

On 24 March 1989, one of the world's largest corporations was given the responsibility to "clean up" the worst oil spill in U.S. history in one of the most biologically rich areas in the world — Alaska's Prince William Sound (PWS). Our government allowed a profit oriented private enterprise, which had just demonstrated extreme irresponsibility, to control a project that, within a few weeks of the spill, proved to be beyond the capacities of modern day technology.

SHORT-TERM IMPACTS

The short-term impacts of the spill are obvious: the ecosystem and mass quantities of animals got drenched in oil. Wildlife mortalities officially include 1010 Sea Otters (about 1/4 of actual deaths), 144 Bald Eagles and 18 other raptors including Peregrine Falcon (about 1/4 actual), 36,429 seabirds (5-10% actual), 17 Grey Whales (normal years 4-5 found dead). The oil also killed deer and bear, number unknown. Exxon severely cut back on wildlife rescue and retrieval boats by mid-summer.

Oil kills in a variety of ways, depending on the animal. Otters have fur, rather than blubber, as insulation from cold Alaskan water; oil destroys the fur's insulating qualities. Even a little oil in their fur can cause death by hypothermia. Diving birds — ducks, cormorants, loons, etc. — die for the same reason, in addition to being drowned when weighted down with oil. The intestines of eagles, falcons, and other birds that eat oiled animals, become coated and can't absorb nutrients or water; eventually the birds starve or become dehydrated. Heavy snows caused many deer to come down and feed on vegetation in the tidal zones. Oil kills the bacteria the deer need to digest their food; starvation ensues.

LONG-TERM IMPACTS

Oil is poisonous. Crude oil is a mixture of organic and inorganic compounds. Aromatic and aliphatid hydrocarbons make up the organic fraction, while trace elements and heavy metals make up the inorganic. These toxins are transferred into the environment through evaporation, dissolution, and dispersion. Lower weight aromatics are evaporated and dispersed as oil droplets. High weight aromatics are dissolved in the water column and dispersed as oil droplets. Both forms are broken down by bacteria and other organisms that can metabolize them.

Marine organisms take up hydrocarbons through the water column and through their diet. Hydrocarbons are transferred across cell membranes when organisms breathe or take up water. Oil droplets can be mistaken for food by zooplankton, especially copepods. "More fish and other aquatic creatures feed on copepods than on any other one kind of animal known." (Riki Ott, PWSER p.32) Copepods store the hydrocarbons in their fat cells and release them in their fecal pellets. Fecal pellets are the primary way oil gets into bottom sediments and organisms. Fecal pellets, plant matter, bacteria, and sediment grains combine to form a major food source for clams, other bivalves, and fish that live in the bottom sediments.

Other marine creatures, such as crabs, shrimp, and otters, eat the tainted clams and fish. After ingestion, hydrocarbons may be eliminated; treated as poisons by the liver and metabolized or detoxified; stored in the fat cells (lipids), then metabolized when the lipids are used for energy; transferred to developing eggs high in lipids (in fish); or slowly eliminated by the body when the source of the toxin is gone. In birds and mammals, preening also leads to ingestion of oil hydrocarbons.

Low level releases of hydrocarbons over long periods cause chronic exposure. Bilges and leaks from pleasure and commercial vessels, spills from fuel docks, releases from oil terminal and refinery activities, and spills from tankers all put oil into the environment. In the case of a spill, bottom sediment and beaches will continue to leach hydrocarbons, causing chronic exposure. "During chronic exposures, hydrocarbons remain both in the water and in the sediments." (PWSER, 33) Long-term exposure damages the ecosystem and its inhabitants. When marine organisms metabolize hydrocarbons, the original compound is transformed into derivatives and metabolites, many of which are mutagens (cause transmittable changes to the genetic material in cells). Mutagens are often also carcinogenic (cause cancer) and teratogenic (cause malformations during cell development from conception to birth).

Thus, the reproductive potential of copepods, crab, shrimp, fish, and birds and mammals can be impaired. Planktonic larvae, eggs, and juvenile life stages can be disastrously affected. "Low doses of aromatic hydrocarbons have been shown to alter behavior in crabs and fish with both lethal and sublethal results." (PWSER, 34)

Results from state and federal studies are not available to the public. The publicly funded studies are being kept secret because government officials fear releasing data would damage their legal case against Exxon and lead to an "ill-informed public." (ADN, 3/4/90) However, available information confirms some of our worst fears:

*Seven Orca are missing from a pod of 35 counted last year. Disappearances usually mean death; normally 1-2 from this pod die per year. Orca were seen surfacing in the spill to breath; blow hole contamination is possible.

*Samples of herring larvae from eggs near oiled shorelines were found to have 90% abnormalities, vs. 6% from unoiled areas.

*Oil has been found in bottom sediments; some deep-dwelling creatures like rockfish have been killed by the oil.

*In the intertidal portion of salmon streams where normally tens of thousands of eggs or juveniles form, biologists were unable to find even one egg, alevin, or fry.

* Peregrine Falcons in spill area occupied fewer nests than expected, and had lower-than-normal productivity.

*A "dead zone" exists on the ocean floor at Herring Bay (Knight Island).

*Last year most Bald Eagle nests in the area were reported empty. The largest remaining Bald Eagle group in the world, 5000, resided in PWS. Bald Eagles will feast on oiled carcasses, contaminating themselves with hydrocarbons.

*Organisms (e.g., algae) won't grow on sample rocks scrubbed clean with solvent last year.

In reality, oil spills cannot be "cleaned" out of an ecosystem by humans, though the consequences may be mitigated by removing as much oil as possible. Oil exposed to air and water "weathers," allowing the hydrocarbons to disperse and become tar balls. If exposure is not chronic, marine animals can live through low contamination and the hydrocarbons eventually will be eliminated from their bodies. Chronic exposure contaminates the food chain. Because of the geography of the areas affected in Alaska, the probability of chronic exposure is high.

Much of the coast of Alaska consists of estuaries, bays, coves, and fjords with many mudflats and marshes and offshore islands. The beaches range from fine sands through cobbles and gravels to boulders. Beaches that are in protected coves, bays, and estuaries are not as exposed to the harsh winter storms that help to wash the oil away. Oil buried in the beach will not be exposed to weathering. These beaches then become sources of chronic exposure, because they continue to leach oil into the ecosystem.

Out of 257,000 barrels spilled, only an estimated 77,000 evaporated; 17,000 were recovered, 350 burned; 162,000 remain in the ecosystem. Portions of this 162,000 have contaminated 1244 miles of shoreline, some has settled into bottom sediments, and the rest is still weathering and moving with the ocean. The oil moved through southwestern PWS into the Gulf of Alaska, hit Kodiak Island, continued up into Cook Inlet, down the Shelikof Strait, and down the Alaska Peninsula. Federal lands hit were Kenai Fjords National Park, Katmai National Park and Preserve, Alaska Maritime National Wildlife Refuge, and Aniakchak National Monument and Preserve. State areas include Kachemak Bay State Park, Shuyak State Park, and McNeil River State Game Sanctuary (the world's highest concentration of Grizzly Bears resides here).

During September, Bill Black, a fisherman from Cordova, myself, and two others initiated the Cordova independent clean up. On the beaches we found oil and fine gravel and sand mixed to make an asphalt-like substance. The salmon stream in Sleepy Bay (now also known as Slicky Bay), which Exxon tried to clean by backhoeing 4 feet down and reconstructing the 15-30 foot wide channel with clean gravel, was thick with oil again. The oil that originally coated the beach has now either sunk deep into the beach or been washed off by winter storms and the "clean up," leaving behind a tar like residue.

EXXON'S "CLEAN UP"

Exxon's clean up worsened the impact of the spill. This is not to say that nothing

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photo by Elise Scott

Oil drilling continues off the Alaska coastline.

GE . . .

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remained closely tied to GE executives and boardmembers. During Reagan's Presidency, GE received multi-year contracts worth $1.58 billion to complete the 100 plane B-1 fleet's engines — for planes projected to obsolete two years after completion.

GE has had many such links with the government. From 1957-59, Neil McElroy, who sat on GE's board of directors from 1950-57 and 59-72, was the Secretary of Defense and used his position to uphold GE's financial interests in military strategy and foreign policy. Thomas Gates, one of GE's largest stockholders, succeeded McElroy as Secretary of Defense and increased GE's profits by obtaining billions of dollars in government weapons contracts. Thomas Paine, a GE executive who was forced to leave NASA in 1969 due to contract scandals, in 1987 headed a presidential space commission that urged NASA to begin work on a space station. Also on GE's board of directors is Star Wars Advisory Panel member David Jones.

With such strong ties to government, GE has been able to firmly root this government in a policy of "peace through strength" — which would be better named *profits through strength*. GE's lust for profits has kept its public relations department busy covering up various unsavory activities, including these:

*In 1985, GE's long history of government fraud, price fixing and violation of anti-trust laws caught up with it when GE became the first weapons contractor to be indicted and found guilty of defrauding the government for overcharging on military contracts.

*GE's sales of faulty and unsafe nuclear reactors has it wrapped up in several legal battles.

*GE led the field of polluters cited in 1985 for the largest number of toxic waste sites in the US.

*GE's labor relations are not good, as it has been involved in union busting, runaway shops, and moving factories out of the US, to countries where labor is cheaper.

These facts (from *INFACT Brings GE to Light*) coupled with INFACT's boycott have forced GE to increase their advertising by 300% since 1986.

Americans have been lied to and forced to fund GE's weapons game for too long. It is time to end America's deadly military-industrial complex.

Please take this simple step toward insuring that our planet remains habitable: Boycott all GE products.

—Anne E. Petermann, GAB EF!

One Year After . . .

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should have been done; rather it is to say that alternative clean up methods would have been less hostile to the environment. The clean up effort put 10,000 workers and hundreds of barges, fishing boats, tugs, houseboats, and planes in the PWS. All sorts of technologies were used, from rakes and shovels to high powered generators and cranes. By mid-summer, the most popular was the "omni": a huge, articulated boom which jetted 165 degree water at the beach at 80 lbs. per square inch.

The hot water washing method did loosen some oil, but it also drove the oil deeper into the beach substrate and par-boiled whatever life lived through the spill. Additionally, washing caused more oil to enter the intertidal zones — the lush, green zones full of plants and animals just below sea level. Research has proven that "heavy traffic by workers trying to clean up the spill weakened the bottom sediment." (NYT, 4/4/89) Workers also tracked oil into non-oiled beach areas.

Prince William Sound was overrun by humans and their machines all summer long. Hundreds of generators, steam cleaners, pumps, and boats drowned the Sound in the noise of industrialization. Diesel and gas spills from routine engine use were numerous. The exhaust from all the engines mixed with the oily smell rising up in the steam from the beach washing. Three barge-mounted incinerators converted 650 tons of toxic waste into air pollutants daily. Also, illegal on-beach burnings occurred.

Exxon was at war. Like the villages of Vietnam, Exxon was going to "clean" the beaches even if they had to destroy them to do so.

There were and are less destructive ways of dealing with the spill, such as low impact technologies like rakes and shovels. Big booms, big cranes, big boats, big hoses, scalding water, and masses of people made the spill impact worse.

No attempt was made to head off the leading edges of the spill, even when it separated into smaller masses. Exxon was consumed by their beach cleaning public relations campaign. Numerous tales were told of Exxon assigning 70 people to a beach, moving equipment in, and then disbanding the operation once the media had been given a showing. They had complete control over what the media saw. Preoccupied with getting the top layer of scum off the PWS beaches, Exxon neglected to prevent the oil from covering more beaches. As a result, beaches down to the southern end of the Alaskan Peninsula got hit.

Exxon's behavior was consistent with that of large corporate structures whose lives depend on consumers. Exxon spent a lot of money to look as if they were doing something. Exxon President Reynolds tells us "...in not too long a time ...we will not be able to tell what happened." (L.A.Times, 3/18/90) How they will pry off the black, asphalt ring that interrupts the sheer, gray cliff faces of PWS, I'm not sure. Exxon should not have been given control of the clean up.

Alaska had little choice but to sit by, fret and wring their hands. The state had no money. They had given their resources to the oil industry for a mere fraction of what they were worth; and with no state income tax, the drop in industry spending in the state had depleted their bank accounts. The Alaska Department of Environmental Conservation (DEC) did attempt to keep Exxon from doing even more damage with their toxic dispersants, but they capitulated to the incinerators and bioremediation.

The federal government never declared the spill a national disaster, and in fact ignored federal law. Under the Clean Water Act, the government is required to take over a clean up operation if the polluter is not doing a satisfactory job. The government's defense was that Exxon had the technical ability and the expertise (such as drunkards for tanker captains and boom materials frozen under 6 feet of snow). In reality, Bush and his legislative cohorts didn't want to spend the money and didn't want to make a big deal of the spill by declaring it a national disaster or taking over the clean up, which would be admitting industry failure. To admit industry incompetence would be to risk the loss of drilling in Bristol Bay and the Arctic National Wildlife Refuge.

At this time no one is equipped to handle a spill the size of the Exxon Valdez. This year's clean up plans are to use low impact technologies, such as shovels and pickaxes. However, Exxon is strong-arming the DEC to permit bioremediation. Bioremediation is the use of fertilizer to promote oil-eating bacteria growth. It has its own toxic aspects (e.g., promotes excessive algae growth) and was proven ineffective over the winter. Activists are urging the DEC to stand up to Exxon. They are urging Exxon to buy back for the state the timber rights sold to Natives on land in the Prince William Sound. Purchasing the $50-100 million worth of timber rights and transferring them to a conservation trust would be one way for Exxon to make amends.

In the end there is no way out of the reality that oil is toxic and its toxic aspects do not disappear. Eventually, the waters of Alaska merge with those of the rest of the world. Oil spills happen all the time. We don't know how long we have before the oceans die....

WHAT YOU CAN DO: Aside from helping overcome the patriarchal, capitalistic oligarchy that oppresses the world into masked slavery and brainless conformity, you can join the EF!AK Task Force 1990 campaigns. See related article for details.

Elise Scott is a 25 year Alaskan, rhetorician, and founder of the EF! Alaska Task Force.

photo by Beryl Striewski

The EF! Alaska Task Force 1990 Campaign

The Alaska Task Force wants to develop a nationwide network of activists concerned about Alaska, who can start their own Alaska action groups for coordinated direct actions and educational campaigns. An informational packet, slide show, and newsletter will soon be available. Any research (alternative energy/oil) articles, cartoons or artwork, and ideas for actions would be appreciated.

The Arctic National Wildlife Refuge - ANWR desperately needs actions, educational and direct. Contrary to what we might expect due to the spill, inside sources say it does not look good for ANWR. The Refuge will be a focus for the Task Force this year. I NEED SLIDES of the North Slope and the Refuge; please donate; we'll pay for copies.

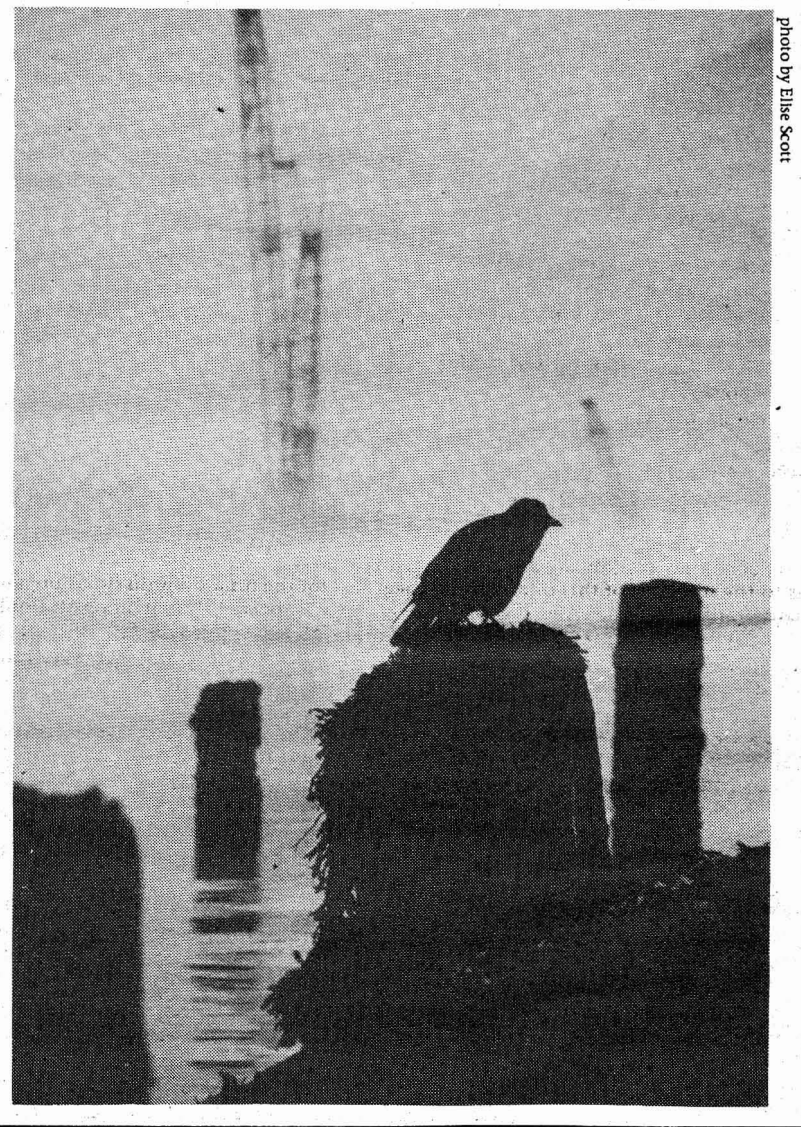
Bristol Bay - We need to demand a buy-back of the Bristol Bay leases. The MMS, a leasing service for government, is evaluating contingency plans and technology to determine if a large spill could be contained. This is a NATIONAL ISSUE and it needs actions.

Alternative Energy - Both the above issues are connected to the issue of energy. We have been told by the oil industry and government that the devastation in Prince William Sound is simply the "cost" of using oil. Indeed, the oil industry's abusive behavior on the North Slope, and their proven inability and unwillingness to develop or transport oil conscientiously, testify to the above. WE NEED ALTERNATIVE ENERGIES NOW.

EXXON TO BUY PWS TIMBER RIGHTS! - At least we hope. Exxon needs to be pushed to give AK the money to buy back the timber rights to the fragile forests in the Sound. The lands should be put in a conservation trust.

Thanks to all who have sent donations; they are desperately needed. For a newsletter or to send more donations write: EF! AKTF, POB 1019, San Rafael, CA 94915 or call (415) 564- 7001 or Bay Area EF!

photo by Elise Scott



A Kinder, Gentler Forest Service; Or, Manly Guys Get Sensitive

by Norman Peale

The "sensitive eighties" have finally come to the Forest Service — or else Bush's admonitions about a "kinder, gentler America" have trickled down. Forest supervisors, regional directors, and Washington staffers all met in Tucson, Arizona last November to discuss new directions for the agency. Resembling a cross between an Erhardt Seminar Training (EST) program for self-actualization and an Alan Savory seminar for Holistic Resource Management, these manly leaders of a macho agency spent three days encouraging each other to "BEHAVE IN A CARING WAY," to "TAKE RESPONSIBILITY TO LISTEN, LISTEN, LISTEN," and to "CREATE A WINNING FUTURE" (*verbatim quotes* from the proceedings).

This rash of sensitivity seems to permeate even the uppermost echelons of the bureaucracy: Chief Dale Robertson himself encouraged his minions to strive for an "Innovative/Creative People-Oriented Forest Service Culture," to "face the future with a positive attitude," and to "evolve into a new sense of vigor and vitality."

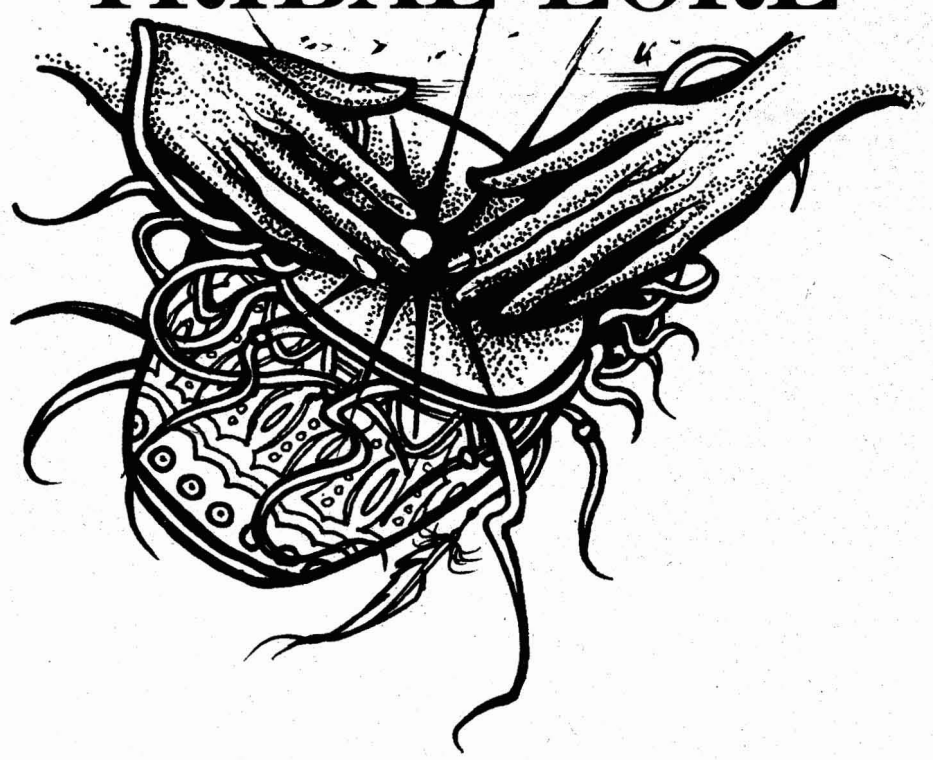
One of the topics of discussion was "work force diversity." The Supervisors of regions 1-4 jointly produced a message to the chief of the Forest Service in which they recommended that the agency "focus on the many positive aspects of having a work force that is diverse in race, gender, age, lifestyle and philosophy, and bring as many people as possible into the solution." They even invited a professor of sociology from Northeastern Illinois University to ~~lecture them~~, excuse me, to *share with them* some of his thoughts on "Cultural Diversity." Imagine an auditorium full of agency heads listening to this:

"The scripts in this Agency historically have said the leaderships are men, white men.... And I submit to you that this Nation is not all about simply the most prominent group represented here [white men].... I see an America that celebrates diversity. I see women leading our important march for the destiny with freedom. We have to do more for the physically handicapped than provide parking spaces and toilet doors that are wider. We need to be able to appreciate that we are responsible, we are trustees, and it's in that spirit that I've come to you, celebrating diversity!"

Other highlights of the conference included presentations on **WELLNESS** ("your body is an investment"); **REFLECTIVE LISTENING**, and a **VALUES SURVEY**. The latter presentation revealed the results of a survey of agency employees' attitudes regarding what **values** they felt the agency should reward vs. what values they felt the agency actually did reward. Among the top values employees felt the agency *should* reward were "caring for future generations" and "caring for the welfare/development of others." Needless to say, these same employees judged these two values to be on the low end of the Forest Service reward system hierarchy.

In the light of these momentous developments, it seems possible that future agency law enforcement trainers might replace firearms practice with Tai Chi Chuan lessons; silviculturalists might give seminars on the effects of classical music on Douglas-fir seedling growth rates; range managers might require ranchers to get regular cholesterol check-ups as part of their grazing permit; and recreation staffers might use conflict management techniques to desegregate hunters and bird-watchers in National Forest campgrounds.

TRIBAL LORE



VICTORY FOR THE DOLPHINS!

Truth in Labeling Campaign Pays Off

Unless you've been living in a sock drawer since April 12, you've probably heard about the announcement made that day by the H.J. Heinz Co., owner of StarKist Tuna. Heinz has agreed to stop buying any tuna caught by purse seining on dolphins, or by using driftnets or gillnets, effective immediately. This extends to all their international branches and all their products, so kitty can have tuna again too.

Heinz CEO Anthony O'Reilly stated at their press conference in Washington, DC that their decision was the result of consumer pressure, calling it a "wonderful example of consumer democracy in action." It worked, folks! All those letters, truth-in-labeling stickers, and money better spent elsewhere added up to a public relations headache they couldn't ignore. Skepticism as to the integrity of this or any other megacorporation statement is sensible, but at this point they have much more to lose by back-pedaling than by keeping their promises. They'll start using a "dolphin-safe" label in two or three months, once all the tainted stuff is out of the distribution stream. So if you must, go ahead. We're waiting for the label ourselves.

Predictably, Greenpeace, which NEVER endorsed the boycott, immediately unleashed their PR department on the DC media and took all the credit, competing with the Heinz Co. for the barf-arama award. Isn't it time these claim-jumpers and campaign-rustlers were taken to task? (Hint: ask Paul Watson...) Heinz, for their entry, on April 19 placed a full-page ad in all major US metropolitan daily papers showing a dolphin head saying, "Thanks, StarKist!" ("Thanks" for finally ending the genocide? This "green corporation" stuff is stomach-turning, *n'est-ce pas*?)

How did the other tuna companies react? Bumblebee and Chicken-of-the-Sea panicked, and issued their own press releases and sample "dolphin-safe" labels within a few hours. Of course, now they're unable to make good on their own hype. Needle 'em! Keep on tagging their tins, and write to ask them why they can't do the same as StarKist. The remaining tuna labels, mostly small independent and "house" brands, have taken no official position, though it seems clear that dolphin-safe StarKist will force any remaining dolphin-killers off the shelves. Identify your local house labels (on the West Coast, Safeway is a prime target) and go after them!

The Ocean-Dolphin Task Force is getting out of the silent educator business for a while, and we're changing our name to the Oceans Task Force. We'll continue to monitor the tuna-dolphin situation, and will keep you posted, but it honestly looks like the other canners will fall like dominoes fairly soon. If you have ever ordered stickers from us, you're probably on our mailing list and will get an update soon; if not, write to us and we'll add you. Sticker orders received after April 12 will be filled at 2 for 1 (since the Heinz stickers are no longer applicable) until supplies run out. After that we'll return your money but keep your name unless you specify otherwise (like keeping your money and returning your name?). We'll be doing more to oppose the Mexican sea turtle slaughter, and broadening our involvement in ocean ecosystems issues such as pollution, marine debris and oil. Your input is needed. Stop the corporate rape of the watery two-thirds of Gaia! Anyone out there gotta boat?

— Candace Batycki

Letters for Tongass Needed

The Tongass Timber Reform Act is being reintroduced in Congress, and letters are needed to help strengthen and pass it. The bill is now called HR 987 Johnston Substitute. The substitute version: 1) eliminates the congressionally mandated supply of 4.5 billion board feet of timber annually; 2) eliminates an automatic timber program appropriation of at least $40 million annually; 3) mandates 100' buffer strips along both sides of all *salmon spawning* streams; 4) *modifies* the exclusive 50-year contracts with the two Alaska pulp giants; 5) mandates permanent protection from commercial logging for *12 areas comprising 673,000 acres.*

We need to do three things: 1) Write and call senators. 2) Send a copy of all letters to George Mitchell, the Senate majority leader, with a note encouraging him to bring the bill to a floor vote, as he controls the agenda. 3) Go to Washington, DC or local congressional offices and lobby senators.

In your letters advocate 3 strengthening measures: 1) protection for all 23 areas (1.8 million acres) proposed for Wilderness in previous versions of the Act; 2) termination rather than modification of the contracts; 3) inclusion of trout streams in the buffer strip provision. Send letters to senators, US Senate, Washington, DC 20510; and representatives, House of Reps, DC 20515.

—Student Environmental Action Coalition, CB#5115, U of North Carolina, Chapel Hill, 27599

Gas Pipes to Dissect SW CO

This spring and summer extensive pipeline construction is planned throughout La Plata County in southwest Colorado. Seven major pipelines plus dozens of smaller ones are planned for both coalbed methane gas wells and water disposal wells (to get rid of the brine produced by this gas-passing technology). These pipelines will cross the Pine, Florida, and Animas Rivers numerous times, and will destroy pristine riparian habitat.

Under current regulations only the largest of these pipelines will require an environmental impact statement (EIS). The others can be bulldozed through with little or no regulatory oversight or mitigation. Under the Clean Water Act, a section 404 permit is required to excavate or disturb streambeds and wetlands. The EPA has some advisory capacity over 404 permits, but the US Army Corps of Engineers has the sole regulatory authority for pipeline permits and administration of 404 permits.

Most large gas developers (including AMOCO — major gas passers in southwest Colorado) have nationwide 404 permits which allow them to bulldoze across streams whenever and wherever they please. The Army Corps has discretionary authority to require individual crossing permits and to review each of these individual permits for cumulative impacts; but the Corps will not exercise this authority unless the public pressures it to do so.

Before June 1, please call or write Grady McNure, Chief, Regional Unit 4, US Army Corps of Engineers, 764 Horizon Drive, Room 211, Grand Junction, CO 81506-8719, 303-243-1199; and Sarah Fowler, water quality requirement section, EPA region VIII, 8 WM-SP, 999 18th St, Denver, CO 80202, 303-293-1575. Tell them the pipelines ought not be built. Demand that if they are built, the Army Corps at least require individual crossing permits for streams and wetlands instead of nationwide permits, and complete cumulative impact review assessments and require adequate mitigation for all impacts. Also demand that the least damaging construction methods be used, in the least fragile sites.

The Army Corps will tell you they don't have any control over this issue. That's just more b.s. They do and they need to be pressured. If we don't act now the streams and rivers of southwest Colorado will become permanent mud flows and most aquatic life will be destroyed. This damage will be particularly severe because we're in the middle of a drought and stream flows are extremely low.

For more information contact Larry Hartsfield, 543 E 5th Ave, Durango, CO 81301, 303-259-1812; or Gwen Lachelt, Western Colorado Congress 303-259-3583.

LA EF! Heard on Angeles Forest Plan Appeal

Two years after their initial filing, Los Angeles Earth First!'s appeal of the Freddies' plans for the heavily-impacted Angeles National Forest finally moved to an oral hearing. The informal presentation was made via conference call on March 12 to Forest Service offices back in the converted swampland of Washington, DC.

Mark Williams represented L.A. EF!, while Peter Bralver spoke for WNETT, the Wide Network Environmental Think Tank. Both challenged decisions on expanded ORV use in the Forest; failure to make critical Wilderness designations in severe stress areas (Arroyo Seco) needing a chance to recover; and use of grazing and artificial fire regimes as methods of "vegetation management."

Bralver took the scientific tack, expanding arguments on adaptability and ecological equilibrium that had been used successfully in previous FS and NPS hearings and appeals. Williams argued that wilderness values, and thus "'non-management' management," were extra critical in the Angeles, given its abutment to the sprawling southern California necropolis. Its high use by local citizens, seeking ever-rarer undeveloped areas in which to escape from overwhelming industrialism and artifice, mandates that the FS reduce all stress factors — commercial exploitation, motor bikes ... — impinging on this mixed-chaparral and mountain forest ecosystem.

Bralver is expanding his work on landscape adaptability for an upcoming article discussing the Angeles. The final decision on LA EF!'s appeal is expected later this year.

—Captain Swing & Old Pantheist, LA EF!

Green Web Critiques Sustainable Development

The Green Web, a small independent research group serving the environmental and green movements, has written an 8 page report revealing the dangers of "sustainable development." Below are excerpts from that report. Other excellent Green Web reports include Blueberry Spraying: A Chemical Horror Story, Pulp and Paper Mill Pollution, Christmas Tree Cultivation: Open Season on Pesticides, Uranium in Well Water in Nova Scotia, Atlantic Seals — On the Road to Extinction?, Grey Seals Under Attack, and The Case Against Forest Spraying with the Bacterial Insecticide Bt. For copies, write Green Web, RR#3, Saltsprings, Pictou County, Nova Scotia, Canada BOK 1P0, and include a donation if possible.

Sustainable Development: Expanded Environmental Destruction

Introduction: In Halifax, Nova Scotia, a conference on "sustainable development" was held on 15-17 October 1989. The conference was organized by the Nova Scotia Department of the Environment. One of the objectives was "to initiate the process of drafting a sustainable development strategy in Nova Scotia." The conference featured corporate and government speakers, a UN spokesperson, an "environmental consultant," and environmentalists. The Ecology Action Centre publicly defended its participation in the newspapers.

In New Brunswick, the Conservation Council, the province's equivalent of the Ecology Action Centre, organized a joint workshop in Fredericton, 23-24 April 1988, with the provincial Federation of Labour. Funding was from Environment Canada and "support" from business groups like Brunswick Mining and Smelter Corporation, McCain Foods, and Miramichi Pulp and Paper.

The Ecology Action Centre and the Conservation Council have provincial equivalent organizations across the country. On a national level, equivalents are Friends of the Earth and Pollution Probe. These organizations, with their paid staffs, can be said to represent that tendency within the environmental movement that solicits government and corporate handouts and that explicitly advocates working with, not against, the provincial and federal governments. Such groups are the environmental organizations that the media consult for an instant "environmental" voice on any issue.

"Sustainable Development": The term 'sustainable development' has been popularized through the publication in 1987 of the 400-page United Nations document *Our Common Future* by the World Commission on Environment and Development, popularly referred to as the Brundtland Report after its chairperson. The report emphasizes that economic growth is needed and advocates a five to tenfold increase, worldwide, in manufacturing output.

In the Brundtland Report, ecology is not primary. The Report has a human-centered orientation. Other species of animals and plants do not have intrinsic value, but are considered "resources" for human use.

The UN Report projects a world population of 8.2 billion persons by the year 2025. It gives data showing that the underdeveloped world, with a few significant exceptions, is becoming poorer in comparison to the developed world and that countries that are poor, have massive debt repayments, little productive land available, rapidly increasing populations, etc. postpone environmental concerns. But apart from moral exhortations, nothing is offered about the *necessity* to transfer much of the existing productive wealth from the "developed" to the underdeveloped world.

Lucien Bouchard, the current federal minister of the environment, endorsed sustainable development in an October 1989 speech to the UN. The Canadian Labour Congress Environmental Committee has produced a document called The Basis for a National Environmental Policy (4-89) in which sustainable development is supported. It is clear that the CLC sees itself working with the social democratic New Democratic Party of Canada. Ed Broadbent, former national leader of the NDP, pledged party support for sustainable development and the Brundtland Report.

Here are some of the reasons why sustainable development has enjoyed some support from environmentalists and greens:

*A belief that the Brundtland Report is a big step forward for the environmental/green movements. This amounts to a selective reading, where the data on environmental degradation and poverty are emphasized, and the growth economics and "resource" orientation of the Report is ignored or downplayed.

*A belief that taking part in a "forum" with business and government (and perhaps

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Tribal Lore . . .

continued from page 11

labour) at least gives an opportunity to have an environmental view publicly expressed.

*A belief that working with government and business "is the only realistic way."

Appeal to Environmentalists and Greens: We should not support sustainable development. This concept provides the ideological cover or legitimization for greatly expanded economic growth; hence expanded or accelerated environmental destruction. Sustainable development is all about sustaining development.

An influential book which appeared in 1972, *The Limits to Growth*, from "The Club of Rome," makes the Brundtland Report seem a giant step backward. This earlier publication, while still human-centered, took the position that in a finite world there must be limits to growth; that we should stop equating growth with "progress"; and that we should look to a world model of a non-growing state of global equilibrium, where population and capital are essentially stable.

We ask environmentalists and greens to face the need to put forth an alternative ecological vision to that offered by sustainable development.

The old ways of gearing up each year for the endless piecemeal battles over particular environmental issues are no longer sufficient. In the forestry sector, for example, the environmental war is being lost. While public awareness is growing, each year there is more clearcutting, more destruction of hardwoods, more spraying, more destruction of wildlife habitats, more demand for pulp fibre. The Nova Scotia government proudly boasts of its "sustainable" forestry, as shown by the 4 million softwood seedlings planted by the province in 1978, 30 million in 1988, and a projected 60 million in 1998.

The preservation of ecology must be the first consideration when deciding, for example, whether or not to build a coal-fired generating station like the Point Aconi power plant in Cape Breton. Such preservation means placing the local situation in a global context. Biocentrism means a position of zero discharge for all industrial pollutants.

—David Orton, February 1990

WI Environmentalists and Scientists Sue FS

A group of local and national environmental organizations and Wisconsin scientists filed suit on April 2 in the US District Court against the US Forest Service, challenging the Nicolet National Forest's long-term management plan. The court action, which charges that present management policy overemphasizes timber production to the exclusion of environmental and recreational values, follows a five year effort by the conservation groups to redirect land use in the Nicolet.

The suit was filed on behalf of the Sierra Club, the Wisconsin Audubon Council and the Wisconsin Forest Conservation Task Force, and will be a precedent-setting test case with national significance for National Forest management. At a press conference in Milwaukee, representatives of national environmental groups and the Association of Forest Service Employees for Environmental Ethics, strongly supported the action.

Specifically, the suit seeks to force the Forest Service to:

*Preserve large undisturbed sections of the 1000 square-mile Nicolet NF that can function as intact ecosystems to insure the survival of plants and animals that require deep woods habitats.

*Disclose to the public the environmental consequences of timber harvesting, road construction and forest fragmentation.

*Inventory remote and scenic recreational sites, and prevent the intensive logging and roading of these areas.

*Provide a balanced approach to recreational opportunities so that the Nicolet does not become a homogenous, highly-roaded timber production area.

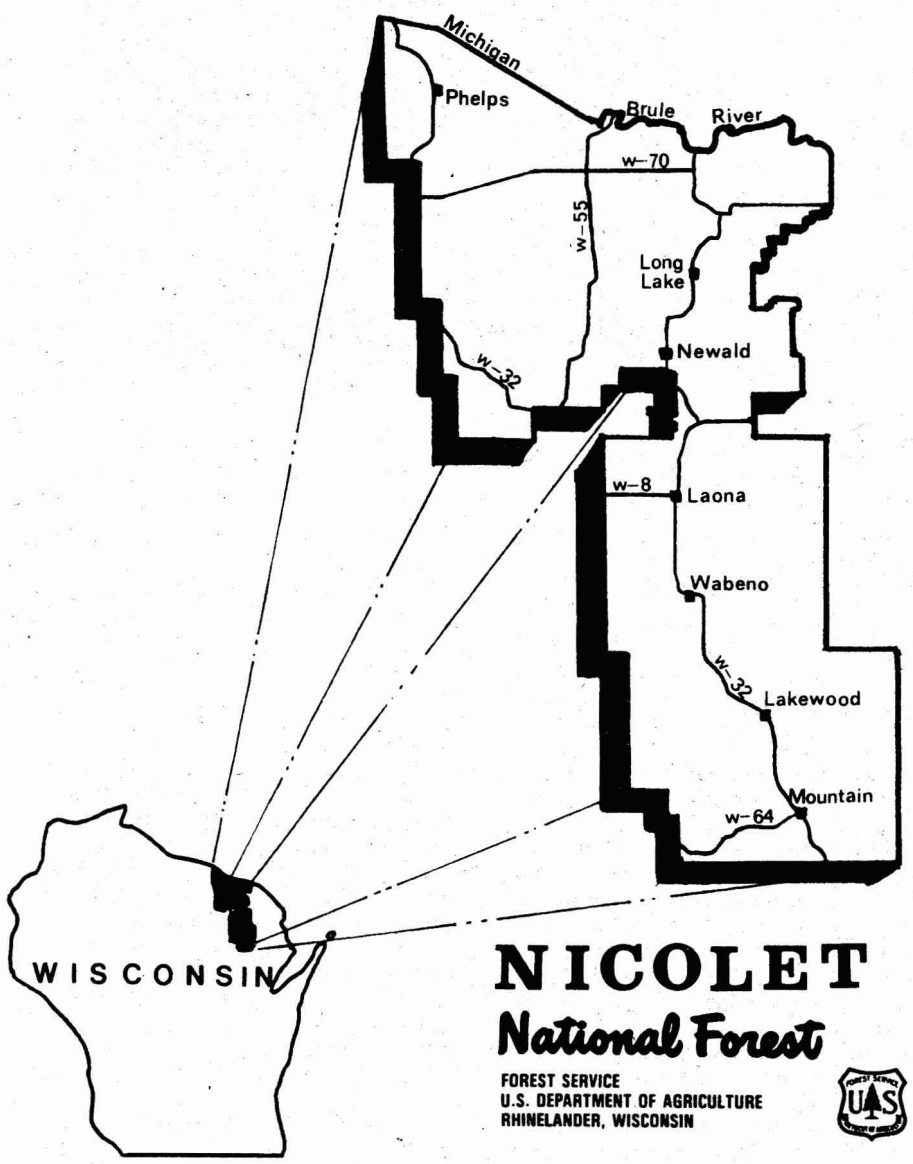
The decision to file suit was made after Wisconsin environmentalists' 600 page appeal of the Nicolet's long-term management plan, filed in late 1986, was rejected by FS Chief F. Dale Robertson in January. Included in this initial administrative appeal were supporting statements from prominent biologists, among them Paul Ehrlich, Daniel Janzen, Edward O. Wilson, and Jared Diamond.

The Wisconsin suit is likely to have implications for management of the entire National Forest System. It will almost certainly be contested vigorously by both the FS and timber interests.

The conservationists bringing suit have stressed that their proposed modifications to the Nicolet plan would result in only a marginal scaling back of timber cutting in the forest. "All we're talking about is rearranging planned timber cuts and associated roads so they occur in 75% of the Nicolet's area, rather than 95%. We've seen no evidence that this will result in a major reduction in the wood available to the timber industry," said Sharon Clark Gaskill, spokesperson for the Wisconsin Audubon Council. Gaskill noted that federal lands represent only about 8% of the timber resource in Wisconsin, yet are the only remaining large blocks of public land that can ensure intact ecosystems for the future.

For more information, contact Stephen Solheim, scientist, 608-262-2792; Sharon Clark Gaskill, environmentalist, 767-3642; or Walter Kuhlmann, attorney, 257-9521.

ed. note: Several years ago, Midwest Headwaters Earth First! presented a visionary Wilderness proposal for the National Forests of northern Wisconsin that would go far beyond the steps requested in the above suit. For a copy, write Headwaters EF!



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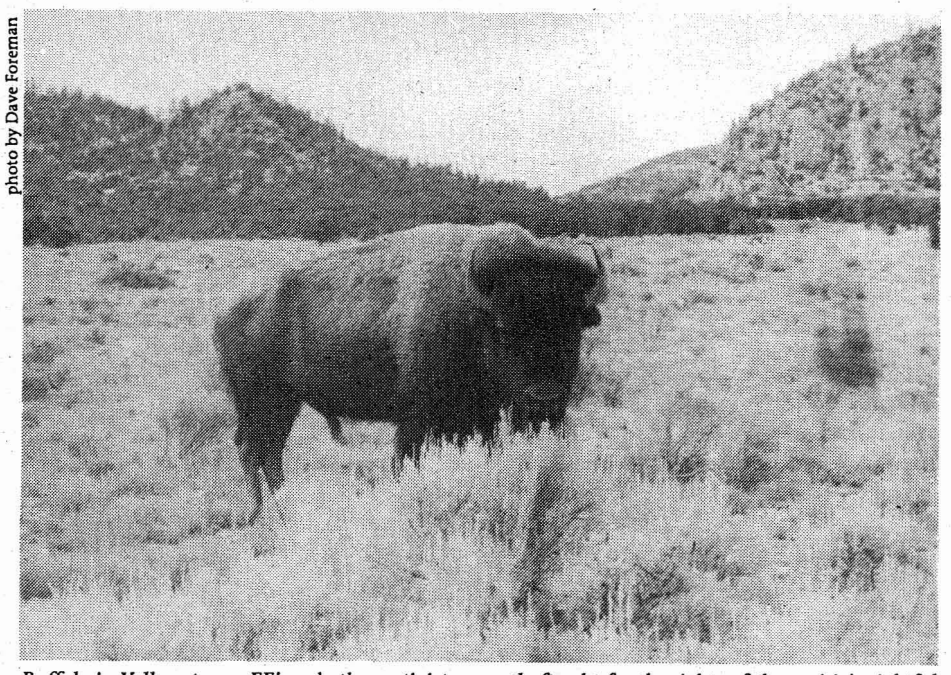


photo by Dave Foreman

Buffalo in Yellowstone. EF! and other activists recently fought for the rights of the prairie's rightful grazer.

Alaska Chooses A Scape Goat

Alaska now has its own Spotted Owl: the Stellar Sea Lion.

The Stellar Sea Lion inhabits the rocks and cliffs of south-central and southwestern Alaska in Prince William Sound and along the Aleutian Chain. Southeast Alaska also has Stellars, but they are a separate population, much smaller in a number than the groups to the west.

Over the last 20 years, Stellar numbers have dropped in Prince William Sound and the Aleutians. The drop has accelerated over the last 5 years. This past summer, following the Exxon Valdez disaster, less than 20% of the expected Stellar Sea Lion population returned to their rookeries.

No one knows why this decline is occurring. Dead animals have not been seen; the animals have not been seen in new locations. They've just disappeared. No one knows if this year's record low numbers are related to the oil spill.

About 20 years ago, Stellar Sea Lions changed their eating habits, switching to the rapidly increasing numbers of Pollock in Prince William Sound. Soon they were eating only Pollock. In recent years, Pollock has become a popular commercial fish, taken by the millions and processed in huge off-shore factories for their roe, which is shipped to Japan as a highly lucrative delicacy. This increasing Pollock take is suspected as causing the Stellar's rapid decline.

When the Stellar Sea Lion was finally declared a Threatened Species, the lines were drawn. Commercial fishermen blame sea lions for taking fish from their lines and nets, and many fishermen shoot sea lions on sight. This too is thought to be contributing to the species' demise. Now with this Threatened Species classification, fishermen can be prosecuted for their usual destructive practices. If, as many environmentalists hope, Stellar Sea Lions are reclassified as Endangered, the conflict will become even greater.

The situation is the same as with the Spotted Owl. Economic gain for humans conflicts with the continued survival of a non-human species. Fishing is as much a way of life here as logging is in the Northwest. The battle to save the Stellar Sea Lion will be as hard fought.

WHAT YOU CAN DO: Learn about the Stellar Sea Lion situation in Alaska. Contact your congressional representatives and ask that these marine mammals be protected as an Endangered Species.

—Michael Lewis, Valdez, AK

Activists Obstruct Buffalo Blood Bath

5am, just west of Yellowstone National Park: We mount our crotch rockets and cruise to the trailhead to meet the skiers. The crotch rockets [rented snowmobiles] race ahead and locate a band of 18 Buffalo grazing peacefully beside Hebgen Lake. We knew that more of our kind were coming soon to bring great sadness to this small band. The Buffalos' crime: following ancient patterns of winter migration and foraging, they had stepped into cow country. They had ventured 4 miles beyond the invisible boundary of Yellowstone National Park.

[Montana's Department of Fish, Wildlife, and Parks had awarded hunters permits to kill Buffalo outside the Park. Montana officials justify this Bison slaughter with the claim that the wild bovids may spread brucellosis to livestock in Montana. Earth First! and Fund For Animals activists organized the action to disrupt the slaughter.—ed.]

The first hunter shot a mother Buffalo. She lurched and stumbled 30 feet, her bewildered calf terrified as the herd took off and mom didn't. We gaped incredulously. It was actually happening. "Put her out of her misery!" I screamed as she struggled to get up. The hunter gave a look of mocking and sauntered over to shoot from the hip. The herd was moving and we scrambled to stay with them.

Press and spectators arrived to watch the drama. Officials stole the keys from one of our snowmachines and we returned the favor. After the second murder, emotions ran high. An activist poked a hunter with a ski pole. Bubblehead, a Squish & Maim official, tackled the activist and the hunter took his shot, with another activist directly behind the Buffalo. A third one was down.

A grieving eco-feminist knocked Bubblehead on his ass in her rush to catch up with the herd. She put herself between the killer and the fallen mother. Gathering a handful of blood, she turned to the hunter and said, "the war has begun." Then she smeared blood on his face, cursing: "The spirit of this Buffalo will haunt you till your dying days."

Epilogue: We must put an end to the myth of brucellosis as an excuse for slaughtering The Old Ones. Elk and deer carry brucellosis, both "free" roaming species. Bull Bison cannot transmit brucellosis, yet they are murdered too. [It is transmitted through aborted fetuses.—ed.] Obviously, the public lands grazing industry is flexing their muscles — because Buffalo eat the same thing as cows and they tear down fences!

This is not a hunting issue! The kill is for boosting egos and protecting cattle ranchers' profits. Of course, Fish, Wildlife, and Parkinglots tells us this is just a temporary measure (not for the Buffalo they kill!). They've been working on a long-term management plan ever since Montana became Buffalo, 'er no, brucellosis free five years ago.

EF! Buffalo defenders need funds for transportation, cheap lodging, possibly crotch rocket rentals, and maybe bail. Please send contributions and requests for more information to POB 1733, Bozeman, MT 59771.

—Fire Grizzly, Delylah Dogwomon

ed. note: EF! activists John Lilburn and Lee Dessoux are facing charges for their "harassment" of hunters. On the day of the action, Montana US Representative John Marlenee, angered at the opposition to the Bison killing, introduced a bill aimed at stopping "hunter harassment."

All the Dead Critters

The US Department of Agriculture will soon release an EIS on its Animal Damage Control program (ADC). Activists need to draw attention to this little-known killing program.

The Animal Damage Control Act of 2 March 1931 granted the USDA the authority to "control" any wild animals considered "injurious" to agriculture, forests, rangelands, and wildlife in the US. In 1939, this responsibility was transferred to the Department of the Interior. In 1985, our government, in its infinite wisdom, saw this placement as a conflict of interest, and transferred ADC back to the USDA. Presently, the program is being administered by the USDA's Animal and Plant Health Inspection Service (APHIS).

The ADC mission is to "provide leadership in the science and practice of wildlife damage control in order to protect America's agricultural, industrial, and natural re-

sources, and to safeguard public health and safety." This mandate resulted in the killing of over 4 million animals, including over 75,000 predators, in 1988. Coyotes and blackbirds (including grackles and starlings) were the most persecuted mammal and bird species. The 1990 budget is $29.4 million, a $3.8 million increase over last year by our kinder and gentler administration. This money, along with some $15 million in state funds, will fund such killing methods as trapping, poisoning, shooting from helicopters and planes, chasing by dogs, and den burning.

According to John Grandy, Vice President of the Humane Society of the US and a member of the Secretary of Agriculture's Advisory Committee on ADC, the rough breakdown of that 1990 budget is $19 million for the Western states (west of the Mississippi River), 3 million for the Eastern states, and 7 million for "research." Grandy said none of the research money goes toward research of "non-lethal" control; rather it is spent re-registering poisons to be used in the field — yet another subsidy for ranchers!

WHAT YOU CAN DO: This May, APHIS will issue a Draft Environmental Impact Statement on the ADC program. A 60 day comment period will follow. To request a copy and to submit comments, write USDA, APHIS ADC O.F.F., Attn: Gary Larson, 6505 Bellcrest Rd, Room 820, Federal Bldg, Hyattsville, MD 20782.

Recent events in northwest Montana have accentuated the death hold that the ADC has upon the wild critters and places across this continent [see wolf article]. In response, wolf advocates here have chosen June 4 as a day to focus attention on ADC. We encourage others to speak out with us on that day. If you'd like to organize or participate in an action in your area, contact the Wolf Action Network at 406-585-9607. Also write your members of Congress (senators, US Senate, Washington, DC 20510; representative, House of Representatives, DC 20515) and ask them to eliminate the 1991 ADC budget,* or at least to reduce the budget while increasing the percentage of the budget that actually goes toward non-lethal control measures.

*Arguably, some control may be needed when protecting Endangered Species.

—Tom Skeele, Wolf Action Network coordinator

Government Kills Another Wolf in MT

It's true: history does repeat itself. Like last fall, a wolf was recently accused of (and may well have been) preying upon a rancher's livestock near Marion, Montana, and like last fall the response was to kill the predator. The US Fish and Wildlife Service (FWS), which is responsible for assisting the recovery of the Gray Wolf in Montana, was called in to remove the "problem" animal. The Department of Agriculture's Animal Damage Control program (ADC) soon became the lead agency in the effort to "dispatch" the predator. ADC's involvement was most likely prompted by two realities: FWS did an atrocious job of trapping and relocating a wolf pack in the same area last fall (3 of the 5 wolves died), and ADC agents are well-trained in killing wildlife (see ADC article).

After a week of efforts to trap the wolf, ADC began using a helicopter. It took four days to shoot the wolf. This is yet another case of measures to stop depredation costing more money than was "lost" by the "problem" wildlife. The continuation of these control programs perpetuates subsidies to ranchers.

Missoula Wolf Action Group (WAG) members offered both agencies assistance in trying to get the wolf to leave the area near the ranch, as an alternative to the standard control methods, but were refused. They tried anyway, and were later blamed for the wolf's death — the logic being that the activists' presence prevented the capturing of the wolf in the traps, the first step toward relocating it. The accusation has since been proven to be a cross between finding a scapegoat and passing the buck. First, the activists found a Coyote, with a broken leg, in one of the traps. Second, the FWS admitted that they had planned to either kill the wolf or send it to Wolf Haven, a wolf sanctuary in Washington. Neither wolf heaven nor Wolf Haven are the Big Outside, and WAG's efforts were ultimately the best alternative available (shy of letting the Endangered predators roam free; and demanding that ranchers either take out insurance against such losses, accept these losses as part of the trade, or get out of the ignoble trade).

WHAT YOU CAN DO: Tell the Fish and Wildlife Service (Interior Dept, 18th & C Sts, DC 20240) and USDA (USDA Director, DC 20090) it is time to stop spending more money than the private businesspersons (e.g., ranchers) actually lose, at the cost of wildlife and healthy ecosystems. Tell them to stop subsidizing welfare ranchers. Remind FWS that they are supposed to be promoting the recovery of the Gray Wolf in the Northern Rockies. Write your Congresspersons and tell them to support the Wolf Recovery and Protection Act proposal that WAN will release in May. In your letters, also address the issues in the ADC article.

Tree Spiking Renounced Behind Redwood Curtain

In a move that has left some EF!ers confused or dismayed, several West Coast Earth First! groups have renounced tree-spiking. At press conferences held in mid April, the groups called upon activists to refrain from spiking trees in northern California and Oregon forests. This whole issue is very controversial ... and we do not intend to cover the inevitable debate in *EF! Journal*. Below we simply reprint Northern California EF!'s press release — so that EF!ers will know what the groups actually said, not just what the rumors are saying — and we urge interested EF!ers to contact the groups and individuals involved for more information. For a compelling letter in opposition to the tree-spiking renunciation, write Colorado EF! contact Michael Robinson. For arguments in support of the renunciation, contact Northcoast EF! groups or Southern Willamette EF! For a copy of the lyrics to "They Sure Don't Make Spikers Like They Used To," write Ned Mudd, Jr., POB 130411, Birmingham, AL 35213.—JD

Northern CA EF! Renounces Tree Spiking

In response to the concerns of loggers and millworkers, Northern California Earth First! organizers are renouncing the tactic of tree spiking in our area. Through the coalitions we have been building with lumber workers, we have learned that the timber corporations care no more for the lives of their employees than they do for the life of the forest. Their routine maiming and killing of millworkers is coldly calculated into the cost of doing business, just as the destruction of whole ecosystems is considered a reasonable by-product of lumber production. These companies would think nothing of send a spiked tree through a mill, and relish the anti-Earth First! publicity that an injury would cause.

Since Earth First! is not a membership organization, it is impossible to speak for all Earth First!ers. But this decision has been widely discussed among Earth First!ers in our area, and the local sentiment is overwhelmingly in favor of renouncing tree spiking. We hope that our influence as organizers will cause any potential tree-spikers to consider using a different method.

We are not speaking for all EF! groups in this pronouncement. Earth First! is decentralized, and each group can set its own policies. A similar statement to this one renouncing tree-spiking is now being made in southern Oregon, but not all EF! groups have reached the broad consensus we have on this issue.

But in our area, the loggers and millworkers are our neighbors, and they should be our allies, not our adversaries. Their livelihood is being destroyed along with the forest. The real conflict is not between us and the timber workers; it is between the timber corporations and our entire community.

We want to give credit for this change in local EF! policy to the rank and file timber workers who have risked their jobs and social relations by coming forward and talking to us. This includes Gene Lawhorn of Roseburg Lumber in Oregon, who defied threats from his union officers to appear publicly with EF! organizer Judi Bari. It also includes the Georgia Pacific, Louisiana Pacific and Pacific Lumber employees who are members of IWW Local #1 in northern California.

Equipment sabotage is a time-honored tradition among industrial workers. It was not invented by EF!, and it is certainly not limited to EF!, even in our area. But the target of monkeywrenching was always intended to be the machinery of destruction, not the workers who operate that machinery for $7/hour. This renunciation of tree spiking is not a retreat, but rather an advance that will allow us to stop fighting the victims and concentrate on the corporations themselves.

—Judi Bari, Ukiah EF!; Darryl Cherney, Southern Humboldt EF!; Mike Roselle, EF! co-founder; Rick & Kathi Cloninger, Laytonville EF!; Larry Evans, Northcoast CA EF!; Greg King, Redwood Action Team; Pam Davis, Sonoma County EF!, Annie Oakleaf, Albion EF!; Anna Marie, IWW Local #1

MUDDD Happens

The radical faction of the environmental movement oozed together in an action-packed three days of rain and mud for the Earth First! Midregion Rendezvous held March 30 thru April Fools Day next to the Shawnee National Forest in southern Illinois. Over 125 mudcore activists gathered in peace to protest the rape of our planet and demand the immediate resignation of the Shawnee NF supervisor, Rodney K. Sallee, and his lackeys.

The MUDDD (Mammoth Unheard of Death Defying Defense) Rendezvous started with an action of 7000 non-recycled Daily Egyptians being returned to a local recycling center in Carbondale and culminated in a mass action of returning boulders and trees to the logging road in the Fairview Timber Sale area from whence they came — forming a massive blockade. Hayduke says, "35 to 40 stump suckers hefted a huge hardwood in one of the five barricades in an effort to give the Freddies a migraine in their rumpial regions!" In- between actions were muddy at best, but workshops included rope technique, radicalizing Earth Day, ecofeminism, etc.

Local support (including the new Shawnee EF!) was fantastic and the MUDDD Media Sluts handled the mainstream press in fine fashion. Special thanks go to all those who sacrificed a bunch of fun to struggle for community spirit!

—Big River Earth First!

WORLD NEWS

Yanomami Tribe in Brazil Faces Extinction

The Yanomami Indians are being wiped out; 1500-2000 Yanomami have died in the last two years, from a population of only 8000-10,000 in the states of Amazonas and Roraima in Brazil, near the border with Venezuela. Proportionately this is equivalent to Britain losing 9 million of its inhabitants! Malnutrition, poisoning from mercury, diseases due to contact with gold prospectors, and destruction of the natural resources are major contributing factors. There are about 45,000 *garimpeiros* (gold prospectors) in that region.

On 20 October 1989, the Brazilian Federal Court ruled in favour of the Yanomami in their effort to secure the 9.4 million hectares of land reserved as Yanomami territory. In early January 1990, the Brazilian Federal Government planned to remove all of the prospectors from the Yanomami territory and an emergency health plan was to be carried out. The project was expected to take 45 days and cost US$2.9 million ... but by January 10, then-President Sarney had ceded to pressures from the prospectors and business community.

On 25 January 1990, Sarney signed a decree to create a 100,000 hectare prospecting reserve in Ucaricaa Santa Rosa. On February 15, he signed two more decrees creating more prospecting reserves, in Catrimani-Couto Magalhaes and in Uraricoeira — both within the legal Yanomami territory.

The Yanomami Indians are the largest group of people in South America still living in relative isolation from non-Indian communities. Yet, garimpeiros in their area outnumber them 5 to 1 and if the prospectors are not removed, the Yanomami may be exterminated.

WHAT YOU CAN DO

1. Write to President Collar de Mello to urge the new administration to immediately remove the prospectors from Yanomami territory, and to secure the rights of the Yanomami according to the ruling of the Federal Brazilian Court: *Fernando Collor de Mello, President of the Republic, Palacio do Planalto, 70.000 Brazilia, Capital D.F. Brazil.

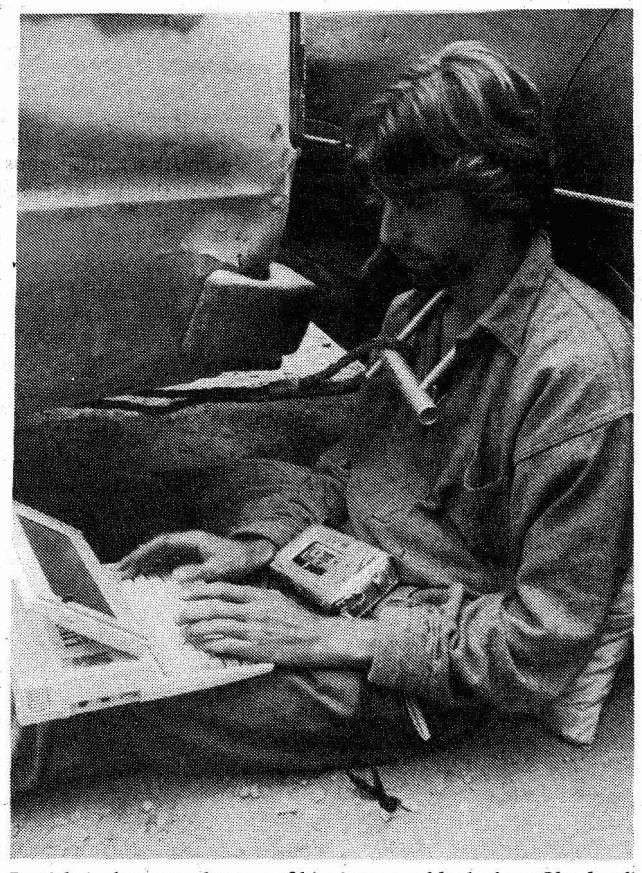
2. Protest to Brazilian embassies on the Government's failure to abide by the Constitution and the Court ruling of October 1989. All correspondence to Brazilian embassies abroad should be sent to: *Federal Deputy Alceni-Guerro, Camara dos Deputados, Praca dos Tres Poderes, 70000 Brasilia DF, Brazil. For the US send to: *Marcilio Marques do Moreira, Embassy of Brazil, 3006 Massachusetts Ave NW, Washington, DC 20008.

3. Urge your Foreign Ministry and other relevant Ministries to express strong concerns about the Yanomami situation.

4. Ask the news media in your country to cover the case.

5. Learn the latest on the Yanomami by contacting: *CCPY (Committee for the Creation of Yanomami Park), Rua Manoel da Nobrega 111, Conjunto 32, 04001 Sao Paulo SP, Brazil; or *NDI (Nucleus for Indigenous Rights), Edificio Jise Severo, sala 303, Setor Comercial Sul, quadra 06, bloco A, 70300 Brasilia DF, Brazil. Please send a copy of your protest letters, or articles on actions taken in your country to: *World Rainforest Movement, 87 Cantonment Road, 10250 Penang, Malaysia.

—Martin Khor, WRM Coordinator



Patrick Anderson makes use of his time on a blockade at Chaelundi, Australia.

Australian Activists Escalate Rainforest Defense

Blockades and court action in March by the North East Forest Alliance (NEFA) have stopped logging operations in Chaelundi State Forest, 70 kilometers southwest of Grafton, New South Wales, Australia. NEFA activists turned their attention to logging in the Chaelundi Forest as part of a campaign to protect Australia's rapidly diminishing old-growth eucalypt forests.

NEFA found that logging operations in Chaelundi Forest were illegal because the NSW Forestry Commission had not undertaken an Environmental Impact Study (EIS) on the 8000 hectares of old- growth forest. NSW legislation requires that an EIS be completed before logging permits are approved,

Twenty activists began blockading Broadmeadows Road on Thursday March 8 to stop contractors entering the logging comps. Contractors and police did not attempt to break the blockade. Federal Environment Minister, Senator Graham Richardson was due to visit Grafton the following day and, presumably, the Forestry Commission did not want to attract his attention.

On Friday the Forestry Commissioner declared Chaelundi Forest closed to the public. Police notified the blockaders that any persons found in the forest on Monday would be arrested.

By Monday 50 activists assembled on Broadmeadows Road, which separates Chaelundi State Forest from Guyfawkes National Park. As police and contractors began dismantling the blockade of cars, trucks, vans, and log piles, ten "Earth Defender" activists placed a Forestry Commission Officer under citizens arrest for illegal desecration of old-growth forest.

Logging operations were delayed for half the day as police tried to remove two activists who had fastened themselves to vehicles with kryptonite locks. Ten activists were arrested for illegal entry.

On Tuesday morning two women stopped a logging truck and chained themselves underneath it. The two women and a freelance camera operator were arrested.

No further logging or clearing took place on Tuesday as contractors raced to

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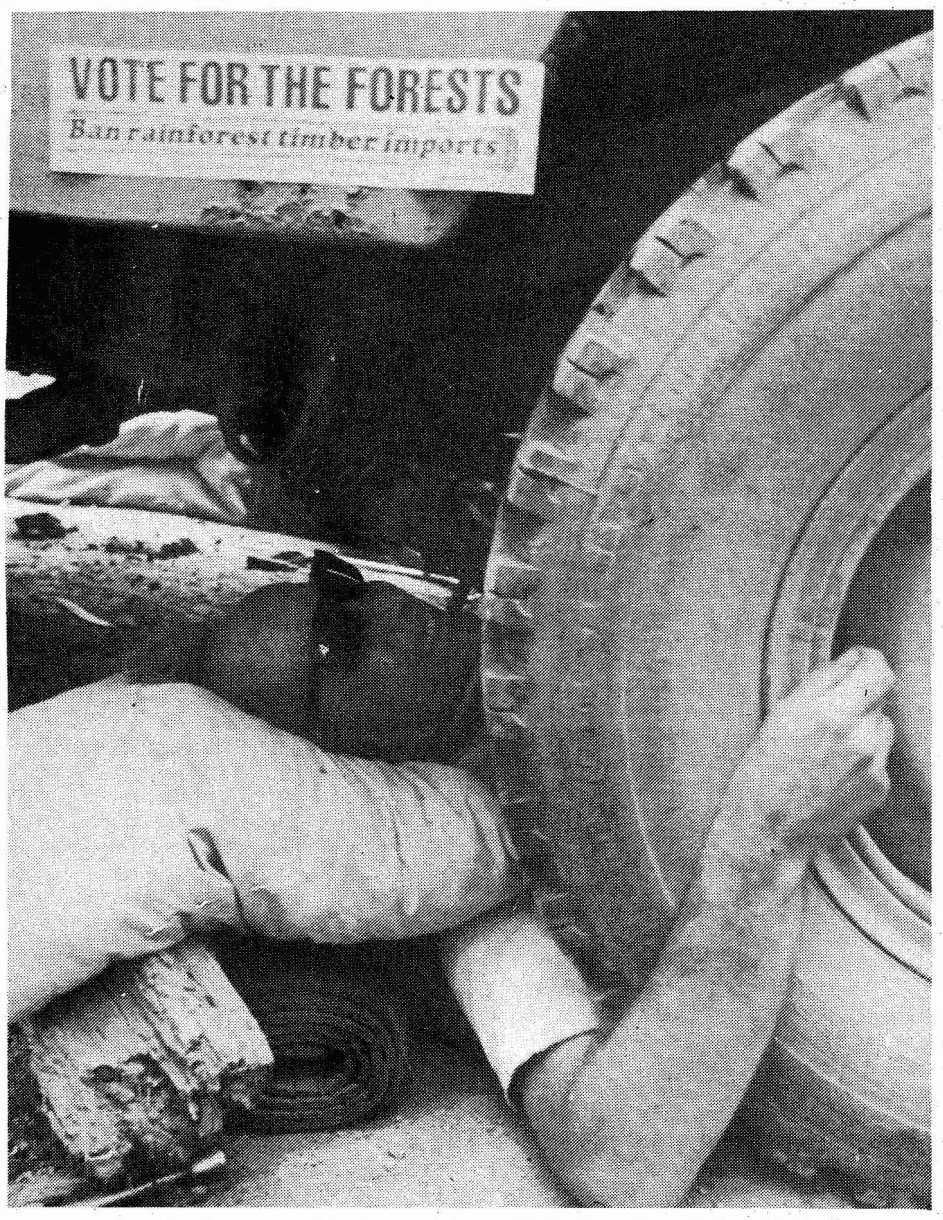

Australian organizer John Seed forms a living link in a blockade against rainforest logging.

WORLD NEWS . . .

continued from page 13

truck the felled trees out of the forest before all operations were suspended by a court injunction. NEFA representatives in Sydney had been granted a hearing in the Land and Environment Court. By 5 PM the injunction to prevent further operations in Chaelundi Forest had been granted.

NEFA activists were pleased that logging in Chaelundi Forest had been stopped in just four days of direct actions. Similar blockades have continued in the South East forests for over a year without success.

The injunction was the fourth of its kind to be granted by the Land and Environment Court. The NSW Forestry Commission has continued to ignore legislation in place to protect Australia's forests. NEFA activists are wondering how many more times they must carry out similar actions before the NSW Forestry Commission will act responsibly in its role as manager of our forests.

That the Forestry Commission has been corrupted by the timber industry can no longer be doubted. Our courts have proven to be of some use in checking the ruthlessness of these interests, but the courts can only deal with those cases put before them; and forest activists' legal resources are limited. Government commitment to preserve our old-growth forests is urgently needed.

Media exposure for forest actions is the most assured method of attaining such government commitment. As the electorate becomes informed about threats to our forests, pressure increases for the government to protect them.

While media coverage of some forest actions has been extensive, for example East Gippsland, coverage is generally diminished by the inaccessibility of blockade sites. Chaelundi State Forest is 70 km and a two hour dusty drive from Grafton. The nearest TV link is a further two hours in Coffs Harbour. The media coverage of the Chaelundi actions was thus limited to the footage taken by our own camera people and ferried on to Coffs Harbour.

As long as TV stations continue to buy activist-supplied footage of protests, activists are well placed to influence public perceptions of the issues and the movement. If activists begin to focus more attention on this potential, one approach may be to stage actions not just as orchestrated media events but as fully activist-directed video clips sold to stations after editing.

The ethics of this are potential cauldrons of dissent. There is little doubt, however, that the creative revolutionary spirit of cameraperson/editors like Barry Brown and Dean Jeffries will ensure that video art becomes one of the movement's potent new weapons. Dean Jeffries has sold footage from the East Gippsland and South East Forests campaigns and the Melbourne Rainforest Action Group's timbership actions.

The possibilities presented by actions such as the Chaelundi blockade for influencing public perceptions through video art beg considerable attention. We must support activists like Barry and Dean. We should consider what images of activist groups it would be useful to present and what innovative approaches can be taken to harness the power of video art.

Nowadays, video clips are the stuff that people's heads are made of. Peace protests, forest blockades, and dockside timber actions could be volatile additions.

—Giselle Thomas

Melbourne RAG Stops Another

At 5:45am on 9 April 1990 the Melbourne Rainforest Action Group (RAG) blockaded the *Fittonia* as it traveled up the Yarra River into Melbourne. It was the eleventh RAG blockade of a rainforest timber ship in the past year. Of the more than 100 activists at the action, a record 55 went into the water.

Our intention was to place a five meter diameter inflatable Earth in the path of the ship to symbolise the lumbering juggernaut of capitalist civilisation on a collision course with planet Earth.

We met at the edge of the river at 4am. As the ship approached, we pushed the Earth into the river. The police had again decided not to interfere with our action.

The ship hit our Earth head on; the globe rode slowly up the bow of the vessel before falling down to the side. We then rescued the Earth and carried it in a procession to Timbersales — Melbourne's largest timber importer — and held a minute's silence to mourn the destruction of the rainforests.

Despite being in the dark, the river action looked powerful on television.

The nonviolent action campaign by Melbourne RAG to halt Australia's imports of Southeast Asian rainforest timber (80% of it from Sarawak in Malaysia) continues to attract considerable public support. Successes so far include the ban by the Building Workers' Industrial Union on the use of imported rainforest timbers on all construction sites in Victoria, the decision by the three largest plywood manufacturers in this state not to use rainforest timbers in the manufacture of plywood, and growing consumer boycotts of rainforest timbers.

—John Seed, Rainforest Info. Centre

Seal Hunt Alert

Former Trudeau government Justice Minister Jean Chretien has promised to revive the Canadian commercial seal hunt if he is elected as the new leader of the Liberal Party of Canada. Liberal Member of Parliament Sheila Copps, who is also running for the Liberal Party leadership, is publicly flaunting her new Harp Seal briefcase. Her position on the seal hunt is also clear.

In March 1990 more than 70,000 Harp Seals will be slain on the ice of eastern Canada. This is the so-called landsmen's hunt. Although there is no commercial market for the skins, the seals are killed for sport and local use. A commercial hunt would raise the kill to over 200,000 seals per year. Canada is looking to Japan as a possible market for commercially slaughtered Harp and Hood Seal pups.

—Sea Shepherd Conservation Society

A Navy for the Dolphins

We still need funds to purchase the faster ship to return to the Eastern Tropical Pacific and confront the tuna boats that are drowning dolphins. Although the "good old" Sea Shepherd II is quite capable for the drift-net expedition to the North Pacific this June, we must have a faster ship if we are to return to the dolphins' defense. A faster ship will allow us to take on other projects as well. Please send donations to Sea Shepherd, Box 7000-S, Redondo Beach, CA 90277.

French Environmentalists Make Headway

Opponents of the damming of the Loire River and its tributaries have won a semi-victory. In February, one year after SOS Loire Vivante began an occupation of the site for the Serre de la Fare dam on the upper Loire, the French government announced a modification of its plans. Only the two smaller of the proposed dams, Naussac II and Veurdre on the Allier, will certainly be constructed and one of these in an open form that prevents the build-up of a lake behind the dam. Work on two larger dams, Chambonchard and Serre de la Fare, has been postponed. The government will make a decision on Serre de la Fare around October, after independent environmentalists have completed an impact study.

The influential French daily *Le Monde*, noted, "This is the first time that a public project [in France], negotiated long ago with elected officials of a region, has been revised to such an extent for essentially ecological reasons."

Jacqueline Arnould of SOS Loire Vivante writes: "The issue is far from certain. We'll have to occupy the site for another seven months which is not a 'small affair,' but we'll manage!" *Reinforcements from abroad are welcome. Contact: SOS Loire Vivante, 8 rue Crozatier, 43000 Le Puy-en-Velay, France (71-05-57-88).*

Also in February, the French Prime Minister announced a one- year suspension of all work on the four sites under study for high-level radioactive waste disposal. He announced the suspension, he said, to permit a return to calm that would allow dialogue on the waste question.

A return to calm was in order. The study sites have been the scene of virtual warfare between local residents and the national forces of order, since ANDRA, the nuclear waste agency, decided in December to take over the study areas with the assistance of riot police.

The opposition to ANDRA has often had a humorous touch. In May 1989 at Neuvy-Bouin, for instance, opponents of the waste site tarred and feathered the headquarters of ANDRA and sealed all openings with concrete. At Segre in January 1990, 250 demonstrators forced their way on board a train to Paris, in order, they said, to go to talk to the Interior Minister.

Nevertheless, in recent months confrontations have been so violent that the Segre study site "had to be" patrolled night and day by three squadrons of riot police as well as protected by a triple barricade. Prime Minister Rocard's communique in February announced the withdrawal of ANDRA and of the police.

ANDRA wants to bury waste deep underground at one of the four sites under study. Opponents are united in demanding above- ground storage at the reactors that produce the waste.

—Mary Davis

AUSTRALIA-NEW ZEALAND EF! RAINFOREST ROADSHOW

Dancing Down Under (the Ozone Hole)

by Dana Lyons

They sprayed us with insecticides as our plane came into Sydney. "Don't worry, these insecticides have been thoroughly tested and are guaranteed 100% safe for people." Where had I heard those words before? Reassured, I pulled my bandana over my face.

After 20 hours of plane and 15 hours of train riding I arrived in Byron Bay, about half way up Australia's east coast. Mickey Dulas, of California's infamous Redwood Action Team (RAT), met me at the train station. Dazed, lugging my guitar, my pack, and 100 *Earth First!* journals, it was wonderful to receive a big hug so far away from home. Mickey helped me carry my gear to the rainforest van. Once white, the van was now painted over in rainforest plants and animals. "Rainforest, the womb of life" was painted on its side; "Boycott rainforest timbers" on the back; and a planet Earth with the words "Earth First!" on the front.

Mickey drove us to the home of Gum (one of Aussie's leading tree climbing bush activists), where I met the rest of the roadshow team. Penny, a brilliant artist and singer, was finishing banners and placards to take on the road. Charlie, singer, guitar player, and one of the founders of the now 1000 strong Melbourne Rainforest Action Group, was busy compiling the first issue of *Australia Earth First!*. Gum was working on the two vans and the 65 Holden (Chevy, Australia) that would make up our caravan. In Gum's recycled wood house, I found John Seed, sitting on the floor in a purple surong typing on his laptop computer with a phone pressed to his ear. It would become a familiar scene.

When John got off the phone he gave me a big hug. "You look like you should be as close to the Earth as possible after all that traveling. Why don't you take the rainforest van and go to the beach. It's the most beautiful beach in Australia, ten minutes from here."

"Sounds good."

"Just remember to stay to the left, especially on the windy dirt road through the rainforest ... a lot of head on collisions up there."

"Yeah, sure, stay to the left."

I climbed in the van and headed out. After a 40 hour journey I was exhausted and it didn't take too many cars coming at me in the right lane for my exhaustion to translate into paranoia about remembering which lane to stay in.

When I made it to the beach path I was thankful to have survived my first major initiation to the land down under. My second initiation was not far off.

I stepped out of the van and immediately felt an intense pain in my foot. I suddenly realized that it was my first time in the Australian Rainforest and I had no idea if there was anything dangerous out there. I looked down and saw some unfamiliar plants and a few half inch long red and black ants. The pain engulfed my foot. Sensing that I might only have minutes to live, I tried to remain calm and went for help. I staggered up a dirt driveway and heard a child playing near a camping trailer. His mother was inside.

"Excuse me, I wonder if you could help me. I seem to have been bitten by something and, uh, do you know if I have long to live?

"Was it an ant?"

"Yes, yes, that's what it was." I felt relieved now that at least I would know what had dealt me the death blow.

"Yeah, in about 15 minutes you'll be fine. You just met a jumping ant. Try not to step on anymore mate." I walked to the beach. It was the most beautiful beach I had ever seen.

The theme of our 29-show Australia-New Zealand Earth First! Rainforest Roadshow was "full-on." Quoting Canadian ecologist David Suzuki every night, "At present rates, less than ten years remain before the damage to the earth's life support systems becomes irreparable," we preached that everyone needs to do everything they can, now, to save the Earth. Simplifying your life is a start, but if you're not working to save the Earth then you're probably part of the problem; so figure out how to leave Earth destroying jobs, sell extraneous material possessions and get to work.

The first song of the evening was usually the "East Gippsland Blues" by Charlie Daniel, the last words of which are "I'm gonna grab my spikes and hammer and head for the Southeast!" That set the tone for the

show. (We sold out of *Ecodefense* by the eighth show.) Penny continued with a beautiful song about the Penan Tribe in Borneo and showed slides of that hunter gatherer tribe fighting to save their rainforest. We passed the hat every night and raised $2000 for the Penan and $4500 for Australia forest actions.

Mickey Dulas gave an inspiring talk and slide show about actions to save the Coast Redwoods. People were shocked to hear that America is still cutting its redwoods. Her show had many different types of actions, some of which we borrowed from the Australians originally —like burying people in the road. Mickey usually ended her presentation by singing "Earth First! Maid" by Darryl Cherney. She spoke about the importance of strong women in the Earth First! movement and was surrounded by women at the end of every show. Mickey's slide show was inspiring to all, but I was particularly moved by how she touched many women. The lesson I took is that it is crucial to have both women and men presenters on a roadshow, so that we may more effectively inspire activists and leaders of both sexes to work for the Earth.

Gum, a man who has earned his name (from gum tree or eucalypt, Australia's most prevalent tree species) has spent weeks sitting in rainforest trees to keep them from being cut, and most of his life living in, learning from and defending the Australian bush. It is a rare moment, walking in the bush with Gum, when doesn't know what a certain subspecies of plant or bird is. Knowledge of the bush is critical if you're going to roam through it. Poisonous snakes, stinging trees, and grabbing pricker vines are scattered throughout the rainforest. Ask the police who chased local bush activists into the thickets.

The part of Gum's rave that most struck me was his talk about cats. Australia has no native cats, nor native mammal predators of any type other than bats [*and possibly the Tasmanian Wolf, though this is thought to be extinct—ed.*]. While Gum admires cats as being phenomenal hunters and some of the strongest, fastest, and most agile creatures on Earth, he hates what they do to the Australian bush. Small kangaroos, wallabies, bush rats, and many birds are defenseless against a feral house cat. Species after species of Australian songbird has gone extinct to introduced cats and foxes. When Gum finds a cat in the bush, he attempts to catch it and kill it. This was difficult for me, a cat lover, to accept. Still the evidence is overwhelmingly clear. Exotic predators like cats do not belong in Australia or New Zealand. If native species are to survive in Australia, cats and other introduced predators must be removed. From listening to Gum talk about feral cats in Australia, I realize I know little about the impact of house cats, feral or not in America. I guess it's time to do a little research and to at least put a bell on our cats' collars. [Natural History *recently ran a report on the effects of predation by domestic cats in England. Researchers found that cats there do eat millions of small animals each year. Fortunately, most of these were common species.—ed.*]

Australia's Earth movement is "kick-ass" and getting stronger. Lismore, located mid way up the East Coast of Australia, is home to the Rainforest Information Centre (RIC). John Seed and other RIC founders purchased three homes on Lismore's floodplain (one or two ten foot floods a year) and hence got the land cheap. Two of the homes house rainforest activists and the third is the Rainforest Information Centre. Aside from being raised up on 15 foot stilts, the RIC office looks as any eco-action center should look — literature piled all over the place, calendars, computers, desks, organic carrots, avocados and vegemite sandwiches scattered about. The Centre in Lismore is the heart of what is perhaps the largest grassroots rainforest movement in existence. As a product of John's ongoing roadshow, there are Rainforest Action Groups (RAGs) all over the globe. RAGs have generated countless letters to governments allowing the destruction of rainforest. Of the RAGs who use direct action and theater to save the rainforest, none surpasses the thousand strong Melbourne Rainforest Action Group.

Melbourne is a big sprawling industrial city. And everyone I met from Melbourne was damned proud of it. The city had a spirit that reminded me of Philadelphia: "Yeah it's dirty, but it's the best."

And Melbourne has reason to be proud. Melbourne RAG averages a major action every two weeks ranging from surfboard blockades of cargo ships filled with rainforest timber to RAG members actually reloading the timber back onto the ships. RAG members have worked with the Melbourne construction union and placed a union ban on using any rainforest timber in construction projects in Melbourne. The Melbourne longshoremen's union has been conducting work slowdowns on ships carrying rainforest timber, forcing the ships to spend costly days waiting to be unloaded. The RAG has earned

the respect of local police through conducting surfboard blockades in subfreezing temperatures. In the past year the Melbourne Police Department began notifying MRAG when rainforest timber ships arrive! The icing on the cake was when the police purchased 500 "Police for Rainforest" bumperstickers.

One of the great threats to Australian native bush is the woodchipping of eucalypt forests for cardboard and paper products. Similar to many governments around the world, Australia is subsidizing the cutting of its own forest and selling the chips to Japan for practically nothing while a world glut of recyclable paper piles higher and higher. Fortunately Australians are fighting back.

In the Southeast Forest of New South Wales, Australians have operated a bush activist base camp for over a year. A 20' by 10' wooden structure with a desk and two radios and a large community kitchen beneath a tarp form the center of the community. In the surrounding eucalypt forest a few dozen tents serve as homes. People from all over Australia come to the camp to take part in protests and civil disobedience, or just to see the forest and the devastation for themselves. Although some base camp organizers are frustrated that the logging continues even after 1000 arrests, they will no doubt fight until the last chipping operation is shut down.

*****

New Zealand, or *Aotearoa*, as the Maori People (original New Zealand human inhabitants) call it, is a horrifying example of an isolated land overrun by exotic species. Before the Maori People arrived about 1000 years ago, the only native mammal species in New Zealand were two small bats. Both islands, North and South, were covered in forests, the northern island with giant Kauri trees (the thickest trees on Earth, redwoods being the tallest). Twelve foot tall Moas (huge Ostrich-like birds) roamed the countryside. Huge trees with tiny leaves and tough woody branches, perhaps as a survival mechanism against the leaf eating Moas, were everywhere.

Now the forests have been reduced to 5% of their original coverage, and are being eaten on the ground by feral deer and goats, and in the canopy by Australian opossums; and are being chipped by humans to be made into cardboard in Japan. New Zealand's trees have soft bark which is vulnerable to the introduced species. The cleared forests are cluttered with range lice (sheep), and in large sections of the North Island "slips" or huge sections of topsoil are sliding off the hills, leaving the ground a wasteland unfit even for sheep. In the worst areas the once subtropical and temperate rainforests are virtual deserts. Pine plantations (of exotics from North America) are everywhere; the Moa is extinct.

My first week in New Zealand was sad. The climate is very similar to that of my home in the Pacific Northwest of the United States. Watching the battered sheep-ridden eroding hills where giant forests used to stand painted a sobering picture for what awaits our beautiful Cascade and Olympic Mountains in a generation of two.

Our New Zealand team included Carl Webb and Brenda Crosby, kiwis; John Seed an Aussie; and Syndee Brinkman, Heart Phoenix, Mickey Dulas, and myself, yanks. While the Aussie sections of the tour had been largely set up by Rainforest Action Groups and back to land hippie networks, the New Zealand Tour was set up by an environmental group called PIRM. Our schedule included a New Year's Eve Christian Rock Concert, a New Year's Day New Zealand 150th birthday celebration, a show for the New Zealand Quakers, and one for the new agers at a "Heart of Politics" gathering.

I was concerned. Our rusty Holden was losing gear box fluid and I questioned whether the car was fast enough to get us out of the Christian Rock Concert after John sang his nightly version of Darryl Cherney's "You Can't Clearcut Your Way to Heaven."

The Christian Concert took place on a farm. Tents and buses and trailers were parked all around by people camping out for the festival. As we pulled in, a band on stage was playing U-2 "With or Without You." I started to feel at home.

Heart got up and started our show with a beautiful introduction about God, Jesus, and how as God's children we need to work to protect the Earth for all creatures. Heart's family lived for years with a Christian missionary group which lived simply and dedicated their lives to community service. She was able to reach out to the audience relating her missionary work to her current work for the planet.

Then Heart introduced John Seed, who started out with his very moving song "Extinction." After playing "Lay Down Your Whopper Baby" by Bill Oliver, John started to introduce Darryl "after hours" Cherney's "You Can't Clearcut Your Way to Heaven." "Oh No." I thought. "Here we go. At least he's not playing 'Spike a Tree for Jesus' ... yet." John's unpredictability always made for an exciting show, but tonight I scanned the tent for the nearest exit. Picturing an onslaught of offended people rushing John on stage, I tried to plan how I should react. Should I move to save John first or my guitar which he was playing?

Fortunately, the crowd loved John, and both my guitar and my friendship with John remain intact. John was a sensation. People were laughing at "You Can't Clearcut Your Way to Heaven." They agreed with it.

After the show John was interviewed by a Christian Rock magazine. The editors believe that even though Jesus is coming back to save the world, we need to care for the Earth so Jesus has an Earth to come back to. The editors agreed with John that other species need help to survive and suggested that God has put us on the planet to serve as stewards of the planet, not to destroy it.

I had read an article in *Utne Reader* on the Christian environmental movement and here I began to understand the roots of such a movement and to get a sense of the strength such a movement could muster. The Judeo-Christian concept of placing humans above all else on Earth is blamed by many as being a root of much environmental destruction. Yet here in the hills of New Zealand were Christians committed to working to save the planet.

As we drove away John was elated. "We should do a Christian Rock for the Rainforest Tour! With Heart speaking it will be incredible! Praise the Earth! Hallelujah!"

Perhaps the most frightening observation for me on the entire tour was the intensity of the sun in both New Zealand and Australia. When the ozone hole is over this region you can literally feel the sun burning you. In Australia, I saw an "ozone update" on the nightly weather report. The report stated that we had up to 17 minutes to spend in the sun before we would burn. At one point during our stay in Australia, the weather bureau recommended that people stay out of the sun for the next two weeks. Eager to see if my discomfort with the sun was due to being from the continuously cloudy Pacific Northwest, I asked people I met if they had noticed a change in the sun's intensity. Everyone I spoke with, city people, back to the landers, business people on airplanes, surfers, etc., said that in the last four years the sun has become much more intense, especially when the ozone hole is overhead. Five people with darker skin, who had never burned before, said they had received serious sunburns in the last four years.

So while the Australia-New Zealand roadshow offered much inspiration, the intensity of the sun through the weakening ozone layer scared me. I return home to North America sobered by the reality of the ozone hole in the southern hemisphere, but armed with ideas of union boycotts, forest base camps, surfboard blockades, and many other creative techniques developed by Australian and New Zealand activists in their fight for the planet. Ten new Rainforest Action Groups came out of the tour, and *Ecodefense* is scattered along the East Coast of Australia. The world is a safer place and the roadshow dances on.

Blossoming of the Ecological Movement in Czechoslovakia

Some months ago I wrote a paper on the problems of the Czechoslovak ecological movement under the totalitarian regime. The paper was not published because the changes in our country were so quick and dramatic that it was outdated by the time *EF! Journal* received it. Our revolution — the Prague Fall of 1989 — needed only a few days to break the communist power.

Of course, to remove a cause is not to remove all consequences. We shall need years for real improvement of our country in all fields. Czechoslovakia has the most damaged environment in Europe. The most polluted area in Europe is on boundary of

Ecology was a springboard for democracy in our country.

Czechoslovakia, East Germany and Poland. Czechoslovakia has an economy of heavy industry (metallurgy, machine industries) and state or cooperative agriculture. Some of our factories are equipped with machines 50 years old.

Czechoslovakia produces 3-3.5 million tonnes a year of sulphur dioxide, as well as fly-ash, nitrogen oxides, etc. We produce 1000 dollars GNP with a by-product of 40 kg SO2. Great Britain has by-product 6 kg and Japan has only 1 kg per $1000 dollars GNP. Acid rains pollute soil, waters and destroy forests. Already at least 35% of our forests are damaged. Also, contamination of the environment by heavy metals, PCBs and other toxins is extensive.

These environmental pollutants are first-rate chemical weapons. Cancers are rapidly increasing. The average life span is low compared to Western countries — 67 years males and 74 years females. In some areas, 10% of children have inborn disorders. The mortality of all age groups is increasing most rapidly in industrial centres.

All these are the results of 41 years of communist dictatorship. The industrial optimism that emanates from Marx's writings was anachronistic already in 1866 when the arrival of black snow was recorded in Scotland. And Marx's philosophy was degraded to the Stalinistic fascist ideology.

In the 1960s Czechoslovakia had begun to awaken from Stalinistic megalomania dreams of reorganizing nature as well as humanity, though industrial optimism still prevailed. Due to the Iron Curtain no one knew of modern ecological trends here, but several groups of scientists and volunteers arose to inquire into the environmental situation.

Within the liberal cultural atmosphere of the "Prague Spring of 1968," non-communist organizations and groups drew more attention to nature and alternative lifestyles. Unfortunately, on 21 August 1968, Russian tanks put an end to this trend.

During so-called "normalization" in the early 70s, all expressions of independent and progressive thinking were suppressed. A communist leadership reintroduced a neo-Stalinistic regime. More than half a million people were forced to leave their professions. Most of them — scientists, artists, teachers ... the intellectual top of the nation — were jailed or went into outer or inner exile.

Famous Czechoslovakia sociologist Jirina Siklova described our society after "normalizaton" by means of the concept "grey zone." To one side of the grey zone were the communist party leaders, the power elite. To the other side were dissidents — courageous people in positions of active protest. The latter knew (including Siklova) persecution and imprisonment. Many were forced to

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Czechoslovakia . . .

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emigrate. Both these groups were small — only a few thousand people. Between these extreme poles was the grey zone; the reticent majority. The opinions of the grey zone were near the opposition, but their behaviour — due to fear — supported the elite.

Gradually, however, there were more and more protests against a lifeless environment. The grey zone also contained green. When the fear ended — mostly overcome by anger in connection with the police massacre of 17 November 1989 — the grey zone quickly changed into purposeful crowds struggling for freedom.

Ecology was a springboard for democracy in our country.

Despite the dark atmosphere of the 1970s, the Nature and Countryside Conservation Union "TIS" was established. (*Tis* means yew, *Taxus baccata*, in Czech.) Its activities included tree planting and woods conservation. TIS did not launch public campaigns but organized unostentatious activities to restore natural areas. Although TIS never had any political ambitions, the very existence of a relatively independent organization with a great number of members became a threat for the regime installed by the Russian army in 1968. Therefore TIS was violently broken up.

An official (i.e., officially superintended) union of nature conservationists was established instead. But during ten years of work the union has gradually changed into a relatively independent and active organization, which had some success in conserving small country areas and national parks.

Many people, however, did not believe in any official organization. Therefore the situation in our ecological movement was inconsistent. On one side was this union, and on the other side a great number of individuals working for freedom and a better future. The fight for an ecological approach to nature has been inseparable from the fight for a freer and more democratic society. Due to the impossibility of establishing an effective independent organization within a totalitarian state, there was a loose net of active individuals and small groups rather than a homogeneous movement.

The Trojan horse of environmentalism in Czechoslovakia was the education of children. Despite Czech scouting having been broken up twice — after 1948 and after 1968 — its ideas were still live. They could not be expressed directly, therefore they were hidden in general environmentalism. Even one communist children's organization gradually educated protectors of nature: The later the generation, the more radical its attitudes toward the communist regime.

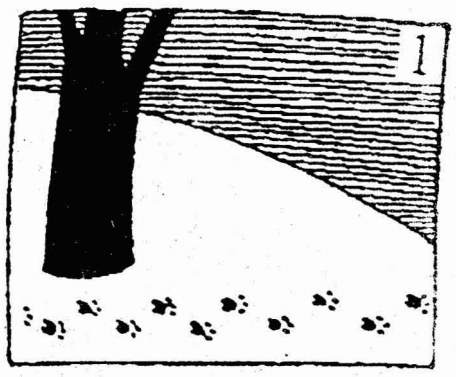
Up to the 17 November 1989 massacre, our police still were able to punish leaders of independent civic organizations; but they could not punish all members of them. Moreover, in the ecological movement the line between "official" and "independent" started to blur a few years ago.

The situation now is far different. A ministry of environment has started analyzing the state of the environment. A green party has begun work. A recent public inquiry gave a good outlook for this party: 10% of the people want to vote for the greens in the first free elections in June 1990.

However, a greater share of potential voters supports only the "Civic forum." The Civic forum is not a political party but a civic movement that includes a wide stream of opinions. The present political climate is shaped largely by what we can term "negative consensus." Our people do not know what they want but they do know what they do not want — a totalitarian regime. They depict the future with such abstract words as democracy, freedom, plurality.

With respect to this negative consensus, the ecological movement can draw many strata of people. But as soon as a green party demands self-sacrifice from others or pushes any limits on consumption, sympathy for green politics will decline. However, I expect very fair success for the green movement in future public life.

The main stream of ecological thinking here can be characterized as "technical." It is interested in technical solutions to contemporary problems: cleaning equipment, wasteless technologies and so on. Less attention is paid to values. Yet technical solutions can be successful only if accompanied by changes of lifestyle and inner values. It remains to be seen whether post-materialist values can obtain extensive support in a country that did not pass through a period of materialist consumption. Our previous governments tried to route our society toward consumption according to the slogan "a saturated citizen does not protest," but economic inability prevented this. We passed through an era of partial consumption — e.g., we had cheap food but an average worker could hardly afford a car or modern satellite TV.



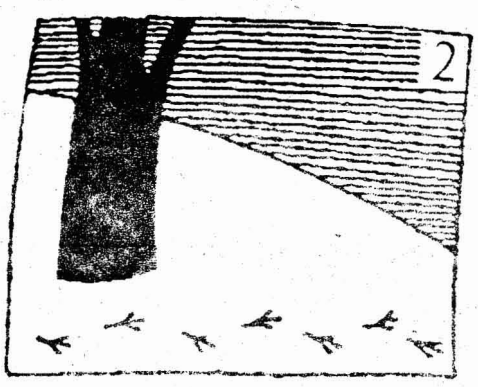
Our environment has been influenced by human culture for many thousands of years, and essentially no wilderness remains. So, though the stream of ecological thinking *ought* to include all trends, we do not have very radical environmental organizations.

We recently prepared our first number of a new newspaper — "Greens." For this I wrote information about Earth First! to strengthen radical trends here.

Excepting the green party, all political parties are preparing their new programs for the free elections. Any of these programs will probably deal with ecological problems in Czechoslovakia.

Besides the green party there are many non-political ecological organizations, e.g., The Friends of Natural Sustenance and the Vegetarian's Club. Some of them are not new but worked underground previously. A loose association of different groups called the Green Circle helps integrate the activities of all ecological organizations as well as of some independent specialists.

Unfortunately, the ecological movement here faces a great danger. Any economy has inertia. The first really visible results of contemporary economic changes we shall see only after long years. And the economy is the most relevant component in the future relation of society to nature. Impatient people may relax their activity after a short time if they see no tangible results. The totalitarian regime was removed in a few days, but the results of its devastation will long remain.

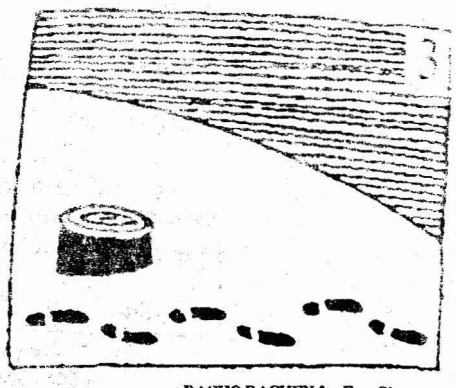


We are short of finances. Our currency is not convertible. This is why our economy fails to get updated technologies, ecological devices, and information. Scientists, including ecologists, lack good books, specialists' works, journals, and computers. We do not expect any one-way material help; but obviously our first new relations among different countries will not be very profitable for advanced ones. I believe, though, that human forces are as strong a factor of development as technical equipment. The totalitarian state encouraged a lack of interests in all fields — only "Orwellian," indifferent people are easily controlled. Therefore our great task is to help to rouse civic activity in many fields of public life including environmental conservation.

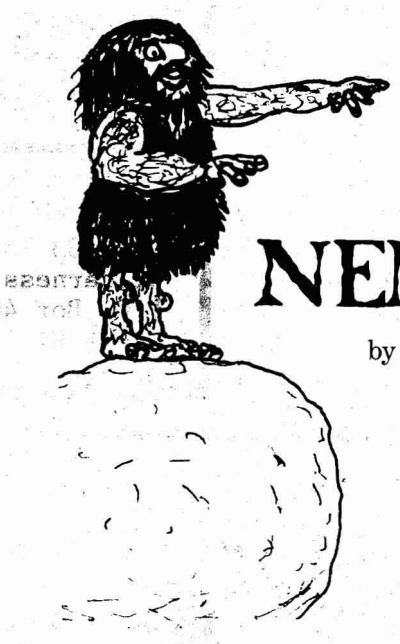
John Davis wrote in *Earth First! Journal* (12/89) that our "reforms under way are anthropocentric and probably superficial ..." But we stand close to the edge of an abyss. Our revolution changes the deepest bases of our life. In Central Europe society and nature will live together or will not live at all because the ecological crisis is very extensive and we play on a small playing field. "Do or die" can be a slogan for us.

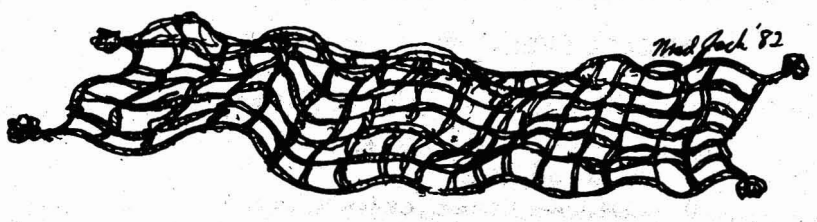
Several months ago I wrote "I believe that someday we will shake hands over the rusty ruins of the Iron Curtain and we shall fight together for the preservation of our planet." The speed of changes in our country is surprising even for those of us trying to help them. With regard to the lines above I can write only a single sentence: "Welcome, friends!"

—Jaroslav Bulicek, Ceskobrodska 32, 190 00 Prague 9 Czechoslovakia; February 1990



RACHO RACHEV for Eco-Glasnost





NEMESIS NEWS NET

by Australopithecus

The height of mercantile irresponsibility has been reached by Hammacher Schlemmer (618 N Michigan Ave, Chicago, IL) in their latest catalog. They offer yuppies a "hands-free snowball maker" for 19.95 in red plastic, electric car door defrosters, and portable skating rinks for children — to get them off to a good start! They can be reached 24 hours a day at 1-800-543-3366.

—Bob Mueller, Virginia EF!

Australopithecine note: The following news items are by El Viejo, a taciturn foreign language teacher ensconced in a small college in Kentucky.

Zombie Obliterates Oryxes

Officials of the Detroit Zoo recently permitted the execution of four Oryxes, members of an Endangered Species of African antelope. The explanation given for this uncharitable act was that the animals in question had been deemed "surplus," i.e., unfit for the species gene pool, by "species survival plan" (SSP) scientists who oversee the 400 individuals who are, or were, captive in North America. When such a determination is made, it is up to zoo directors to decide the fate of the animals. Since other zoos apparently had no space for them, it was considered more humane to shoot them than to sell them to animal dealers who might then put them on the block at auctions or resell them to exotic game ranchers. The sacrifice occurred in secret to protect the "dignity" of the animals, and perhaps also the hide of the butchers. (*Detroit Free Press*, 1-26-90)

Price Placed on Heads of Simians

One group of residents (humans) of Tatsuyama, a Japanese village, complains that another group of residents (monkeys) have been, for several years, destroying crops and entering houses in search of food. Thus, the town fathers [humans] have promised a reward of $700 for each ape brought in, "dead or alive," as they say in the movies. It seems that these anthropoid cousins of ours are unprotected in that area, and that it is legal in Japan to kill birds or animals judged to be a nuisance to the public.

Rancher Crushed by Cow

Near Spokane, Washington, a rancher was crushed recently by a 1500 lb. cow when he attempted to vaccinate the latter's calf. Friends say he was well aware of the dangers of approaching the young, even of domesticated animals.

Rodent Wrecks Copier

Monkeywrenchers, eat your hearts out! A one-foot long rat, perhaps feeling particularly at home in this locale, took up lodging in a $93,000 Xerox copier in the offices of the House Legislative Counsel in D.C. When the damned thing jammed, the repairman discerned, not paper, but shreds of this and that constituting a true rat's nest, bits of food ... and an unwrapped Hostess Twinkie. It seems incredible that bureaucrats who produce so much of worth, might consume (or might have consumed) junk. Replacement cost? $107,000! Billee? Jack Kemp, no doubt.

Not a Very Lucky Strike

A fire recently did $2500 worth of damage to the porch of a house in Pennsylvania. Arson is suspected, because a bird carrying a lit cigarette was seen alighting on said edifice. The origin and brand of the butt, and the present whereabouts of the winged Prometheus, are unknown, but some speculate that the weed was targeted at a particular social group. (Lewisburg, PA *Daily Item*, 8-25-89)

Quackers Unnerve Aged Citizens' Kommunity

Some 50 years ago, Muscovy Ducks were imported into Florida. Prolific reproducers, they now compose a hefty segment of the population of certain locales. These mean-looking and ill-humored fowl are now harassing residents of a retirement community, chasing and occasionally pecking them, creating consternation and fear. It is a classic case of the antagonism that arises between immigrant groups. (*Daily Item*, 12-16-89)

Hoosac Hooked, or The Incompleat Angler

Desirous of exhibiting his prowess, no doubt, an angler named Hoosac (but in Florida, not Indiana), waltzed a 10-lb bass to the local taxidermist for stuffing and mounting. Returning later to observe the result, said hooker impaled his thigh on the redoubtable fins of a sailfish, a practitioner of passive resistance lying quietly on a table. In the face, so to speak, of the sailfish's impassivity, the bassman is suing the stuffer for a cool $10K. As the poet says:

When happy Hoosac hooked his bass
He fain would mount his fish in glass.
Thus to the taxidermist did he him hie,
Wishing with his fellow anglers to vie,
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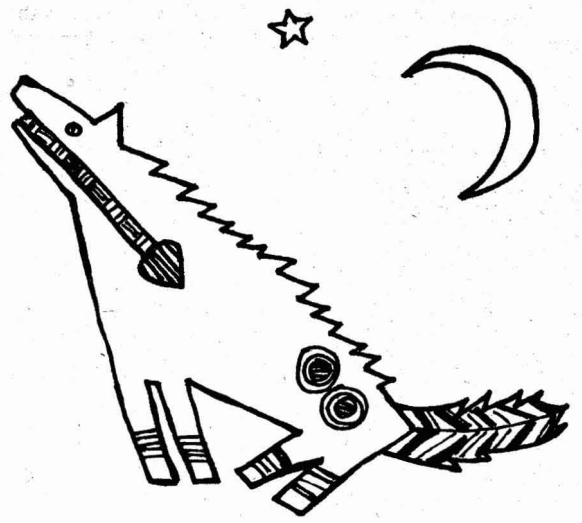

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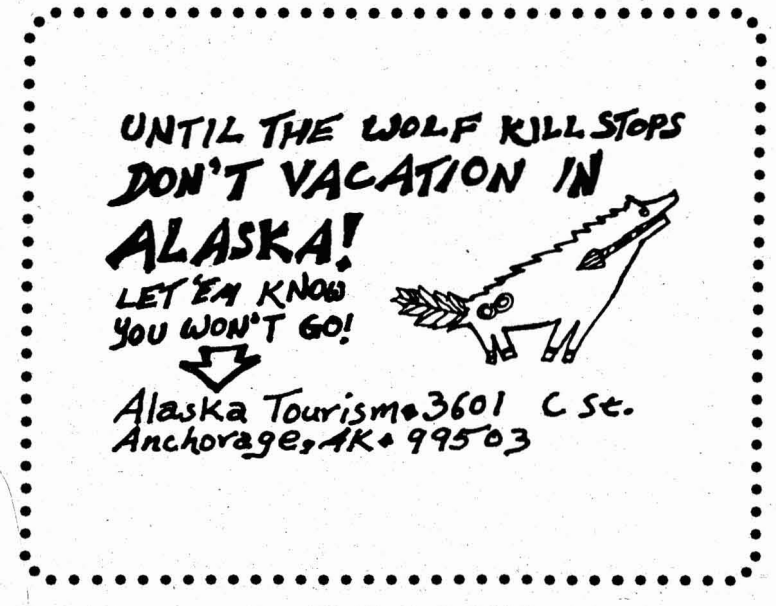

KILLING ROADS

A Citizens' Primer on the Effects & Removal of Roads

Why Pick On Roads?

An Introduction

by Jasper Carlton

"The horse is here to stay, but the automobile is only a novelty ... a fad."
—president of the Michigan Savings Bank advising Henry Ford's lawyer not to invest in the Ford Motor Co. in 1903

Once a grand wilderness of animal trails, most of North America has been transformed into a maze of roads. Those animal trails became Indian trials, then the routes of early trappers ... wagon trails ... dirt roads ... paved highways ... and finally interstate highways — the distressways of our modern society. Over 4 million miles of pavement now smother the earth in the United States alone.

Wider and wider stretches of asphalt and concrete become collecting pools for more and more stinkmobiles, traveling at faster and faster speeds. *Homo erectus asphaltus* is driving itself to oblivion, and taking with it the planet's natural diversity.

It is difficult to find any place, no matter how rugged, that a motorized vehicle of some sort cannot reach. Roads of one form or another now threaten the biological integrity of every wilderness on the continent. The most effective way to protect wild, natural areas is to deny motorized access by humans — access made possible by roads. The easiest way to restore areas to wilderness oftentimes is to close the roads.

The planning and construction of roads, particularly paved highways, largely determines how society uses land, air and water. Traditionally, in road planning, natural wildlands are not given adequate consideration, as economy prevails over ecology. Transportation systems, as part of the land-use planning process, should be radically changed or dismantled now to prevent any additional impact on remaining natural areas and to allow wilderness restoration throughout this continent.

While some environmental groups and government agencies are beginning to address the severe impacts of exhaust emissions from motorized vehicles, little has been done to assess and reduce the cumulative impact on natural diversity of this continent's road network. Environmentalists fighting proposed roads in National Forests have tended to use economic rather than ecological arguments.

The reason to forego road-building in a National Forest is not simply that the forest has low timber values, commercially undesirable tree species, or poor access to markets. Considering species extirpation rates and the status of natural diversity and ecological processes, we must conclude that every National Forest and almost every other public land in the country is already seriously overroaded. A moratorium on all road-building should be implemented immediately.

Considerable acreages of roadless areas still exist in our National Forests (see *The Big Outside* [esp. p.13-14] by Dave Foreman and Howie Wolke). Most of these wild areas are being considered for entry within the next decade by the US Forest Service; all contain important wildlife habitat. Though some support more biological diversity than others, none is "insignificant," as some conservation organizations would have us believe.

The natural environment all over the planet is being reduced to little more than gasping biotic fragments. Thousands of species are being extirpated from local areas each day and are headed for eventual extinction. Over 6000 native US vertebrate, invertebrate and plant species are now biologically threatened or endangered. It is time to draw lines and save all that remains and restore what we can.

Expanding human use of the last, large, natural diverse ecosystems in North America —and, indeed, on Earth — is accelerating the extinction of animal and plant species. Many of the most biologically diverse of these ecosystems, particularly in Hawaii and the southern United States, are collapsing. Tropical moist rainforests and Pacific Northwest old-growth forests are not the only ecosystems in which large numbers of species are under grave threat. The specific road closures recommended in this tabloid reflect the urgency of this situation. These roads should never have been built. In short, all remaining natural areas, no matter how small or large, should be saved from development — particularly from roads, which act as a magnet to cancerous development.

Help a toad across the road. Brake for a snake.

This activist holds a particular affinity for the creeping and crawling critters. Snakes may have been the first successful vertebrates on land but they are being massacred now on the highways of North America. Those who have had the misfortune to witness what happens when snakes begin a mass movement, or toads migrate to their spawning ponds in spring, and their routes involve crossing roads, will quickly realize the threat that roads pose to the survival of countless species. All life matters in the natural scheme of things — even creatures such as snakes and toads that presently appeal emotionally to only a minority of humans. All life forms have a right to exist for their own sake.

Equal rights for all species! Stop that traffic George!

The impacts of roads on natural diversity and wilderness have not received enough attention. This Road Tabloid is an effort by *Earth First! Journal* and the Earth First! Biodiversity Project to remedy this. The tabloid is intended to educate activists and the public about the impact of roads on natural diversity and to stimulate appropriate remedial actions.

—Jasper Carlton, EF! Biodiversity Project coordinator

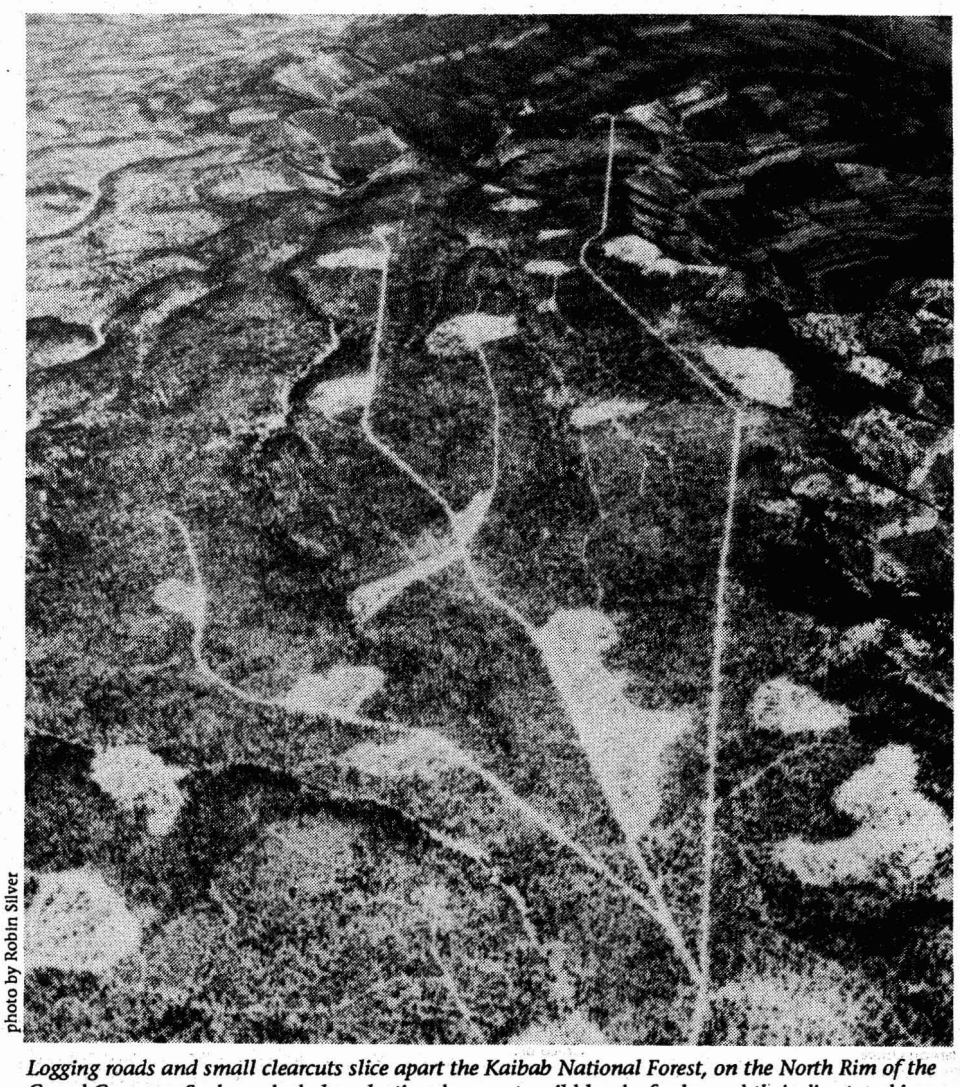

photo by Robin Silver

Logging roads and small clearcuts slice apart the Kaibab National Forest, on the North Rim of the Grand Canyon. Such roads do long-lasting damage to wild lands, far beyond their direct and immediate impacts.

Ecological Effects of Roads

(Or, The Road to Destruction)

by Diamondback

Nothing is worse for sensitive wildlife than a road. Over the last few decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity — habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting — are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves, as displacement factors affecting animal distribution and movement patterns, as population fragmenting factors, as sources of sediments that clog streams and destroy fisheries, as sources of deleterious edge effects, and as access corridors that encourage development, logging, and poaching of rare plants and animals. Road-building in National Forests and other public lands threatens the existence of *de facto* wilderness and species that depend on wilderness.

Despite heightened recognition (by informed people) of the harmful effects of roads, road density continues to increase in the US and other countries. Federal, state, and local transportation departments devote huge budgets to construction and upgrading of roads. Multinational lending institutions, such as the World Bank, finance roads into pristine rainforest, which usher in a flood of settlers who destroy both the rainforest and the indigenous cultures. Public land-managing agencies build thousands of miles of roads each year to support their resource extraction activities, at a net cost to the taxpayer. The US Forest Service alone plans to build or reconstruct almost 600,000 miles of roads in the next 50 years. Most public agencies disregard the ecological impacts of roads, and attempt to justify timber roads as benefitting recreation and wildlife management. Even when a land manager recognizes the desirability of closing roads, he or she usually contends that such closures would be unacceptable to the public (i.e., the ignorant ORV enthusiast or slob hunter).

This article will review some ecological effects of roads, with emphasis on impacts to wildlife (broadly defined). My concern is with all roads, from primitive logging roads to four-lane highways. Although the effects of different types of roads vary, virtually all are bad, and the net effect of all roads is nothing short of catastrophic. The technical literature that pertains to this topic is vast, and an entire book would be needed to summarize it adequately. Consider this only an introduction, or an "executive summary" of a massive tragedy.

Direct effects, such as flattened fauna, are easy to see. In contrast, many indirect effects of roads are cumulative and involve changes in community structure and ecological processes that are not well understood. Yet, these long-term effects signal a deterioration in ecosystems that far surpasses in importance the visual and olfactory insult to us of a bloated deer by the roadside.

DIRECT EFFECTS

Roadkills

The above statement notwithstanding, roadkill can have a significant impact on wildlife populations. The Humane Society of the US and the Urban Wildlife Research Center have arrived at a conservative figure of one million animals killed each day on highways in the United States. When I-75 was completed through a major deer wintering area in northern Michigan, deer road mortality increased by 500%. In Pennsylvania, 26,180 deer and 90 bears were killed by vehicles in 1985. These statistics do not account for animals that crawl off the road to die after being hit. Also, roadkill statistics are invariably biased toward mammals, against reptiles, amphibians, and probably birds, and do not include invertebrates at all (who wants to count the insects smashed on windshields and grills?).

Vehicles on high-speed highways pose the greatest threat to wildlife. Unpaved roads, particularly when "unimproved," are less dangerous. Roadkill usually increases with volume of traffic. In one Texas study, however, mortality was greatest on roads with intermediate volumes, presumably because higher-volume roads had wider rights-of-way that allowed better visibility for animals and drivers alike. Increases in traffic volume do result in more collisions on any given road, and in our profligate society more people means more cars on virtually every road.

Florida is a rapidly-developing state with more than 1000 new human residents each day and over 50 million tourists annually. Primary and interstate highway mileage has increased by 4.6 miles per day for the last 50 years. Hence it is no surprise that roadkills are the leading known cause of death for all large mammals except Whitetailed Deer. Roadkills of Florida Black Bear, a subspecies listed as threatened by the state, have been rising sharply in recent years, from 2-3 per year in the 1970s to 44 in 1989. Many of the bears are killed on roads through public lands, in particular the Ocala National Forest. Seventeen Florida Panthers, one of the most endangered subspecies of mammals in the world, are known to have been killed on roads since 1972. Since 1981, 65% of documented Florida Panther deaths have been roadkills, and the population of only about 20 individuals is unlikely to be able to sustain this pressure. An average of 41 Key Deer, a species listed as Endangered by the US Fish and Wildlife Service, were killed on roads yearly from 1980 through 1986, and 57

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were killed in 1987. Roadkill is also the leading cause of mortality for the American Crocodile, also an Endangered species, in south Florida. The Florida Scrub Jay, a Threatened species, has been found to suffer considerable mortality from collision with vehicles, and researchers have concluded that these birds cannot maintain stable populations along roads with considerable high-speed traffic.

Snakes are particularly vulnerable to roadkill, as the warm asphalt attracts them; yet their carcasses are seldom tallied. Herpetologists have noted dramatic declines of snakes in Paynes Prairie State Preserve near Gainesville, Florida, which is crossed by two four-lane highways. This preserve was once legendary for its diversity and density of snakes, but no more. Similarly, a study of south Florida herpetofauna by Wilson and Porras attributed declines in many snakes to the increasing road traffic in that region.

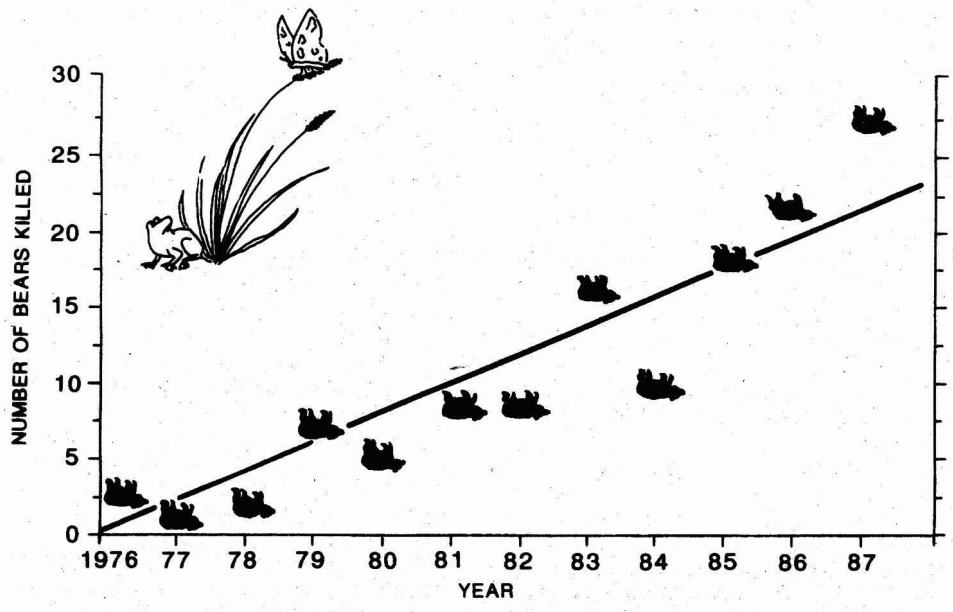
Roadkill is a classic death-trap phenomenon. Animals are attracted to roads for a variety of reasons, often to their demise. Snakes and other ectotherms go there to bask, some birds use roadside gravel to aid their digestion of seeds, mammals go to eat de-icing salts, deer and other browsing herbivores are attracted to the dense vegetation of roadside edge, rodents proliferate in the artificial grasslands of road verges, and many large mammals find roads to be efficient travelways. Songbirds come to dustbathe on dirt roads, where they are vulnerable to vehicles as well as predators. Vultures, Crows, Coyotes, Raccoons, and other scavengers seek out roadkills, often to become roadkills themselves.

Road Aversion and other Behavioral Modifications

Not all animals are attracted to roads. Some have learned that roads bring unpleasant things, such as people with guns. Species that show road aversion exhibit decreasing densities toward roads. Various studies report that Turkey, White-tailed Deer, Mule Deer, Elk, Mountain Lions, Grizzly Bears, and Black Bears avoid roads. When these animals are disturbed by vehicles, they waste valuable energy in flight. Other studies show conflicting results, which usually can be explained by differences in road use. Certain bird species also have been found to avoid roads, or the forest edges associated with roads. In the Netherlands, researchers found some bird species to be displaced up to 2000 meters from busy highways.

The American Elk is one of the best-studied species with respect to road aversion. Elk avoidance of roads is clearly a learned response (they do not avoid natural edges), and is related to traffic volume and hunting pressure. In western Montana, Jack Lyon found that Elk avoid areas within 1/4-1/2 mile of roads, depending on traffic, road quality, and the density of cover near the road. According to work by Jack Thomas in Oregon, a road density of one mile per square mile of land results in a 25% reduction in habitat use by Elk; two miles of road per square mile can cut Elk habitat use by half. As road density increases to six miles of road per square mile, Elk and Mule Deer habitat use falls to zero. Elk in some areas have learned that roads are dangerous only in the hunting season, and do not show road aversion in other seasons. Other studies suggest that Elk avoid open roads, but not closed roads. Where hunting pressure is high, however, even closed roads may be avoided because so many hunters walk them.

Grizzly Bears also may be displaced by roads. In British Columbia, Grizzlies were found to avoid areas within 1/2 mile of roads. A study in the Cabinet Mountains of northwestern Montana determined that the mean distance of Grizzly radio-telemetry signals from open roads (2467 m) was significantly greater than the mean distance from closed roads (740 m). Other studies have found that Grizzlies avoid areas near roads, especially by day, even when preferred habitat and forage are located there. This is particularly alarming, because in Yellowstone National Park, which has the second largest Grizzly population in the lower 48, roads and developments are situated in the most productive Grizzly Bear habitat. Natural movements of Grizzly Bears may also be deflected by roads, as Chuck Jonkel has documented in Montana. In other cases, however, Grizzlies may use roads as travelways, particularly when they find off-road travel difficult due to dense brush or logging slash. Grizzlies have also learned to exploit the hastened growth of forage plants near roads in spring. Similarly, the abundance of soft mast such as Pokeberry and Blackberry along road edges attracts Appalachian Black Bears in summer. Any advantages associated with roads for either bear species are outweighed by the increase in sometimes fatal (usually for the bear, unfortunately) encounters with humans.



Black Bear Roadkills Collected in Florida, 1976-1987

Vehicle collisions are the number one known cause of mortality for most of Florida's large mammal species, including bear, panther, and Key Deer. Mortality increases as vehicle traffic increases. Adapted from the Defenders of Wildlife publication, Preserving Communities & Corridors.

Wild animals can become habituated to roads. Thirty years ago, for example, bears in Yellowstone, the Great Smokies, and other parks often sat along the roadsides and picnic areas waiting for handouts from tourists. When parks disallowed handouts and relocated habituated bears, the attraction subsided. In any area where animals are exposed to frequent human activity, habituation can be expected. This is not necessarily a desirable response, however. Although animals that are acclimated to roads and vehicles do not waste energy reserves in flight response, some of them become aggressive toward people. Aggressive behavior of habituated animals has been noted in bears, Mule Deer, Elk, Bighorn Sheep, Bison, and other species. Conflicts occur most often when humans approach animals closely in order to feed or photograph them. A few years ago in the Smoky Mountains, a bear reportedly chomped on a baby's face when a parent held it close for a kissing photo — the baby's cheek had been smeared with honey. Such encounters usually result in relocation or killing of the "problem" animals, though the real problem is human stupidity. Studies of Grizzly Bears in Montana and British Columbia have found that bears habituated to human activity, especially moving vehicles, are more vulnerable to legal and illegal shooting.

Fragmentation and Isolation of Populations

Some species of animals simply refuse to cross barriers as wide as a road. For these species, a road effectively cuts the population in half. A network of roads fragments the population further. The remaining, small populations are then vulnerable to all the problems associated with rarity: genetic deterioration from inbreeding and random drift in gene frequencies, environmental catastrophes, fluctuations in habitat conditions, and demographic stochasticity (i.e., chance variation in age and sex ratios). Thus, roads contribute to what many conservation biologists consider the major threat to biological diversity: habitat fragmentation. Such fragmentation may be especially ominous in the face of rapid climate change. If organisms are prevented from migrating to track shifting climatic conditions, and cannot adapt quickly enough because of limited genetic variation, then extinction is inevitable.

In one of the first studies on habitat isolation by roads, D.J. Oxley and co-workers in southeastern Ontario and Quebec found that small forest mammals such as the Eastern Chipmunk, Gray Squirrel, and White-footed Mouse rarely ventured onto road surfaces when the distance between forest margins (road clearance) exceeded 20 meters. The authors suggested that divided highways with a clearance of 90 meters or more may be as effective barriers to the dispersal of small mammals as water bodies twice as wide. Earlier work in Africa had shown that tortoises, and young Ostrich, Warthogs, and African Elephants, had difficulty crossing roads with steep embankments. In Germany, Mader found that several species of woodland carabid beetles and two species of forest-dwelling mice rarely or never crossed two-lane roads. Even a small, unpaved forest road closed to public traffic constituted a barrier. All of these animals were physically capable of crossing roads, but appeared to be psychologically constrained from venturing into such openings. In Ontario, Merriam and co-workers found that narrow gravel roads were "quantitative barriers" to White-footed Mice in forest fragments; many fewer mice crossed roads than moved an equal distance in the forest alongside roads.

In forests, a road clearance constitutes an obviously contrasting habitat. One might expect that the barrier effect of roads would be less severe in more open habitats, where the contrast between the road and adjoining habitat is less. Yet, a study by Garland and Bradley of the effects of a four-lane highway on rodents in the Mojave Desert found that rodents almost never crossed the road. Of eight species captured, marked, and recaptured, only an adult male Antelope Ground Squirrel crossed the entire highway. No roadkills were observed, suggesting that few rodents ever ventured onto the highway.

Animals far more mobile than rodents and beetles may hesitate to cross roads. In the Southern Appalachians, Brody and Pelton found that radio-collared Black Bears almost never crossed an interstate highway. In general, the frequency at which bears crossed roads varied inversely with traffic volume. Bears appeared to react to increasing road densities by shifting their home ranges to areas of lower road density. The power of flight may not override the barrier effect of roads for some bird species. Many tropical forest birds are known to be averse to crossing water gaps no wider than a highway. Further research is needed to determine if these species react to road clearings as they do to water gaps.

Thus, populations of many animal species divided by a heavily traveled road may be just as isolated from one another as if they were separated by many miles of barren urban or agricultural land. Larry Harris and Peter Gallagher, writing in a recent Defenders of Wildlife publication on habitat corridors ("Preserving Communities & Corridors" available from Defenders, 1244 19th St. NW, Washington, DC 20036; $10 each), put the road fragmentation problem into proper perspective: "Consider this triple jeopardy: At the same time that development reduces the total amount of habitat, squeezing remaining wildlife into smaller and more isolated patches, the high-speed traffic of larger and wider highways eliminates more and more of the remaining populations." To the extent that various plant species depend on road-averse animals for dispersal, roads fragment plant populations as well.

Pollution

Pollution from roads begins with construction. An immediate impact is noise from construction equipment, and noise remains a problem along highways with heavy traffic. Animals respond to noise pollution by altering activity patterns, and with an increase in heart rate and production of stress hormones. Sometimes animals become habituated to increased noise levels, and apparently resume normal activity. But birds and other wildlife that communicate by auditory signals may be at a disadvantage near roads. Many male birds, frogs and toads, and insects use song to attract females. How can these guys get laid if highway traffic drowns out their serenades? Highway noise can also disrupt territory establishment and defense. A study by Andrew Barrass found that toads and treefrogs showed abnormal reproductive behavior in response to highway noise.

Vehicles emit a variety of pollutants, including heavy metals, carbon dioxide, and carbon monoxide, all of which may have serious cumulative effects. Combustion of gasoline containing tetraethyl lead, and wear of tires containing lead oxide, result in lead contamination of roadsides. Although unleaded gasoline now accounts for more than half of all gasoline used in the US, lead persists in soils and the food web for long periods. In Kansas, lead levels in roadside soils and vegetation in the early 1980s were two to three times greater than from near roads with similar traffic volumes in 1973 and 1974, when the use of unleaded gasoline was 42% lower.

Many studies have documented increasing levels of lead in plants with proximity to roads, and with increases in traffic volume. Plant roots take up lead from the soil, and leaves take it up from contaminated air or from particulate matter on the leaf surface. This lead moves up the food chain, with sometimes severe toxic effects on animals, including reproductive impairment, renal abnormalities, and increased mortality rates. Food chain effects can switch between aquatic and terrestrial pathways. Lead concentrations in tadpoles living near highways can be high enough to cause physiological and reproductive impairment in birds and mammals that prey on tadpoles.

Less is known about the effects of other heavy metals, such as zinc, cadmium, and nickel. Motor oil and tires contain zinc and cadmium; motor oil and gasoline contain nickel. These metals, like lead, have been found to increase with proximity to roads, and with increasing traffic volume and decreasing soil depth. Earthworms have been found to accumulate all these metals, in concentrations high enough to kill earthworm-eating animals. These roadside contaminants can be carried far from roads by wind and water. Lead contamination has been noted up to 100 miles from the nearest metropolitan area.

The maintenance of roads and roadsides also introduces a variety of pollutants into roadside ecosystems. Americans like their roads free of ice and dust, and their roadsides free of weeds. Approximately 25% of all herbicides sold in the United States for non-agricultural purposes are used in highway maintenance. The effects of herbicides on wildlife and ecosystems have been poorly studied, but anyone who has witnessed the destruction of wildflowers and other plants along roadsides (even through parks) for the sake of tidiness has cause to complain.

Highway de-icing programs are notori-

This Roads Primer is an effort by the *Earth First! Journal* and the Earth First! Biodiversity Project to educate activists and the public about the impact of roads on natural diversity and to stimulate appropriate remedial actions.

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ous sources of saline pollution. In the early 1970s, it was estimated that 9-10 million tons of sodium chloride, 11 million tons of abrasives, and 30,000 tons of calcium chloride were used in the US each year for highway de-icing. As noted above, many animals are attracted to this salt and end up as roadkills or at least get a dose of the salt's toxic additives, including cyanide compounds. Drainage of salt-laden water from roads into aquatic ecosystems may stimulate growth of blue-green algae; the chloride concentration of major water bodies near urban areas has been found to increase by as much as 500%. Furthermore, sodium and calcium ion exchange with mercury releases toxic mercury into these systems. The cyanide ions from rust-inhibiting additives are extremely toxic to fish.

In many rural areas, waste oil from crankcases is sprayed onto unpaved roads for dust control. A 1974 study estimated that some 100 million gallons of waste oil are sprayed on dirt roads in the US each year. Only about 1% of this oil remains in the top inch of a road surface. Much of it reaches water bodies, where it coats the surface, limiting oxygen exchange and sunlight penetration and having toxic effects on aquatic organisms.

Impacts on Terrestrial Habitats

The impacts of roads on terrestrial ecosystems include direct habitat loss; facilitated invasion of weeds, pests, and pathogens, many of which are exotic (alien); and a variety of edge effects. Roads themselves essentially preempt wildlife habitat. A 1974 report by the Council on Environmental Quality estimated that one mile of interstate highway consumes up to 48 acres of habitat. Logging roads result in the clearing of about 50 acres for each square mile of commercial forest (i.e., 10 acres are deforested for every mile of road, and each square mile of forest averages 5 miles of road). Road construction also kills animals and plants directly, and may limit long-term site productivity of roadsides by exposing low nutrient subsoils, reducing soil water holding capacity, and compacting surface materials. It also makes slopes more vulnerable to landslides and erosion, which in turn remove additional terrestrial wildlife habitat and degrade aquatic habitats.

Some species thrive on roadsides, but most of these are weedy species. In the Great Basin, rabbitbrush is usually more abundant and vigorous along hard-surfaced roads than anywhere else, because it takes advantage of the runoff water channeled to the shoulders. Although certainly attractive, the common rabbitbrush species are in no danger of decline, as they invade disturbed areas such as abandoned farmsteads and fencerows, and are considered an indicator of overgrazing. In the Mojave Desert, Creosote Bush is another abundant species that opportunistically exploits the increased moisture levels along roadsides.

Many of the weedy plants that dominate and disperse along roadsides are exotics. In some cases, these species spread from roadsides into adjacent native communities. In much of the west, Spotted Knapweed has become a serious agricultural pest. This Eurasian weed invades native communities from roadsides, as does the noxious Tansy Ragwort. In Florida, a state plagued by exotic plants, one of the biggest offenders is Brazilian Pepper. This tall, fast-growing shrub readily colonizes roadside habitats. When soil in adjacent native habitats is disturbed by off-road vehicles, Brazilian Pepper invades. Invasion by Brazilian Pepper and other roadside exotics is becoming a serious problem in the Atlantic coastal scrubs of south Florida, communities endemic to Florida and containing many rare species. Another invasive exotic, Melaleuca, is expanding from roadsides and dominating south Florida wetlands. In southwest Oregon and northwest California, an apparently introduced root-rot fungus is spreading from logging roads and eliminating populations of the endemic Port Orford Cedar.

Opportunistic animal species also may benefit from roads. Grassland rodents, for example, sometimes extend their ranges by dispersing along highway verges. In 1941, L.M. Huey documented a range extension of pocket gophers along a new road in the arid Southwest. Meadow voles have been found to colonize new areas by dispersing along the grassy rights-of-way (ROWs) of interstate highways. Roads also facilitate dispersal of prairie dogs. In 1983, Adams and Geis reported that more species of rodents may be found in highway ROWs than in adjacent habitats, though several species avoid ROW habitat. Birds associated with grassland or edge habitat, such as the European Starling, Brewer's and Red-winged Blackbirds, Brown-headed Cowbird, Indigo Bunting, White-throated Sparrow, Song Sparrow, and Killdeer, all have been found to increase in abundance near roads. Cliff and Barn Swallows, Starlings, House Sparrows, and Rock Doves (the latter three are exotic species in North America) often nest and roost in highway bridges. Many species of birds and mammals feed on roadkill carrion.

Some people claim that increases in grassland, edge, and other opportunistic species near roads constitute a benefit of roads. But increased density near roads may not be favorable for the animals involved, if the road exposes them to higher mortality from heavy metal poisoning or collision with vehicles. In this sense, a road can be an "ecological trap" and a "mortality sink" for animal populations. Furthermore, the species that may benefit from roads are primarily those that tolerate or even thrive on human disturbance of natural landscapes, and therefore do not need attention from conservationists (except occasional control). Many of these weedy species are exotic, and have detrimental effects on native species.

Edge effects, once considered favorable for wildlife because many game species (e.g., White-tailed Deer, Eastern Cottontail, Northern Bobwhite) are edge-adapted, are now seen as one of the most harmful consequences of habitat fragmentation. Especially when it cuts through an intact forest, a road introduces a long swath of edge habitat. Forest edge is not a line, but rather a zone of influence that varies in width depending on what is measured. Changes in microclimate, increased blowdowns, and other impacts on vegetation may extend 2-3 tree-heights into a closed-canopy forest. Shade-intolerant plants, many of them exotic weeds, colonize the edge and gradually invade openings in the forest interior. Dan Janzen found weedy plant species invading treefall gaps in a Costa Rican forest up to 5 kilometers from the forest edge. Changes in vegetation structure and composition from edge effects can be more persistent than effects of clearcutting, from which at least some forest types will eventually recover, if left alone.

The Brown-headed Cowbird, originally abundant in the Great Plains but now throughout most of North America because of forest fragmentation, is known to penetrate forests at least 200 meters from edge. The cowbird is a brood parasite that lays its eggs in the nests of other bird species and can significantly reduce the reproductive success

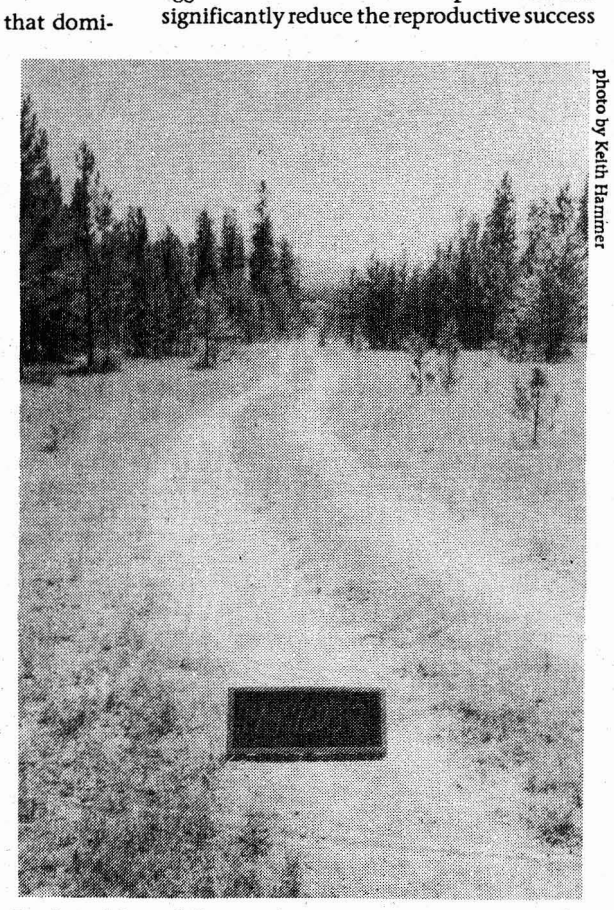

photo by Keith Hammer

Roads and Spotted Knapweed are common companions on the Flathead National Forest. Though it was once closed and dropped from the Flathead's road inventory, this road now detours around a kelly hump (earth berm) to wind through Spotted Knapweed along the Swan River floodplain.

of its hosts. Forest birds, most of which did not evolve with the cowbird and are not well adapted to its parasitism, may show serious declines in areas where cowbirds have become common. In addition, many opportunistic nest predators, such as jays, crows, Raccoons, and Opossums, are common in roadside environments (partially because of supplemental food in the form of carrion) and often concentrate their predatory activities near edges. Increases in nest predation from these opportunists can extend up to 600 meters from an edge, as shown by David Wilcove using artificial nest experiments.

A narrow logging road with no maintained verge would not be expected to generate substantial edge effects, particularly if surrounded by a tall forest canopy. In this sense, the road would not differ much from a hiking trail (even trails create some edge effects, however, such as invasion of weedy plants caused by pant-legs dispersal). As forest roads are "improved," road clearance increases and allows more penetration of sunlight and wind. Edge species are then attracted to these openings. Two-lane roads with maintained rights-of-way and all interstate highways are lined by edge habitat. A forest criss-crossed by improved roads may be largely edge habitat, and its value for conservation of native flora and fauna diminished accordingly.

Impacts on Hydrology and Aquatic Habitats

Road construction alters the hydrology of watersheds through changes in water quantity and quality, stream channel morphology, and ground water levels. Paved roads increase the amount of impervious surface in a watershed, resulting in substantial increases in peak runoff and storm discharges. That usually means flooding downstream. Reduced evapotranspiration within road rights-of-way may also result in increased runoff and streamflows. However, increases in streamflows in forested watersheds are not usually significant unless 15% or more of the forest cover is removed by road construction and associated activities such as logging.

When a road bed is raised above the surrounding land surface, as is normally the case, it will act as a dam and alter surface sheet flow patterns, restricting the amount of water reaching downstream areas. Mike Duever and co-workers found this to be a significant problem in the Big Cypress-Everglades Ecosystem of south Florida. Ditches dug for road drainage often drain adjacent wetlands as well. The US Fish and Wildlife Service, in 1962, estimated that 99,292 acres of wetlands in western Minnesota had been drained as a result of highway construction. This drainage occurred at a rate of 2.33, 2.62, and 4.10 acres of wetland per mile of road for state and federal, county, and township highways, respectively.

Roads concentrate surface water flows, which in turn increases erosion. Megahan and Kidd, in 1972, found that erosion from logging roads in Idaho was 220 times greater than erosion from undisturbed sites. Logging roads used by more than 16 trucks per day may produce 130 times more sediment than do roads used only by passenger cars. Incision of a slope by roadcuts in mountainous areas may intercept subsurface flow zones, converting subsurface flow to surface slow and increasing streamflow rates. Water tables are almost always lowered in the vicinity of a road.

Where a road crosses a stream, engineers usually divert, channelize, or otherwise alter the stream channel. Culverts and bridges alter flow patterns and can restrict passage of fish. Channelization removes natural diverse substrate materials, increases sediment loads, creates a shifting bed load inimical to bottom-dwelling organisms, simplifies current patterns, lowers the stream channel and drains adjacent wetlands, reduces the stability of banks, and exacerbates downstream flooding.

The impacts of roads on fish and fisheries have long concerned biologists. Increased erosion of terrestrial surfaces almost inevitably results in increased sedimentation of streams and other water bodies. Even the best designed roads produce sediment, and unpaved roads continue to produce sediment for as long as they remain unvegetated. A divided highway requiring exposure of 10 to 35 acres per mile during construction produces as much as 3000 tons of sediment per mile. In a study of the Scott Run Basin in Virginia, Guy and Ferguson found that highway construction contributed 85% of the sediment within the basin. The yield was 10 times that normally expected from cultivated land, 200 times that from grasslands, and 2000 times that from forest land. Studies in northwestern California show that about 40% of total sediment is derived from roads and 60% from logged areas. Much of the sedimentation associated with roads occurs during mass movements (i.e., landslides) rather than chronic surface erosion. Roads dramatically increase the frequency of landslides and debris flows. Studies in Oregon have found that roads trigger up to 130 times more debris torrents than intact forest.

Increased sediment loads in streams have been implicated in fish declines in many areas. A 1959 study on a Montana stream, reported by Leedy in 1975, found a 94% reduction in numbers and weight in large game fish due to sedimentation from roads. Salmonids are especially vulnerable to sedimentation because they lay their eggs in gravel and small rubble with water flow sufficient to maintain oxygen supply. Fine sediments may cement spawning gravels, impeding the construction of redds. Increases in fine sediments also reduce the availability of oxygen to eggs and increase embryo mortality. Stowell and co-workers reported that deposition of 25% fine sediments in spawning rubble or gravel reduces fry emergence by 50%. Sedimentation also has negative effects on the invertebrate food supply of many fish. Furthermore, destruction of riparian vegetation by road construction results in higher water temperatures, which reduces dissolved oxygen concentrations and increases fish oxygen demands (a "double whammy"). If the fishing public was adequately informed of the negative effects of roads on fisheries, perhaps all but the laziest would demand that most roads on public lands be closed and revegetated!

INDIRECT EFFECTS

Access

The most insidious of all effects of roads is the access they provide to humans and their tools of destruction. Let's face it, the vast majority of humans do not know how to behave in natural environments. Fearful of experiencing Nature on its own terms, they bring along their chainsaws, ATVs, guns, dogs and ghetto-blasters. They harass virtually every creature they meet, and leave their mark on every place they visit. The more inaccessible we can keep our remaining wild areas to these cretins, the safer and healthier these areas will be. Those humans who

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respect the land are willing to walk long distances. If this is an "elitist" attitude, so be it; the health of the land demands restrictions on human access and behavior.

Many animal species decline with increasing road density precisely because roads bring humans with guns. For many large mammals, road aversion is not related to any intrinsic qualities of the road, but rather to their learned association of roads with danger. In other cases, mammals may continue to use roads because they provide convenient travelways or food supply, but are unable to maintain populations where road densities are high because of the mortality they suffer from legal or illegal hunting, or roadkill.

An historical study by Richard Thiel in northern Wisconsin, supplemented by modern radio-telemetry, showed that road density was the best predictor of Gray Wolf habitat suitability. As road density increased in the study area, the Wolf population declined. Wolves failed to survive when road densities exceeded .93 mile per square mile (.58 km per square km). Similar studies in Michigan and Ontario by Jensen and coworkers, and in Minnesota by Mech and coworkers, found a virtually identical threshold level for the occurrence of Wolves. Roads themselves do not deter Wolves. In fact, Wolves often use roads for easy travel or to prey on the edge-adapted White-tailed Deer. But roads provide access to people who shoot, snare, trap, or otherwise harass wolves. David Mech found that over half of all known Wolf mortality was caused by humans, despite the "protection" of the Endangered Species Act.

Many other large mammal species have been found to decline with increasing road access. The Florida Panther once ranged throughout the Southeast, from South Carolina through southern Tennessee into Arkansas, Louisiana and extreme eastern Texas. It is now restricted to south Florida, an area of poor deer and Panther habitat, but the last large roadless area available in its range. Problems associated with roads - roadkill, development, and illegal shooting — are now driving it to extinction. A population viability analysis has determined an 85% probability of extinction in 25 years, and a mean time to extinction of 20 years. Proposed management interventions still yield 75% to 99% probabilities of extinction within 100 years.

Recently, Seminole Chief James Billie shot a Panther with a shotgun from his pickup truck in the Big Cypress Swamp, ate it, and claimed this murder was a native religious ritual. Billie eventually won his case, not on religious grounds, but because taxonomists could not prove beyond all reasonable doubt that the skull found in Billie's possession was that of a Florida Panther, *Felis concolor* subspecies *coryi* (the various subspecies of Cougar differ little from one another in morphology).

Biologists agree that the only hope for the Panther is
reestablishment of populations elsewhere within its historic range. But is there anywhere with low enough road density to be safe? The best opportunity seems to be the 1.2 million acres in and around Okefenokee National Wildlife Refuge in southern Georgia and Osceola National Forest in north Florida, recently connected by purchase of Pinhook Swamp and its transfer to the Forest Service. Experimenters testing the feasibility of Panther reintroduction in this area released 5 neutered and radio-collared Texas Cougars, a subspecies closely related to *F.c. coryi*, into this habitat. Within a month, one cat died of unknown causes. Two more cats were killed by hunts soon thereafter. The final two cats discovered livestock (a goat pasture and an exotic game reserve), and were removed from the wild. This setback in the Panther reintroduction program demonstrates that even one of the wildest areas in the Southeast is still far too human-accessible for Panthers to survive. Except for the wettest part of the Okefenokee Swamp, the poorest Panther habitat, the area is riddled with roads and swarming with gun-toting "Crackers" and their hounds.

Other large mammals that suffer from road access include Cougars (western version of *F.c.*) and Grizzly Bears. A radio-telemetry study in Arizona and Utah, by Van Dyke and co-workers, found that Cougars avoided roads (especially paved and improved dirt roads) whenever possible, and established home ranges in areas with the lowest road densities. In southeastern British Columbia, McLellan and Mace found that a disproportionate amount of Grizzly Bear mortality occurred near roads. Of 11 known deaths, 7 bears were definitely shot and another 3 were probably shot from roads. Dood and coworkers found that 32% of all hunting mortality and 48% of all non-hunting mortality of Grizzlies in Montana occurred within one mile of a road. Knick and Kasworm recently found that illegal shooting was the primary cause of death for Grizzlies in the Selkirk and Cabinet-Yaak ecosystems, and concluded that the ability of regions to maintain viable populations of Grizzly Bears is related to road density and human access.

Road access imperils Black Bears, too. In the Southern Appalachians, Mike Pelton has estimated that bears cannot maintain viable populations when road density exceeds .8 miles of road per square mile. Later studies found that the situation is more complicated, and is related to traffic volume and other road use factors. The primary effect of roads on bears in the Southern Appalachians is to expose them to increased hunting. Hunting with the aid of trained hounds is the major source of mortality for bears in this region, including within National Parks and other sanctuaries, and is encouraged by the trade in bear gall bladders to the Oriental market.

The problem of road access and overhunting is often attributed to inadequacies of human ethics and law enforcement, rather than to any effect of the roads themselves. But as Richard Thiel pointed out, in discussing the Gray Wolf in northern Wisconsin, "Ultimately, the survival of wolves will depend on a change in human attitudes. Until then road densities are important in determining whether an area can sustain a viable population of wolves." We may have to wait a long time before attitudes toward Nature improve, but roads can be closed today.

Other consequences of road access include overcollecting of rare plants (e.g., cacti, orchids, and ginseng) and animals (e.g., snakes for the pet trade), the removal of snags near roadsides by firewood cutters, and increased frequency of fire ignitions. Removal of snags eliminates habitat for the many cavity-nesting and roosting birds and mammals. In the Blue Mountains of eastern Oregon and Washington, for example, 39 bird and 23 mammal species use snags for nesting or shelter. Woodpeckers are among the cavity-nesting birds known to be critically important in dampening forest insect outbreak. Thus, snag removal along roadsides is an anthropogenic edge effect that may have far-reaching effects on entire ecosystems.

Humans are suspected to cause at least 90% of wildfires in the US, over half of which begin along roads. In 1941, Shaw and coworkers reported 78% of all anthropogenic fires occurred with 265 feet of a road. In New Jersey, the origins of 75% of all forest fires were traced to roadsides.

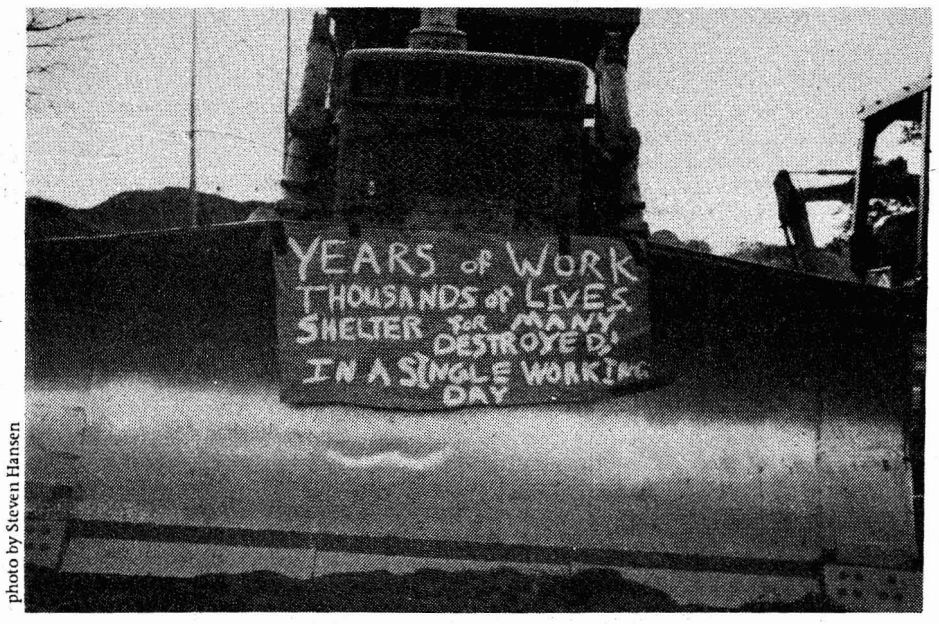


photo by Steven Hansen

Although fire is a natural process with beneficial effects on many ecosystems, natural fires and anthropogenic fires differ in many ways. One important difference is frequency; anthropogenic fires may occur more frequently than the natural fire return interval for a given ecosystem type. Another important difference is seasonality. In Florida, for example, most anthropogenic fires occur in winter, whereas natural lightning fires occur in late spring and summer. Research in Longleaf Pine-Wiregrass communities, which under natural conditions experience low-intensity ground fires at 2 to 5 year intervals, has determined that summer fires promote higher herbaceous plant diversity and flowering. Winter fires caused by humans tend to promote monotonous, shrub-dominated (e.g., Saw Palmetto) communities. It is a curious contradiction that the US Forest Service often justifies high road densities as necessary to provide fire control, when in fact most fires begin along roads.

Of the disturbances promoted by road access, perhaps the most devastating is development. Highways introduce pressures for commercial development of nearby land. Highway interchanges inevitably become nodes of ugly commercialism. Arterial streets encourage commercial strip development, and new rural and suburban roads bring in commercial, industrial, and residential development. Internationally funded road-building in Third World countries introduces hordes of immigrants, who quickly cut and burn the native forest. In Brazilian Amazonia, Philip Fearnside reported that road development funded by the World Bank facilitates the entry of settlers whose land claims (established by clearing the forest) justify building more roads. Thus, roads and deforestation interact in a positive feedback relationship. Roads bring settlement and development, which in turn call for more roads.

Cumulative Effects

So far, this article has discussed effects of roads mostly in isolation from one another. Indeed, almost all research on road problems has looked at one factor at a time, be it lead pollution, roadkill, edge effects, or access. In real ecosystems, however, these factors interact in complex ways, with long-term effects at several levels of biological organization.

To illustrate the complexity of possible impacts, consider this scenario: A network of roads is built into prime Gray Wolf habitat in northern hardwoods forest. Hunters flock into the area, depressing the Wolf population. Some Wolves are killed by vehicles. Eventually, the Wolf becomes extinct in this region. In the absence of Wolf predation, and with the abundance of brushy roadside edge habitat, the White-tailed Deer population explodes. Fires started by humans along roadsides create even more deer habitat. Hunters and vehicles take some deer, but they cannot keep up. The burgeoning deer population overbrowses the forest, eliminating regeneration of favored Eastern Hemlock, Arbor Vitae, Canada Yew, and a number of rare herbaceous plants. As a result, the floristic composition and vegetation structure of the forest gradually change. With reduced understory density due to heavy browsing, many warblers and other forest songbirds undergo serious declines. With Wolves gone, opportunistic medium-sized mammals ("mesopredators") such as Opossums and Raccoons increase in abundance and feed on the eggs and nestlings of song-

Earth First! Challenges Interstate Highway System

The US Interstate Highway System was started in 1956 with the passage of a national gasoline tax. Big bucks and political clout have driven the system through almost every natural ecosystem in the country. Typically, the full environmental costs of these interstate construction projects are never tallied. Only in the last decade have environmental impacts been examined in detail when considering the building of new sections of interstate highway, and merely cosmetic changes in design or route have been the outcome.

The cumulative impact of the entire US Interstate System on natural diversity has never been adequately analyzed. A separate (piecemeal) environmental impact statement (EIS) is usually prepared for each new section of the system. Rarely has there been any intensive follow-up by federal or state regulatory agencies after a highway is constructed to determine the real impact of the roadway and associated development activities on natural diversity.

The Federal Highway Administration has been particularly negligent in failing to support data collection on roadkills, and wildlife monitoring and analysis. The lack of tunnels and underpasses at places where natural wildlife corridors and traffic collide, and the failure of state and federal departments of transportation to install fine mesh fencing along critical parts of interstates to protect reptiles and amphibians, indicates that the Bush administration has no intention of taking measures to reduce the impact of interstate highways on Threatened and Endangered Species. With a rapidly growing number of Threatened and Endangered Species being "harmed" by the Interstate System, it appears that major infractions of the Endangered Species Act (ESA) may be occurring.

To correct this problem, the Earth First! Biodiversity Project has petitioned the Secretary of the US Department of Transportation (DOT) to prepare a comprehensive environmental impact statement to address the impact of the entire Interstate Highway System on all candidate and US listed Threatened and Endangered Species and their ecosystems. The EIS process must also include actions to prevent continuing or future harm, killing, or harassment of these species, pursuant to the provisions of the ESA.

The National Environmental Policy Act (NEPA) requires the Department of Transportation to evaluate the impact of the Interstate Highway System not only on an individual, section-by-section basis as each is planned and constructed, but cumulatively at local, regional and national levels. These impacts must also be reassessed periodically. Yet the DOT has failed to adequately assess, much less alleviate, the adverse impact these highways are having on animals and plants protected by the ESA.

State and federal highway planning agencies have also failed to carry out mandated mitigation measures once highway construction is completed. The failure to implement agreed-upon public access restriction along the newly completed I-75 (Slaughter Alley) through the Everglades Wetland Ecosystem in Florida, is but one recent example.

The US Fish and Wildlife Service (FWS) must also bear its share of responsibility for not protecting Threatened and Endangered Species from activities associated with the Interstate System. The FWS has failed to properly meet its requirements, under the ESA, to conduct Section 7 consultations and to prepare biological opinions to accurately assess the impact of US highways on all listed and candidate species. The EF! Biodiversity Project is taking administrative steps to correct this deficiency at all FWS regional offices.

We expect these efforts to meet strong opposition and perhaps to ultimately be resolved in the federal courts. We urge activists to write the Secretary of the US Department of Transportation and their senators and representatives in support of a thorough analysis of the impact of the Interstate Highway System on rare and endangered species. Full disclosure would reveal a serious problem, perhaps requiring controversial changes in how the Interstate System is managed.

—Jasper Carlton

birds, many of which nest on or near the ground, further depressing their numbers. Brown-headed Cowbirds parasitize these beleaguered songbirds within 200 meters or so of road edges. Cutting of snags for firewood along the roadsides decimates cavity-nesting bird populations. Populations of insect pests now cycle with greater amplitude, resulting in massive defoliation. The roads also bring in developers, who create new residential complexes, and still more roads. Roadside pollutants from increased traffic levels poison the food chain. The original forest ecosystem has been irretrievably destroyed.

This scenario is fictitious, but every part of it has been documented somewhere. Because many of the animal species most sensitive to roads are large predators, we can expect a cascade of secondary extinctions when these species are eliminated or greatly reduced. Recent research confirms that top predators are often "keystone species," upon which the diversity of a large part of the community depends. When top predators are eliminated, such as through roadkill or because of increased access to hunters, opportunistic mesopredators increase in abundance, leading to declines of many songbirds and ground-dwelling reptiles and amphibians. In the tropics, predator removal can lead to an increased abundance of mammals that eat large-seeded plants, which in turn may result in changes in plant community composition and diversity (see John Terborgh's article, "The Big Things that Run the World," reprinted in *Earth First!*, 8-89).

Other keystone species may be similarly vulnerable to roads. The Gopher Tortoise of the southeastern US, for example, digs burrows up to 30 feet long and 15 feet deep. By a recent count, 362 species of commensal invertebrates and vertebrates have been found in its burrows, and many of them can live nowhere else. Yet, the slow-moving Gopher Tortoise is extremely vulnerable to roadkill on the busy highways of this high growth region. Roads also provide acess to developers and poachers, the tortoise's biggest enemies. But the effects of roads on Gopher Tortoises can be more subtle. Good Gopher Tortoise habitat is Longleaf Pine-Wiregrass, which requires frequent summer fires to maintain its open structure. Although, as discussed above, many fires are ignited along roadsides, the net effect of roads on this habitat has been to stop the spread of fires that once covered areas the size of several counties. Those roadside fires that do ignite are mostly winter burns, which are less effective in controlling shrub invasion. As shrubs, oaks, and other hardwoods overtake this ecosystem, they shade out the herbaceous plants upon which the herbivorous Gopher Tortoise depends.

The net, cumulative effect of roads is to diminish the native diversity of ecosystems everywhere. Habitats in many different places around the world are invaded by virtually the same set of cosmopolitan weeds. Regions gradually are homogenized — they lose their "character." Every place of similar climate begins to look the same, and most ecosystems are incomplete and missing the apex of the food chain. The end result is an impoverishment of global biodiversity.

WHAT CAN BE DONE?

Mitigation

The traditional response of public agencies to road-wildlife conflicts, in those rare instances when they do respond, is "mitigation," i.e., build the road but design it so as to minimize its impacts. For example, barren roadsides can be planted and stabilized by wire netting in order to reduce erosion, landslides, and sedimentation of streams. Stream culverts can be designed to minimize disruption of flow and bed morphology. New roads can be located, and existing roads relocated, outside of critical wildlife habitats (such as moist meadows, shrub fields, riparian zones, and other Grizzly Bear feeding areas). Speed bumps and warning signs can be installed to slow down motorists and reduce roadkill. Reflective mirrors along roadsides and hood-mounted ultrasonic whistles are devices intended to warn animals of approaching death-machines, but are still of unproven benefit.

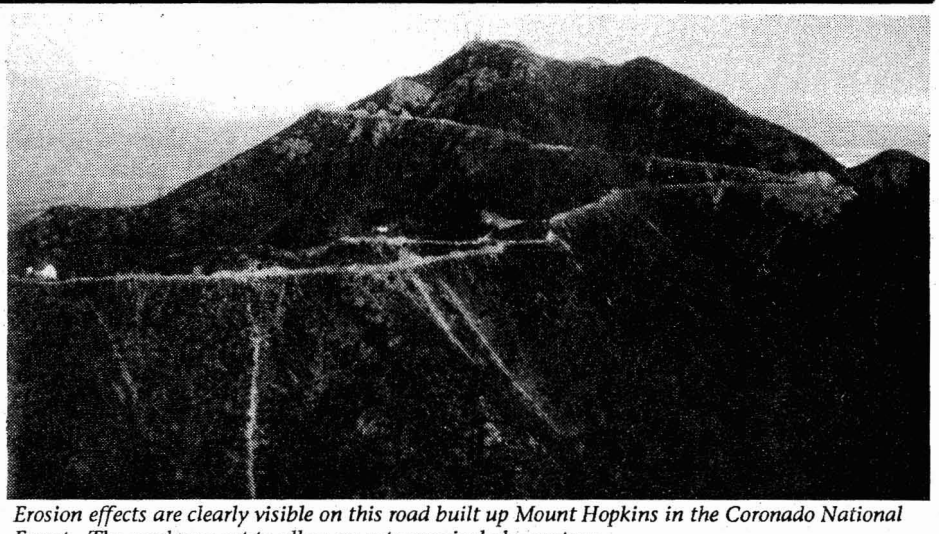
Road rights-of-way can be managed to maximize their potential as native wildlife habitat and dispersal corridors. If wide swaths of old-growth Longleaf Pines are maintained along highway ROWs in the Southeast, for example, they may serve to connect isolated Red-cockaded Woodpecker populations. Such corridors were recommended by a committee of the American Ornithologists' Union. Some evidence suggests that Red-cockaded Woodpeckers may indeed disperse along such corridors, but not across long expanses of unsuitable habitat. The management of "roadside verges" for fauna and flora has a long history in Britain, as reviewed by J.M. Way in 1977.

Undoubtedly, mitigation measures, if implemented intelligently, can reduce the harmful effects of roads on wildlife. A 1982 report by Leedy and Adams, for the US Department of Transportation and Fish and Wildlife Service, summarizes a variety of design and construction options to mitigate the effects of roads. For reducing roadkills, a combination of fencing and underpasses has proven effective in many instances. Tunnels under roads were used as early as 1958 in the United Kingdom to reduce roadkill of Badgers, and have been used in several countries to reduce roadkill of amphibians (many frogs, toads, and salamanders migrate to their breeding ponds on wet spring nights). Toad tunnels were constructed as early as 1969 in Switzerland, and have been built throughout much of the United Kingdom, West Germany, the Netherlands, and other countries under the auspices of the Fauna and Flora Preservation Society and Herpetofauna Consultants International. A private firm, ACO Polymer Products Limited, even specializes in the design and production of amphibian tunnel and fencing systems (see *Defenders* 10-89).

In Colorado, underpasses and deer-proof fencing were constructed on I-70, to channel movement of Mule Deer along a major migratory route, and have proved fairly successful. D.F. Reed and co-workers, however, found that many individual deer were reluctant to use a narrow underpass (3 meters wide and high, and 30 meters long), and recommended that underpasses be significantly wider. Biologists in various Western states are experimenting with one-way gates that keep most deer off the highway but allow deer that get into the highway ROW to escape. In southeastern Australia, Mansergh and Scotts constructed a funnel-shaped rocky corridor and two tunnels of .9 X 1.2 meters each beneath a road that bisected the breeding area of the rare Mountain Pygmy-possum (the only marsupial hibernator known). The design proved very successful in restoring natural movement and breeding behavior of the Pygmy-possums.

One of the more controversial applications of the underpass strategy has been in south Florida, for the sake of the Florida Panther. As noted above, roadkill is the leading known cause of death for this subspecies. Thus, when an extension of I-75 through the Everglades-Big Cypress Swamp was proposed, conservationists reacted with alarm. When assured by highway and wildlife officials that the new interstate would include fences and underpasses for Panthers, making it much less dangerous than the infamous Panther-smashing Alligator Alley which it would replace, many conservationists (including the Florida Audubon Society and the Sierra Club) came out in support of the new road.

How effective will these underpasses be in allowing for movement of Panthers and other wildlife? Eighty-four bridges are being constructed on the 49 miles of new I-75 in Collier county, 46 of them designed solely for wildlife movement. Each of these "wildlife crossings" consists of three 40-foot spans, for a total length of 120 feet with 8 feet of vertical clearance. Much of the 120 feet will



Erosion effects are clearly visible on this road built up Mount Hopkins in the Coronado National Forest. The road was cut to allow an astronomical observatory.

be under water, however, at least in the wet season. There is no guarantee that these crossings will be functional for Panthers and other large mammals. Even Thomas Barry, the project manager for the Florida Department of Transportation, admits that the ideal solution would have been to build a viaduct (elevated highway) across the entire stretch, but that this solution was deemed too expensive. As advocated by Florida Earth First!, the "ideal solution" would be to close Alligator Alley and all other roads in the Everglades-Big Cypress bioregion, and to allow no new roads. The desirability of this solution became more evident when we learned that the new 1-75 will include recreational access sites for ORVs, as recommended by the Florida Game and Fresh Water Fish Commission.

The Preferred Alternative

In evaluating various mitigation options for road-wildlife problems, it must be remembered that each is a compromise, addresses only a subset of the multiple ecological impacts of roads, and is far less satisfactory than outright road closure and obliteration. The serious conservationist recognizes that mitigation options should be applied only to roads already constructed, and which will be difficult to close in the near future (i.e., major highways). In such cases, construction of viaducts over important wildlife movement corridors (as documented by roadkills) and other critical natural areas should be vigorously pursued. Amphibian tunnels and other smaller underpasses also should be constructed where needed. But the bottom line is that no new roads should be built, and most existing roads — especially on public lands — should be closed and obliterated. This is the preferred alternative!

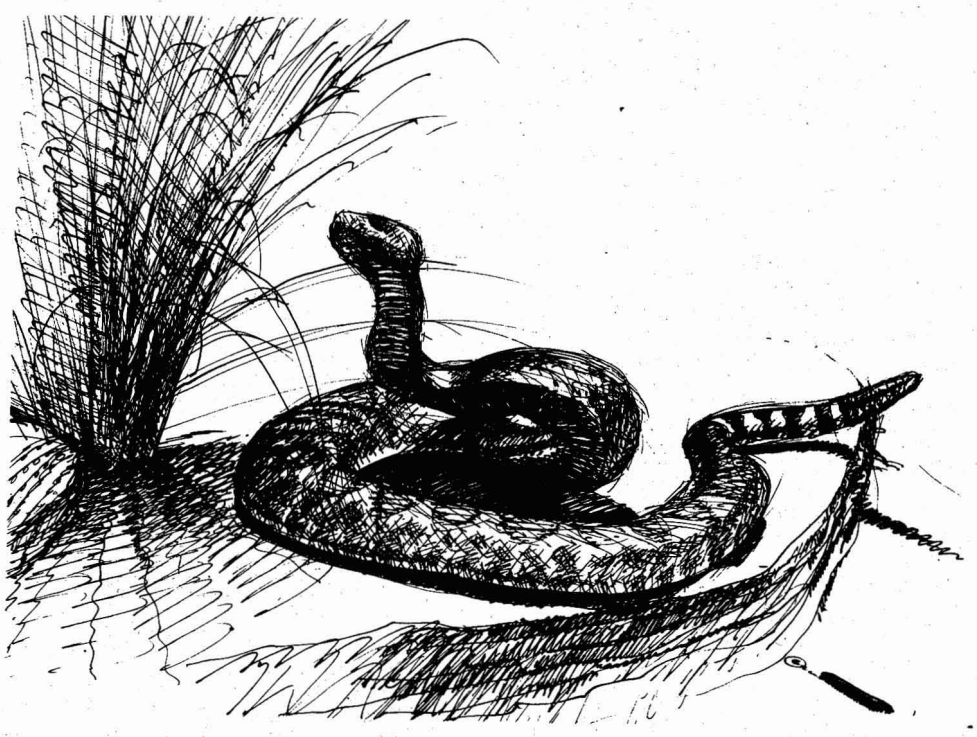
A priority system for determining which roads should be closed first is necessary to guide conservation actions toward the most deserving targets. The Grizzly Bear Compendium (Lefranc et. al. 1987, pp.145-46) specifies which kinds of roads should be closed on public lands to protect Grizzlies: Access roads should be closed after harvesting and re-stocking, temporary roads and landings should be obliterated, collector roads and loop roads should be closed in most instances, local roads should be closed within one season after use, and seismic trails and roads should be closed after operations have ceased. Bear biologist Chuck Jonkel has long recommended an aggressive road closure program on public lands. Public education on the rationale for closures, and strong law enforcement, must accompany road closure programs if they are to be effective. The Grizzly Bear Compendium recommends that road use restrictions, such as seasonal closures of roads in areas used only seasonally by bears, be placed on roads that cannot be permanently closed.

Florida ecologist, Reed Noss, in a series of publications, recommended that large core areas of public lands be managed as roadless "wilderness recovery areas" (a concept attributable to Dave Foreman). Buffer zones surrounding these core areas would have limited access for recreation and other "multiple-use" activities consistent with preservation of the core preserves. Buffer zones also would insulate the core areas from the intensive uses of the humanized landscape. These large preserve complexes would be connected by broad corridors of natural habitat to form a regional network. In keeping with this strategy, Florida Earth First! has demanded the closure of at least 90% of road miles on Florida National Forests, with the priority of closure to be specified through ecological studies at a landscape scale. The Forest Service has not replied.

As Keith Hammer has documented, however, road closures that appear on paper may not function as such on the ground. Keith found that 38% of the putative road closures on the Flathead National Forest in Montana would not bar passenger vehicles. The road miles behind the ineffective barriers represented 44% of the roads reported by the Forest Service as being closed to all motorized vehicles year-round. Gates, earthen berms, and other structures are not usually effective in restricting road use. This is especially true in more open-structured habitats, such Longleaf Pine and Ponderosa Pine forests, where motorists can easily drive around barriers. It may be that the only effective road closures are those where the road is "ripped" and revegetated (see Keith's accompanying article).

The Forest Service and other public agencies will claim that road closures, revegetation, and other restorative measures are too expensive to be implemented on a broad scale. But much of the approximately $400 million of taxpayers' money squandered annually by the Forest Service on below-cost timber sales goes to road-building. Road maintenance is also expensive. Virtually all of this money could be channeled into road closures and associated habitat restoration. This work would be labor-intensive, and providing income to the many laid off loggers, timber sale planners, and road engineers — for noble jobs, rather than jobs of destruction! Likewise, the huge budgets of federal, state, and county highway departments could be directed to road closures and revegetation, as well as viaducts and underpasses to minimize roadkill on roads kept open.

We cannot expect our public agencies to shift to a more enlightened roads policy without a fight. A lot of people make a lot of money designing and building roads, and exploiting the resources to which roads lead. Nor can we expect the slothful, ignorant populace to give up what they see as the benefits of roads (fast transportation, easy access to recreational areas, scenery without a sweat, etc.) for the sake of bears and toads. Education of the public, the politicians, and our fellow environmentalists about the multiple and far-reaching impacts of roads is critical. As Aldo Leopold noted, "recreational development is a job not of building roads into lovely country, but of building receptivity into the still unlovely human mind." The greatest near-term need is direct action in defense of existing roadless areas, and to close roads where they are causing the most problems for native biodiversity.



Diamondback is a professional ecologist and conservation biologist who contributes anonymously to the work of the Earth First! Biodiversity Project. Diamondback compiled an extensive bibliography for this article. For a copy, write the Biodiversity Project.

A Road Ripper's Guide to the National Forests

by Keith J. Hammer

With Special Thanks to:
Canyon Frog for fine artwork.
Caterpillar Inc. for backhoes and ripper blades.

Introduction

The US Forest Service maintains a system of logging roads 8 times larger than the Interstate Highway System and at an ecological price that defies analysis. Road construction is the most environmentally damaging aspect of the Forest Service's timber program. The agency plans to roughly double its 365,000 road miles in the next 50 years. The presence of roads often disqualifies areas from legal Wilderness designation and decimates *de facto* wilderness.

In order to comply with existing public law, regulations, and Forest plan directions, each National Forest in the Forest System must inventory its road system, analyze the impact of these roads, and implement appropriate road closures. The following Road Rippers Guide is based on proven, on-the-ground techniques and strategies that have secured road closures in various forests. We urge activists to apply the same techniques in National Forests in their area.

—Jasper Carlton

Introduction

I have written this guide for people who want to protect biodiversity by legally closing US Forest Service roads. We have two things going for us: 1) laws requiring the Forest Service to close and/or obliterate many of its roads, and 2) "community owned" bulldozers, backhoes, and front-end loaders maintained by the Forest Service. The key is to put our tax dollars and those dozers to good use!

Legally, the Forest Service is required to close and revegetate any road it wants to drop from its inventory. It can allow only a certain number of inventoried roads to remain open to avoid damaging wildlife, fish, water quality and other resources. This guide will help you force the Forest Service (FS) to close and revegetate abandoned roads. It also will help you close its roads if too many are open to motorized vehicles.

I have used the process outlined in this guide to force the closure and/or revegetation of well over 400 roads on the Flathead National Forest in Montana. Simply start, one road at a time, and you too can become a Roads Scholar!

Why Close Roads?

Roads pose one of the greatest threats to wildlife. For example, researchers know that an open road density of one mile of road per square mile of land reduces Elk habitat effectiveness to only 60% of potential. When open road density increases to six miles per square mile, habitat effectiveness decreases to less than 20% (Lyon 1984).

Black Bears in Southern Appalachia begin to avoid Forest Service roads when the density exceeds 0.8 miles per square mile (Brody 1984). Grizzly Bears generally avoid areas of 500 to 600 meters on either side of an open road (Aune et. al. 1986, Mattson 1986). Open roads contribute to Grizzly Bear mortality by poaching and, especially during the Black Bear hunting season, by mistaken killing (Holland 1985).

Roads have a similar, devastating effect on Gray Wolves. Studies show that wolves fail to survive in areas where the open road density exceeds 0.93 miles per square mile (Thiel 1985).

Sediment from open and closed roads damages the environment. In northwest Montana, for instance, 80-90% of the sediment produced by logging and road construction generally is attributable directly to the road (USFS 1985). The Flathead NF estimates that on one of its most pervasive and sensitive land types, one mile of road produces 98 tons of sediment, 80% of which reaches the stream bed (USFS undated). Meanwhile, the Forest Service estimates that a 10% increase in fine sediment deposition in spawning gravel decreases the spawning success of Bull Trout by 50% (USFS 1986a). The Bull Trout is a candidate for listing as a Threatened or Endangered Species.

Reducing the total road mileage left open to motorized travel or bare of vegetation is critical to preserving terrestrial wildlife, fish, aquatic invertebrates, water quality, and high-quality recreation and hunting experiences. The FS has a dismal record at keeping track of its roads and staying within legal road density limits.

That's why the forests need you and this guide. Take this guide along when you visit a National Forest. Help enforce a better road closure and road ripping program.

How the Forest Service Keeps Track of Roads

The Forest Service keeps track of roads via a combination of maps and computer data bases. These records are generally referred to as the Forest Transportation Plan. The Forest Service usually displays existing and proposed roads on larger-scale maps such as 1:24,000, 7.5-minute, topographic quads. Many of the roads shown on the larger-scale maps are displayed for public use on a smaller scale Forest Visitor or Travel Plan map. Road numbers on these maps should correspond to numbers in the computer data base.

The Travel Map and data base should indicate which roads are open and times that some are closed. You are likely to find, however, that many existing roads are not shown on the maps and computer inventories. Legally, the Forest Service must close and revegetate these abandoned roads so that they cease to function as roads. Hold that thought; we'll return to it later!

The Forest Service road inventory usually has two categories, long-term and short-term. Long-term roads generally are committed to future timber harvest access or other uses; the Forest Service has made a decision not to abandon them in the foreseeable future. Short-term roads are acknowledged by the Forest Service, even though it hasn't decided their fate (FSM 7711.2). In the interim, short-term roads must be included in the Forest Service inventory. Both long and short-term roads are also known as "system" roads.

Temporary roads are considered separate from short-term roads, and a decision to obliterate them immediately following their use for a timber sale or other project is made in the planning stage. They do not need to be assigned a number or entered into the Forest Service inventory (FSM 7711.2). Sloppy administration leaves many of these roads in use, while not showing them on maps or computer inventories.

What if the Forest Service Errs?

A faulty Forest Service road administration causes wildlife to suffer, and leaves damages unaccounted for. For example, the Flathead NF, by ignoring non-inventoried roads and off-road-vehicle (ORV) trails, once estimated that Grizzly Bear habitat effectiveness for its Noisy Face Geographic Unit was as high as 93% of potential. Forced to use my inventory, however, Forest Service and US Fish and Wildlife Service (FWS) biologists estimated that the bear's habitat effectiveness was as low as 40% of potential. This resulted in a "jeopardy" opinion from the FWS. To regain adequate Grizzly Bear use of the area, the FS closed, ripped and seeded all temporary and short-term roads, and closed critical spring and fall habitat areas to ORVs.

Public pressure forced the Monongahela NF in West Virginia to conduct a thorough road inventory, and it found three times the roads it 'thought it had (USFS 1986b)! I conducted a similar inventory in the Swan Valley of the Flathead NF (Hammer 1988) and found that the Forest Service failed to list 70% of the short-term and temporary roads in the study area. I also found that 80% of the "obliterated" and 64% of "abandoned and not driveable" roads inventoried by the Forest Service were driveable by conventional passenger vehicles. Since then, Forest Service machinery has been rallied to close permanently well over 400 roads.

Despite reasonably clear procedures outlined in laws and the FS Manual, the Forest Service continues to err. Looking over the Forest Service's shoulder helps to secure wildlife habitat. Knowing a little about the law and the process of road management will help you be more effective.

The Law and the Forest Service Manual

We've seen how the FS keeps track of roads and how it often errs. Now let's look at how it should legally inventory and manage roads.

The Forest Service wrote the Forest Service Manual (FSM) to restate laws and regulations in a form and language more suitable to on-the-ground implementation. The FSM guidelines must be consistent with the regulations and statutes from which they were derived. Hence, forest management is subject to a three-tier system: 1) statute, 2) regulation, and 3) manual.

The FSM requirements used in this guide partially stem from one provision of the National Forest Management Act (NFMA), a "statute" passed by Congress in 1976. The provision for revegetating abandoned roads within ten years is found at 16 USC 1608(b). This same provision is codified as a "regulation" at 36 CFR 219.27(a)(11).

We will use the simpler language of the FSM whenever possible. If you want to refer to the original language of the statute and regulations, you can ask any Forest Service office for a copy of the NFMA, or the regulations that guide NFMA implementation (36 CFR Part 219). You also may obtain copies of relevant parts of the FSM from the Forest Service.

Here's what the Forest Service Manual requires:

FSM 7703.1 — *Designate as forest development transportation facilities all existing and proposed roads, trails, airfields, or other facilities that provide access and mobility, and that are wholly or partly within, or adjacent to, and that serve lands administered by the Forest Service. Document each forest development transportation facility in the forest development transportation plan.*

Reestablish vegetative cover on any unnecessary road-way or area disturbed by road construction on National Forest System lands within 10 years after the termination of the activity that required its use and construction.

FSM 7711.2 — *Retain a short-term (not to include temporary) facility in the forest development transportation system and record it in the plan until all functions as a transportation facility cease or until it reaches its planned limited life and the occupied area is returned to resource production.* (Parenthesis in original.)

FSM 7705-9 — *Temporary Roads. Any short-lived road not intended to be a part of the forest development transportation system and not necessary for future resource management.*

FSM 2431.36b — *Use temporary roads only for short-term non-recurrent purchaser use.*

Seems fairly clear, doesn't it? Once you show the Forest Service a road not in the inventory, it must either close and revegetate the road, or add it to the inventory, account for its impacts and count it against any applicable open road density standards.

You cannot always force the FS to take one action over the other, but the more "forgotten" roads you find, the further you drive it into a corner. If the Forest already is laced with too many inventoried roads, the Forest Service will be reluctant to add your road to its inventory. It may opt instead to close and revegetate the road if it isn't needed in the foreseeable future.

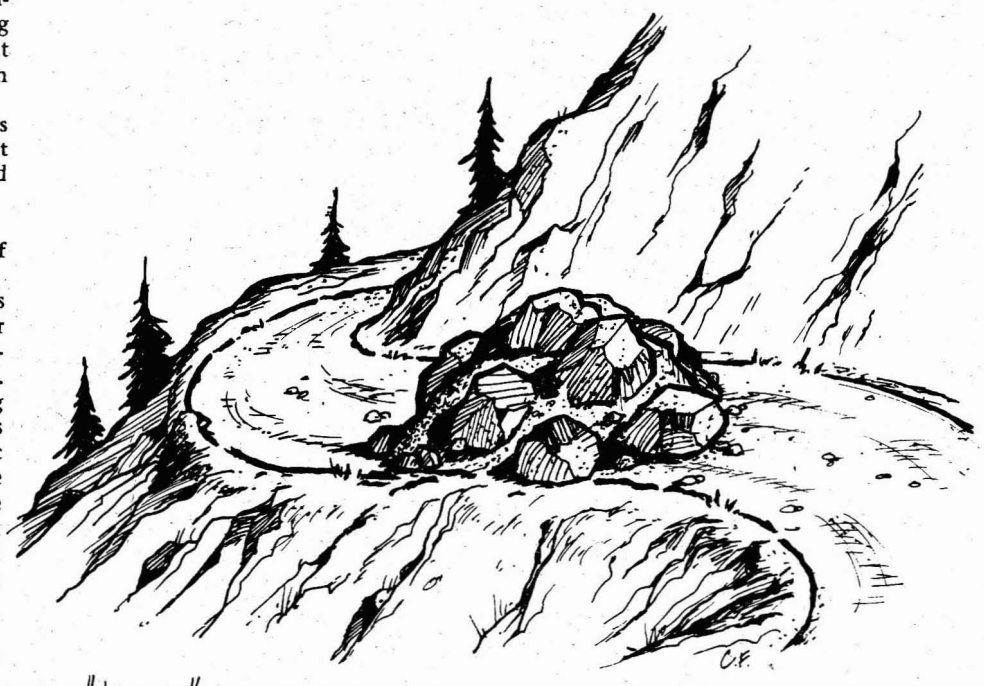
If the Forest Service decides to add the road to its inventory, and there are too many open roads in the area, you can force them to close your road or a similar one nearby. The bottom line to forcing road closures is backing the Forest Service up against a maximum allowable open road density or similar standard.

Limits on Open Road Densities

If your Forest Plan has a "standard" to limit the miles of road left without vegetation or open to motorized vehicles, it cannot be violated. Doing so would violate NFMA (16 USC 1604(i)), which requires that:

Resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System Lands shall be consistent with the land management plans...

The "land management plan" is the Forest Plan. The Forest Transportation Plan is an "instrument for the use" of the Forest, and must comply with the Forest Plan and its



standards.

Let's look again at the Flathead NF for an example of what this means. Ninety percent of the Flathead is classified as essential, occupied Grizzly Bear habitat. The Forest Plan applies a maximum open road density standard of one mile per square mile of habitat in these areas. Outside of occupied Grizzly habitat, Elk and other game habitat requirements become the limiting, though less stringent factor in determining these standards (which can range as high as 3.2 miles per square mile).

Given that many Forests may have open road densities in excess of six miles per square mile, even an Elk open road density standard like the Flathead's will help you achieve road closures. If your Forest Plan does not have a definitive open road density standard, you have other means to make the Forest Service respond to wildlife concerns.

Road closures are all the more warranted if your Forest contains habitat for sensitive, Threatened, or Endangered Species affected by the human use of open roads. A court injunction in Texas closed 500 miles of low standard roads near nests of Red-cockaded Woodpeckers (an Endangered Species). Administrative appeals and persistent citizen monitoring have closed or reclaimed hundreds of open roads in Grizzly Bear (a Threatened Species) habitat in the Flathead NF.

Violations of open road density standards in Threatened and Endangered Species' habitats arguably are Endangered Species Act (ESA) and NFMA violations. Research shows that too many open roads can

"TANK TRAP" CLOSURE

significantly disrupt the normal breeding, feeding or sheltering habits of Threatened and Endangered species such as the Gray Wolf and Grizzly (Aune et. al. 1986, Mattson 1986, Thiel 1985). Significant disruption is considered harassment (50 CFR 17.3) and is an illegal "taking" of the species (ESA, sections 3 and 9).

"Sensitive" and "management indicator" species follow immediately behind Threatened and Endangered Species in legal requirements for habitat maintenance. Elk, for instance, is an indicator species in many Forest Plans. The regulations implementing NFMA require that habitat for indicator species be maintained or improved (36 CFR 219.27(a)(6)). Because research has proven the negative effects of open roads on Elk (Lyon 1984), Forest Plan management requires road standards. Similarly, the Forest Service Handbook (a relative of the Manual), requires that FS actions "must not result in loss of [sensitive] species viability or create significant trends toward Federal listing as threatened or endangered" (FSH 2670.32).

Talk to biologists who research species sensitive to roads if your Forest Plan doesn't have open road density standards or the equivalent. Read the research and work to get the Forest Service to adopt an open road density standard. Scrutinize how the FS calculates densities if your Forest Plan does have a density standard. Do not let the FS include vast areas of unroaded habitat, or habitat unusable during the season in question, in the calculations. This scale effect "dilutes" the true open road density.

Elk studies in the Northwest show that a calculation area should not be larger than about 7000 acres. The area should not greatly exceed 5000 acres for Grizzly Bear. Familiarize yourself with pertinent literature and force the Forest Service to maintain scientific integrity in its calculations.

Six Steps to Close a Road

Included in this guide are two form letters you should address to the Forest Supervisor whose road you wish to close. These letters can be copied or you can write your own. The most effective approach is to file the Freedom Of Information Act (FOIA) request letter, compare the response you get with the requirements of the FSM (listed earlier in this guide), and then tailor your "demand" letter to best respond to law and circumstances. Here are some suggestions:

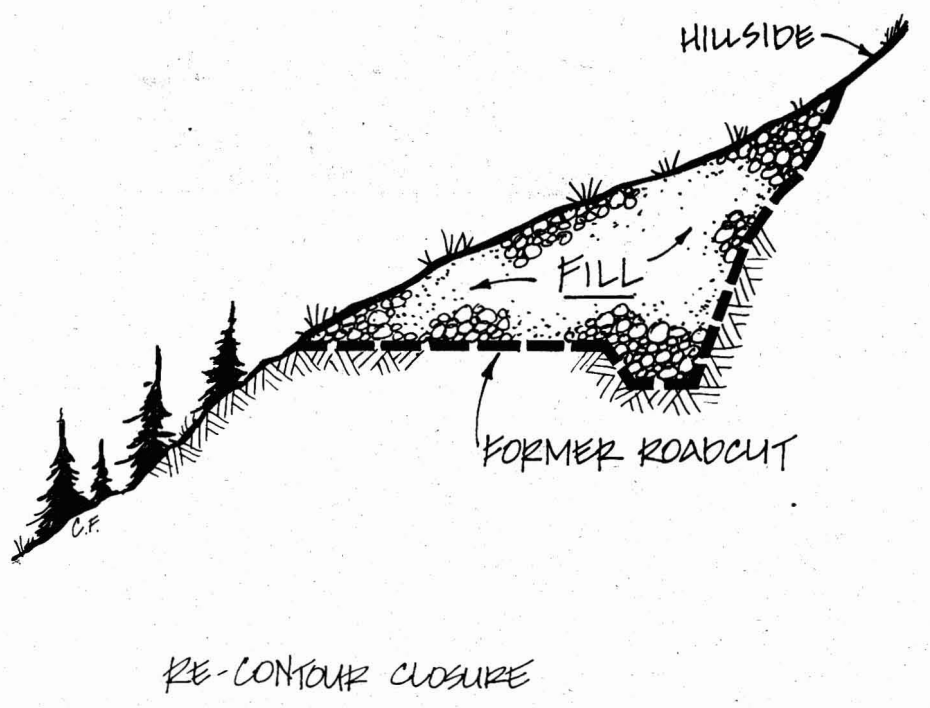
1. Get a Forest road map from the Supervisor's office. Regulations governing the use of off-road-vehicles require each Forest to have an ORV management plan (36 CFR Part 295). Many Forests combine their road management map with their ORV restrictions map in a Travel or Forest Visitor's Map. (You may want to get the "working" quad maps of existing roads used in the Forest Transportation Plan inventory. However, it takes many of them to cover a Forest.)

2. Keep "A Road Ripper's Guide" handy. Keep extra copies of the form letters and your Forest maps with you. Keep a camera handy—a picture is worth a thousand words! When you find a road that violates important wildlife habitat or looks like it shouldn't be there, check your Forest Map to see if it is shown on the map, and whether it is indicated to be open or closed.

3. If you find a road that is not on the map and is receiving motor vehicle use:
a) Carefully draw it on your map in a dark line that will photocopy well.
b) Note the Section, Township, and Range numbers shown on the map for the road's location.
c) Photograph the road and evidence of its use. Include in the photo a sign showing the Section, Township, Range and a number distinguishing this road from others in the same Section. This will help you keep track of your photos.
d) Note apparent use of the road, erosion, whether the road is revegetating or not, the type of habitat accessed by the road, etc.
e) Send in an FOIA request: 1) Photocopy the part of your map that shows the road; 2) highlight (in color) the road to remove any doubt about which road you are referring to; 3) write down the Section, Township and Range next to the colored road; 4) attach the photocopy to the FOIA request form letter or its equivalent; and 5) send it to the Forest Supervisor. Put the words FOIA REQUEST in the upper right of your letter and on the envelope. Keep a copy for your records!
WARNING: NOT USING THE FOIA MAY BE HAZARDOUS TO YOUR PROGRESS.

Written documentation is the best way to keep the Forest Service honest, and using the FOIA will force it to quickly respond. Personal visits to review maps and files are useful if you come away with copies of important documents. You should send in a written account of the important parts of your meeting and ask the Forest Service for a written response if it disagrees with your account.

4. If you find a road that is on the map and receiving motorized use, but should be closed:
a) Use the road number shown on your Forest Map and adapt the FOIA request form letter by eliminating the first three request items and reworking the opening paragraph.
b) Use the information that the Forest Service supplies and determine if you can use the Forest's road density calculations and standards to make a case for closure. If the road violates exceptionally important wildlife habitat, you may still make a case based on site-specific needs of wildlife species, regardless of road densities.



RE-CONTOUR CLOSURE

5. File the demand letter. Compare the information provided in response to your FOIA request with the FSM requirements listed in this guide. If the circumstances warrant one of the three demands listed in the demand letter, mark an "X" and send it in.

Don't be bashful—write your own letter if the form letter doesn't fit. You are only demanding what the law requires. Wildlife and streams need your firm support.

6. Follow through! If the FS does not respond to your FOIA letter within two weeks, or to your demand letter within a month, contact a member of your congressional delegation and ask him or her to get an answer. Don't be discouraged if the FS is slow or uncooperative. Go to the Regional Forester or Chief with your demand, or go public. An administrative appeal of the Forest's Travel Plan or Forest Plan will encourage the Forest Service to comply. Solicit the help of your friends and local environmental groups to build public support for wildlife-related road closures. The next section provides information to help you articulate your case.

Making the Case for Road Ripping

There is a wealth of information showing that permanent road barriers and roadbed ripping are more effective than gates. The public often opposes gates because they allow Forest Service "administrative" access to areas closed to the public. Permanent barriers are fair to everyone.

The FS often argues that road closures are expensive. A gate often costs a thousand dollars, but an earth or boulder barrier may cost less than a hundred. Properly installed permanent barriers are virtually impossible to breach, whereas gates can easily be winched, torched, driven around or driven through.

I conducted a study of 53 Forest Service road closures in the Flathead's Swan Valley and found that 38% were ineffective in fully restricting passenger vehicles. Fifty-one of the 53 closures were gates. Fifty percent of the ineffective gates were not kept closed and locked! Twenty-five percent were circumvented by "detours," and 10% were ineffective due to vandalism (Hammer 1986).

The Interagency Grizzly Bear Compendium (IGBC 1987) has made road closure recommendations:
*Roads can be closed by physical barriers, gates or other means, but obliterating the road is more effective than just posting or gating.
*Obliterate roads, including scarification, water-barring and revegetation.
*Pull downfall over the road.
*Reshape a length of the roadbed to natural conditions to reduce visibility from open roads.
*Remove culverts and bridges.

While these recommendations may appear to be Earth First!'s, they come from professional bear biologists, many of whom work for the Forest Service. Furthermore, FS regulations indicate that abandoned roads must be closed to ORVs, not just blocked off to conventional passenger vehicles.

ORVs cannot be used off Forest development roads in "a manner which damages or unreasonably disturbs the land, wildlife, or vegetative resources" (36 CFR 261.13(h)). Also, the Forest Service must "reestablish vegetative cover [on abandoned roads] ...until all functions as a transportation facility cease... and the occupied area is returned to resource production" (FSM 7703.1 and 7711.2).

How many times have we seen an abandoned road, perhaps blocked off at the entrance, barren and rutted by ORV use? While the Forest Service can rely on "natural" revegetation after closure (16 USC 1608(b)), it still has the legal duty to protect the soil and vegetation and to insure that the disturbed area quits functioning as either road or trail. This means closing an abandoned road to ORVs, if not to foot and mountain bike travel as well! A rugged job of road ripping and reseeding to native plants, shrubs, and trees is the most effective way to end the use of a "transportation facility."

Additionally, regulations prohibit, under penalty of law, an individual from "damaging and leaving in a damaged condition any [Forest Development] road, trail or segment thereof" (36 CFR 261.12(c)). Perhaps the Flathead NF, in opting to close and revegetate well over 400 roads it previously had claimed did not exist, simply learned a lesson from a logger who asked to close one such road in the Swan Mountains and was refused.

Apparently this logger figured that, because the road was not listed as a part of the Forest Development Transportation System, it was not protected by the regulations. He took his own bulldozer, ripped the road out, and then called the District Ranger to inform him that the road was gone. He was not arrested or fined. Indeed, the Ranger had him go back and finish the job by pulling a culvert out, allowing the stream to again function as a natural barrier to human travel!

A Last Word

Don't read Forest Service propaganda—request and read its laws, regulations and manual. They are more interesting and useful than they appear on the surface.

As Ed Abbey said, "Do not burn yourself out. Be... a reluctant enthusiast... a part-time crusader... get out there and hunt and fish and mess around with your friends, and ramble out yonder, and explore the forests...." And take this guide along!

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*US Forest Service. 1986a. Environmental Impact Statement on the Flathead National Forest Land and Resource Management Plan. Appendix EE, Figure 1.
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Date: _____
Forest Supervisor
_____National Forest **FOIA REQUEST**
_____
_____

Dear Forest Supervisor:

Please find enclosed a map and legal description (Section, Township, Range) of a road I found on the Forest you administer. This road does not appear on the Forest Travel Map/Visitor Map. However, it can be negotiated by a conventional passenger vehicle and shows evidence that such use is occurring.

Pursuant to the provisions of the Freedom of Information Act, please provide me with the following:

1. The number assigned to this road for the purposes of maintaining the "Forest Development Transportation Plan," as required by FSM 7703.1.
2. A Forest Service map on which this road is shown.
3. Records showing, for this road, the dates of construction and of the most recent use under contract, permit, or lease.
4. A copy of any open road density standards or other standards for managing road use and road use levels that apply to the area in which this road is located.
5. A copy of any calculations of open road density made for the area in which this road is located and an indication of whether this road was included in those calculations.
6. A copy of any road or area closure (to motorized vehicles) that applies to this road.

Thank you for your help. Pursuant to the FOIA (5 USC 552(a)(6)), I will expect a reply from your office within ten working days of receipt of this request.

I will not use the information provided under this request for profit. I will be glad to share the information with others. My use of the information you provide is primarily intended to benefit the general public by fostering improved public land management. I therefore ask for any search and duplication fees to be waived pursuant to 5 USC 552(a)(4).

Sincerely,

Name:_____
Address_____

Date:_____
Forest Supervisor
_____ National Forest
_____
_____

Dear Forest Supervisor:

Thank you for your response (dated _____) to my earlier FOIA request (dated_____). You have indicated that (the clause marked with an "X" applies):

___The road in question is not included in the Forest Transportation Plan inventory. Either you have indicated, or on-site inspection indicates, that the road is over ten years old. Pursuant to FSM 7703.1 and 7711.2, and 16 USC 1608(b), I demand that you permanently close this road to public travel by using permanent physical obstructions and by ripping, recontouring and revegetating the road bed and prism.

___The road in question is included in the Forest Transportation Plan inventory. You have provided information, however, which indicates too many open roads currently exist in the area containing the road in question. Pursuant to 16 USC 1604(i) and the standards for road management contained in the Forest Plan and/or the materials you provided, I demand that you permanently close this road to public travel by using permanent physical obstructions and by ripping, recontouring and revegetating the road bed and prism.

___The road in question already is subject to a closure order. However, my on-site inspection of _____ (date) concludes that use of the road by conventional passenger vehicles is occurring. While the fact that you have already determined that this road be closed is appreciated, I demand that it be effectively and permanently closed to motorized vehicles by using permanent physical obstructions and by ripping, recontouring and revegetating the road bed and prism.

Thank you very much for your attention to this road and my concerns. I ask that you respond in writing to this demand and indicate the course of action to be taken by your office.

Sincerely,

Name:_____
Address_____

Road Closures Required to Restore Ecosystems

As this tabloid has demonstrated, road closures are necessary to preserve natural diversity. If we are to return at least the cores of ecosystems to wilderness, the roads listed below must be closed and dismantled, along with developments associated with them, and natural slopes and vegetation restored. Earth First! demands the following:

Close all roads in National Parks. The use of motorized vehicles in our National Parks poses a major threat to natural diversity. Accordingly, we propose the complete prohibition of all private motorized vehicles within all National Parks. Non-polluting mass transit may be acceptable for some areas, but visitors should be encouraged to walk, ski or bicycle. [Bicycles, however, should be restricted in natural areas to roadways.] A few of the most urgently needed road closures in National Parks are listed below.

Add buffer zone protection to Wilderness Areas. A minimum 3 mile wide non-motorized buffer zone should be established around every designated Wilderness Area in the country. Public use of Wilderness is growing and recreational impacts are already excessive.

Close the roads listed below. These closures are essential first steps for restoring ecosystems.

Florida Keys Ecosystem: Completely close US Highway 1, south of Florida City to Key West. Dismantle the first series of bridges leading from the Florida mainland to Key Largo. All other bridges should be declared "non-conforming use" and allowed to deteriorate and collapse. These are probably the most important actions to prevent the continuing ecological collapse of this ecosystem.

Everglades/Kissimmee Basin Ecosystem: To restore this unique wetland ecosystem and to give the Florida Panther a better chance for survival in the wild, close I-75 (Slaughter Alley) from Naples to Fort Lauderdale, State Road 41 from Naples Manor to Sweetwater, State Road 29 from Everglades City to La Belle.

Smoky Mountains: Close the National Park Service road from Gatlinburg, Tennessee, through Newfound Gap in Great Smoky Mountains NP, to Cherokee, North Carolina.

Northern New England: In addition to closing all paved roads in the National Forests and parks, close the following: 1) The Kancamagus Highway (Rt.112) from Lincoln to Conway, New Hampshire. Until about 10 years ago, the Kanc was closed each winter. It bisects the White Mountain National Forest. 2) Mt. Washington Toll Road and the Cog Railway. These obscenities deface New England's highest mountain. 3) Debsconeag Road. This gives access to some of the most unscathed lakes and wilderness in Maine. 4) Baxter State Park road system. Governor Baxter left BSP as a "wilderness." Close the roads to realize his dream. 5) The Golden Road from Greenville to Millinocket, Maine. This major logging road cuts through wild, but degraded forests. 6) I-93 through Franconia Notch. Only opened about four years ago, it has made the wild northern reaches of New Hampshire and Vermont accessible to Boston Yuppies and condo builders. 7) Route 105 from North Stratford, NH, to Island Pond, VT. It bisects Vermont's Northeast Kingdom, an area of great wilderness potential (once Champion is evicted).

Road stoppage is also needed in New England: 1) Flat Mountain Pond Road, planned for the White Mountain NF allegedly for "handicap access," would open a wilderness pond to mentally handicapped ORVers. 2) The White and Green Mountain National Forests are threatened by new roads.

Greater Adirondacks Bioregion (New York): Close all roads in Adirondack Park, beginning with secondary roads branching off highway 30. [ed. note: Allow the erstwhile highways to be used as trails for mountain bikes and wagons. Since livestock will be barred from the region, wagons can be pulled by teams of former ORVers and snowmobilers, thus satiating their lust for the exhilaration of motion.—JD]

Greater Yellowstone Ecosystem (Wyoming, Montana, Idaho): Road closures needed immediately to protect the Grizzly Bear in Yellowstone NP include: Tower Junction to Canyon; Fishing Bridge to Canyon; and Ashton, Idaho, to Flagg Ranch.

Northern Continental Divide Ecosystem (Glacier/Bob Marshall): Close US Highway 2 from Columbia Falls to East Glacier, Montana; Going to the Sun Hwy in Glacier NP from Apgar to St. Mary, MT; Hwy 83 from Swan Lake to Seeley Lake, MT, to reunite the Mission Mountains with the Bob Marshall, Great Bear and Scapegoat Wilderness Areas; and the North Fork Road from Columbia Falls, MT to the Canadian border. These four are probably the most needed road closures for recovery and restoration of the Grizzly Bear and Gray Wolf in the Northern Rockies.

Selway Bitterroot/River of No Return (Idaho, Montana): Close and revegetate the Magruder Corridor, dividing the Selway Bitterroot Wilderness from the RNR.

Cabinet/Yaak Ecosystem (northwest MT): Close US Hwy 2 from Moyie Springs, ID to Libby, MT; State Road 56 from Rt.2 (at Troy) to State Road 200 near Heron, MT.

Gila/Blue/Aldo Leopold Wilderness Complex (New Mexico, Arizona): Close and revegetate the North Star Road.

The Biodiversity Project seeks help from regional activists in identifying roads most in need of closure, especially for the following ecosystems: South San Juans/Weminuche, Colorado; High Uintas, Utah; Las Padres, California; Ishi-Lassen, California; Siskiyous/Marble Mountains/Kalmiopsis, California and Oregon; Hells Canyon, Idaho and Oregon; North Cascades/Kettle Range, Washington; and Black Hills, South Dakota.

In response to its road closure program, the EF! Biodiversity Project has received recommendations for specific closures from every bioregion in the US — far too many to list in this tabloid. However, the one recommendation that impressed us the most came from an angry activist in Wisconsin: "You want some roads to close in the Nick-o-lay or Sha-wa-mi-gun? *Every last goddam one including state and federal highways.*" Amen!

—Jasper Carlton and Jamie Sayen

WHAT YOU CAN DO

1. Work to eliminate the Forest Service's road-building budget. Write your senators and representatives urging them to ban subsidized road-building on the National Forests. These funds should be spent on road removal, habitat improvement, and other ecosystem restoration efforts.

2. Close Forest Service roads in your area by implementing the techniques described in the enclosed Road Rippers Guide. If you need assistance, write Keith Hammer, FS Road Closure Coordinator, EF! Biodiversity Project, POB 2072, Kalispell, MT 59903.

3. Work for legislatively mandated road closures at local and state levels. Begin with studies documenting the ecological impacts of these roads.

4. Urge grassroots and mainstream environmental groups to become more forceful in road closure campaigns — to go for the pavement!

5. Insist that land-use planning agencies close roads, improve transportation plans, and implement remedial actions for wildlife at existing problem sites. If a road closure is not immediately possible, insist upon the installation of effective fencing or speed bumps (effective in reducing car speeds and wildlife mortalities) or tunnels.

6. Monitor the planning and activities of your state department of transportation. Actively oppose all new roads that would impact natural areas or wildlife corridors.

7. Stop using private motorized vehicles.

8. Use the biological information in this tabloid for responding to agency environmental assessments and environmental impact statements. A complete bibliography of the references used in writing this tabloid is available from the EF! Biodiversity Project.

9. Advise the EF! Biodiversity Project of any confirmed mortalities and movement corridors of any Threatened or Endangered Species along the Interstate Highway System.

10. Help a toad across the road! Brake for a snake, and any other wild critter.

11. Tell government agencies to close roads. Write to National Park superintendents urging them to close roads that impact rare, Threatened and Endangered species. Request that they require Park visitors to defer to wildlife concerns. If the superintendents do not honor your request, press the issue. Circulate a petition. Write letters to the editors of newspapers. Attract the news media. Tell your Congresspersons about the issue. Send them copies of agency correspondence and your petitions.

12. Consider legal action. Find a *pro bono* attorney or a competent para legal. Hundreds of roads on our public lands are illegal, in conflict with the Endangered Species Act and other laws and regulations. Force the agencies to do their job, even if it is politically unpopular locally. If necessary, *sue the bastards!*

13. Attend meetings of your local county commissioners and work for a decrease in the county road budget as well as the canceling or reworking of specific road-building or reconstruction proposals. Gathering signatures on a petition and being present can help stop a gravel county road from becoming a paved "farm to market" road.

14. Reduce the amount of timber cut on the National Forests. This, in turn, may reduce the amount of money transferred from the Federal Treasury to the counties where the National Forests are located. By law, 25% of a National Forest's gross receipts from timber sales must be turned over to the counties as "payments in lieu of taxes," for use in their road and school programs.

15. Write to Senator Wyche Fowler and support his efforts to decrease the Forest Service's road-building budget. Fowler's amendment for the Fiscal Year 1990 appropriations bill, for example, would cut the Forest Service road budget by $65 million.

16. Take direct action! Organize a demonstration that draws public attention to the need for road closures.

17. Distribute copies of this Road Tabloid. Contact the Tucson *EF! Journal* office or the EF! Biodiversity Project for extra copies.

18. Support the work of the EF! Biodiversity Project with your financial contributions: POB 4207, Parkersburg, WV 26104-4207. (Contributions to the EF! Foundation and earmarked for the Biodiversity Project are tax deductible.)

Thanks, and go close a road!

Addresses:

*US Senate, Washington, DC 20510
*US House of Representatives, DC 20515
*Director, National Park Service, Dept. of Interior, DC 20240
*Chief, US Forest Service, POB 96090, DC 20090-6090
*Secretary, US Dept. of Transportation, Nassif Bldg, 400 7th St SW, DC 20590

EARTH FIRST! BULLETINS

TREKKIN' TURTLE ISLAND: PRESERVING APPALACHIAN WILDERNESS. EF!ers from New England will hike the Appalachian Trail this summer dressed as extinct and extirpated species, to promote the idea of Big Eastern Wilderness. We hope to reach out to the over 3,000,000 people who use the Trail each year. Come Trek with us! We need help creating costumes, providing logistical support, and supplying equipment. A group left on Earth Day from Springer Mountain, Georgia. Contact John Gareschy, Box 274, Bates College, Lewiston, ME 04240. Another bunch will start in Maine in late June and head south. Contact Bill Knowles, 8 Woodknoll Drive, North Hampton, NH 03862. A larger group will start on the Connecticut/New York border and migrate northwards. Contact Julia Reich, POB 1449, Hampshire College, Amherst, MA 01002. For more details on PAW or the hike, see *Earth First!* May 1987, "Appalachian Wilderness: Vision and Reality" and the Connecticut Valley EF! journal, the *Glacial Erratic*, winter 1989-90, "Bring Back the Missing Links: Critters Plan AT Hike."

DO YOU KNOW A LAWYER WHO CARES ABOUT NATURAL DIVERSITY? The EF! Biodiversity Project and grassroots activists often need the assistance of local attorneys in their defense of imperiled species and ecosystems. If you know an attorney in Ohio, West Virginia, Florida, North Dakota, or Nevada who would be willing to provide free legal assistance (pro-bono services) to protect endangered species, please refer her or him to the EF! Biodiversity Project or send us her or his name and address and we will promptly forward information about the Project and its efforts in the aforementioned states: Jasper Carlton, EF! Biodiversity Project, 2365 Willard Rd, Parkersburg, WV 26101-9269.

GABEF! RENDEZVOUS. Greater Adirondacks Bioregion EF! will hold a Rendezvous May 18-20. Call Tom Carney (GABEF! contact; see Directory) for information.

ARCATA ACTION CENTER OPENS California Northcoast activists have a new set of offices for Forests Forever, Humboldt Rain (the rainforest group), and Global Walk. Stop by, get Forest Forever petitions and help qualify the initiative for the Nov. 1990 ballot. Volunteers and donations of all kinds are needed: Office equipment, computer, printer, TV, VCR, carpeting, paint, wood sculptors and artists. We are at 931 I Street, Arcata, (707) 826-7140.

NORTHWEST RENDEZVOUS in Hell's Canyon, May 25-28. Music, workshops and partying EF! style. come discuss the recent spiking renouncements, deep canyon ecology, erf day, the feds and new trends in cattle-logging. Get Darryl Cherney's, Judi Bari's, Dana Lyons', and maybe even Joanne Rand's autograph! See Hell's Canyon, the deepest canyon in North America. WA, OR, MT, and northern CA EF!ers gather to bring the Idahoans out of hiding. Come one, come all, bring $10 to help with expenses, bring food for the group kitchen, bring your kids and your dogs (under control, of course).

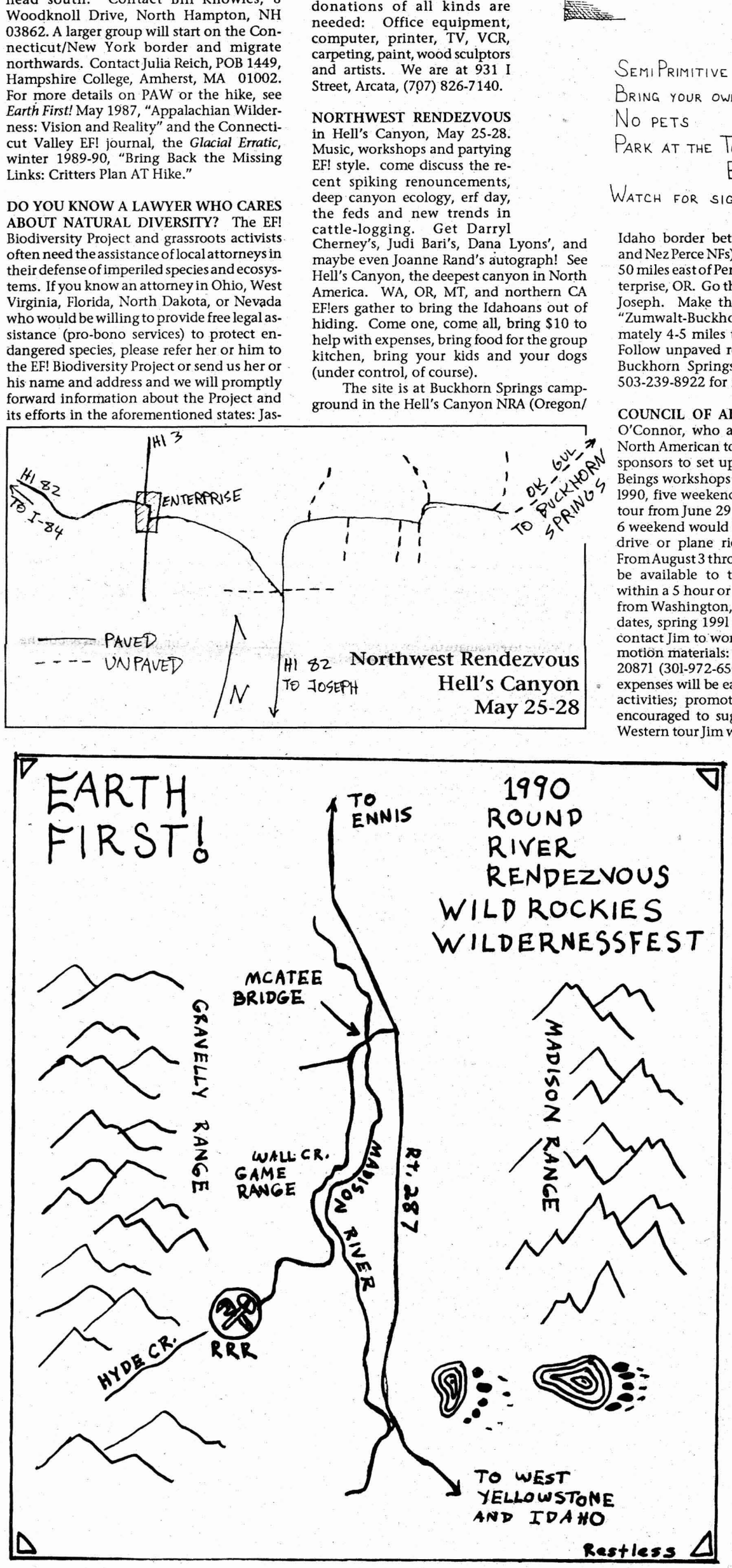
The site is at Buckhorn Springs campground in the Hell's Canyon NRA (Oregon/Idaho border between Wallowa-Whitman and Nez Perce NFs). Take I-84 approximately 50 miles east of Pendleton, OR to HI 82 to Enterprise, OR. Go through Enterprise towards Joseph. Make the only left turn (marked "Zumwalt-Buckhorn Springs"). Approximately 4-5 miles turn right (look for sign). Follow unpaved road for about an hour to Buckhorn Springs campground. Contact 503-239-8922 for further info.

COUNCIL OF ALL BEINGS TOUR. Jim O'Connor, who assisted John Seed on his North American tour last year, is looking for sponsors to set up weekend Council of All Beings workshops throughout the year. For 1990, five weekends are open for a Western tour from June 29 through July 29 (the July 6 weekend would have to be within a day's drive or plane ride from Bozeman, MT). From August 3 through mid October, Jim will be available to to lead CAB's anywhere within a 5 hour or so car, train, or plane ride from Washington, DC. If interested in these dates, spring 1991 dates, or any other dates, contact Jim to work out details and get promotion materials: POB 117, Clarksburg, MD 20871 (301-972-6509). All proceeds above expenses will be earmarked for Earth saving activities; promoters and participants are encouraged to suggest recipients. On the Western tour Jim will do CAB's during weekdays also. John Seed, who has little time these days to personally lead CAB's, says that "Jim's a natural for leading these workshops. His resolve and experience and creativity get great results. I once saw him with no prior notice do the Evolutionary Remembering ritual with 150 kids, ages 7-14, who were cornered unexpectedly by their camp counselors just minutes before dinner time. With the smell of dinner off in the wings, Jim nevertheless led them through guided imagery that had them an hour and a half later, dinner still waiting, with green fire in their eyes and humming celestial tunes."

JOHN SEED'S U.S. SCHEDULE

June 8-12 Council of All Beings & training with Joanna Macy, San Francisco (415) 594-9981
June 13 Esalen Institute, Big Sur, CA (408) 667-3000
June 14-18 ReEarthing, Big Sur, CA (408) 667-2260
July 8-11 EF! Round River Rendezvous, MT
July 13-15 Council of All Beings with Jan Fowler, Naropa Institute, Boulder, CO (303) 440-8679
July 15-19 ReEarthing Workshop, Boulder, CO (303) 444-9537
July 20-21 Faculty "The Earth and Its Inhabitants" Conference, Omega Institute, NY (914) 338-6030 (till May 17) 266-4301 (after May 17)
July 23-27 ReEarthing Workshop with Harriett-Rose Meiss, Brooklyn, NY (718) 768-8659
July 27-30 Council of All Beings and training, Rye, NY (914) 967-6080

NATIONAL FOREST REFORM POWWOW The 5th annual conference of the Forest Reform Network will be held May 25-27 at Camp Green Cove, Tuxedo, NC. This will be a working conference for activists, and will feature Ned Fritz, Jeff DeBonis, Peter Kirby, Randall O'Toole, Brock Evans, Bill Oliver, and others. An EF! caucus will be held during the Powwow. There is a charge for the weekend, but some work scholarships may be available. For more information, contact the WNC Alliance, 704-258-8737.



1990 ROUND RIVER RENDEZVOUS

July 9-15, Hyde Creek, Gravelly Range, Montana

Directions

From the South: Take Route 20 north from Idaho Falls to Route 87 to Route 287. Go about 20 miles north to McAtee Bridge on left. Cross bridge, take immediate left. Follow signs about 5 miles across Wall Creek State Game Range to RRR.

From the West: Exit I-90 at Cardwell (exit 256) to Route 287. Proceed to Ennis, go about 17 miles south on 287 to McAtee Bridge on right. Cross bridge, take immediate left. Follow signs about 5 miles across Wall Creek State Game Range to RRR.

From the East: Take the Three Forks exit off I-90. Take Route 287 to Ennis, and go about 17 miles south on 287 to McAtee Bridge on right. Cross bridge, take immediate left. Follow signs about 5 miles across Wall Creek State Game Range to RRR.

Other info:

PACK IT IN, PACK IT OUT. The RRR Committee will not be responsible for your trash. Plan to recycle it yourself.
BRING HOMEBREW BEER!! Try to avoid a lot of cans and bottles. There will be beer kegs available at the Rally, so bring a mub. If you want a keg of Montana-brewed Kessler for anytime before the rally, contact Jake Jagoff, PO Box 7891, Missoula, MT 59806. Do it ASAP.
BRING BLANK T-SHIRTS. There will be silk-screening available at the RRR.
EARLY CONTRIBUTIONS to pay for the RRR will be accepted. Mail to: 1990 RRR, PO Box 6151, Bozeman, MT 59715.
CARPOOL COORDINATORS: National coordinators are Carla and Tom, (406) 585-9607, PO Box 6733, Bozeman, MT 59771-6733. The only regional coordinator so far is in the Northwest: Jim Flynn, Portland, (503) 239-8922.

For more details, see the last (March) issue of the *EF! Journal*.

OHIO RIVER RENDEZVOUS

MAY 25-28 1990 WAYNE NATIONAL FOREST

ATHENS DISTRICT NEAR BURR OAK

four days of music, workshops, celebration, ranting & action planning

featuring the music of DAKOTA SID CLIFFORD and others!

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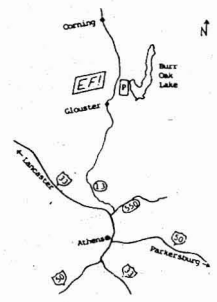
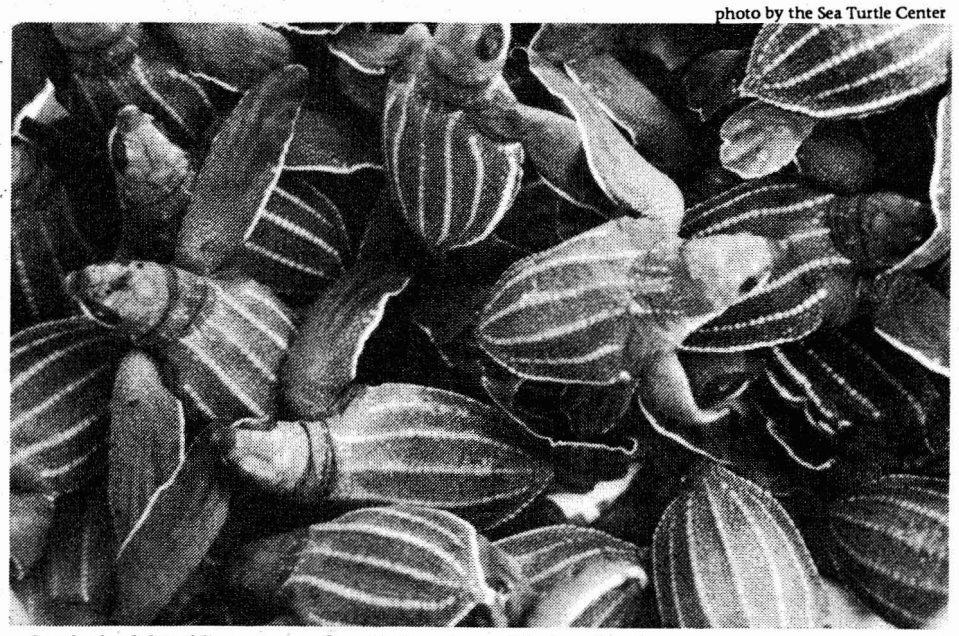


LEATHERBACK TURTLES SLAUGHTERED IN MEXICO

photo by the Sea Turtle Center



Leatherback hatchlings emerge from their nest on a Mexican beach.

by Kim Cliffton

The 15th century Spanish explorers' reports of sea turtle flotillas impeding the progress of their ships seem incredible to us today, now that nearly 500 years of indiscriminate exploitation of sea turtle meat, eggs, and hides have had a predictable result. Yet even into the mid-20th century, Mexico claimed the world's largest breeding populations of Olive Ridley (*Lepidochelys olivacea*), Kemp's Ridley (*Lepidochelys kempi*), and East Pacific Green Turtles (*Chelonia mydas agassizi*, hereafter referred to as Black Turtles).

Sadly, the scientific discovery of these enormous herds of sea turtles seems to have come in the twilight of their existence on Earth, the international trade in reptilian leather having decimated their ranks. In 1980, sea turtle biologists were stunned by a discovery that doubled the known world population of Leatherback Sea Turtles overnight. An estimated 30,000 female Leatherbacks were nesting between Baja California Sur and the Isthmus of Tehuantepec in Oaxaca. Today, revised estimates suggest that 136,000 Leatherback Turtles swim the world's oceans.

Of the seven recognized species of sea turtles in the world, six occur in Mexico. Yet very little is known about their natural history beyond the confines of the nesting beaches. Once turtles return to the sea, they virtually disappear from the domain of scientific inquiry. How long do they live? How many years to reach sexual maturity? What percentage of hatchlings survive to adulthood? Where do the turtles pass their first years of life? The many unanswered biological questions about these marine reptiles are stumbling blocks in international turtle conservation.

Until recently, Mexico's Leatherback Turtles (*Dermochelys coriacea*) were relatively lucky. Their meat was considered too oily, and their leather had never been used in the commercial production of handbags, belts, suitcases, boots, and other luxury items favored in the international trade in reptilian leather. But, as with the other species, eggs of the Leatherback have been sold on the black market, believed by many to be potent aphrodisiacs. Besides the reputation for sexual enhancement that sea turtle meat, blood, eggs, and even dried penises have acquired, many Mexicans consider sea turtle meat to be superior food, having excellent flavor. Uncontrolled harvesting of sea turtle eggs poses a real threat to the turtles' survival, although egg laying is one stage of sea turtle reproductive biology that has evolved to withstand incredibly high mortality. When extensive egg loss is coupled with unnatural extermination of breeding adults, rapid and possibly irreversible decline of the species is likely.

Leatherback Turtles are big, some specimens reaching 1300 pounds and carapace lengths of nearly six feet. If 30-40% of their gross weight is protein-rich meat, then even an average turtle weighing 600 pounds would provide a bonanza for poor coastal dwelling people. Such is the case today on the coast of Guerrero, Mexico, where Leatherbacks are killed and sold locally in markets. Several years ago a sea turtle shell craftsman from Kino Bay, Sonora told me he had seen a freezer truck at Guaymas, Sonora heavily loaded with the meat of Leatherback and Loggerhead turtles captured in Baja California. Both of these species were previously considered inedible by many Sonorans and Sinaloans, who are otherwise fanatics for sea turtle meat and products. Black Turtles have always been the preferred edible species, owing to the superior taste, color, and texture of their meat. However, with the near disappearance of Black Turtles from their ancestral feeding grounds in Sonora, Sinaloa, and Baja California, and increased protection of their breeding grounds in Michoacan, sources of cheaper and more abundant turtle meat were being explored.

November is the beginning of the Leatherback breeding season at the 18 kilometer long nesting beach between the Rio Nexpa and La Manzanilla (hereafter referred to as El Mexiquillo). I went there hoping to see the as-yet-undescribed courtship and mating of these animals. Twice in the past few years I had heard of sightings of Leatherback matings in Michoacan. Prior to that, there was only speculation as to how, where, and when mating occurred in this species. Peter Pritchard, a renowned expert on turtles, had mused that they probably mated "at the bottom of the ocean." This is not a totally unwarranted speculation now that Leatherbacks have been recorded diving to depths of 4000 feet, the deepest known dive for any air-breathing vertebrate.

The only apparent Leatherback matings previously reported were similar to Black Turtle matings (male on top of female, grasping her with his front flippers, and floating on the surface just outside the breakers of a mating beach). This sighting of Leatherbacks so close to shore was an extraordinary event, and probably a freak one, or surely such obvious behavior would have been seen before at previously studied breeding grounds (e.g., in Surinam and Malaysia).

During the morning, female Leatherbacks can be seen lying quietly on the surface, about a mile offshore, resting for a few minutes between dives. Generally by noon they stop coming to the surface and stay submerged for the remainder of the day, sometimes becoming active on the surface later in the afternoon or evening. Although slow starting, Leatherbacks can swim powerfully once under way, leaving a diver in their wake.

My tactics upon spotting a floating Leatherback are to maneuver the motorboat at relatively high speed to within 20 meters in front of the turtle, then dive in. I am attached to a 200-foot hookah hose and air compressor that allow me to follow the turtles down as they (almost inevitably) head for the bottom. The turtles don't turn easily so I get a good look at them as they swim past.

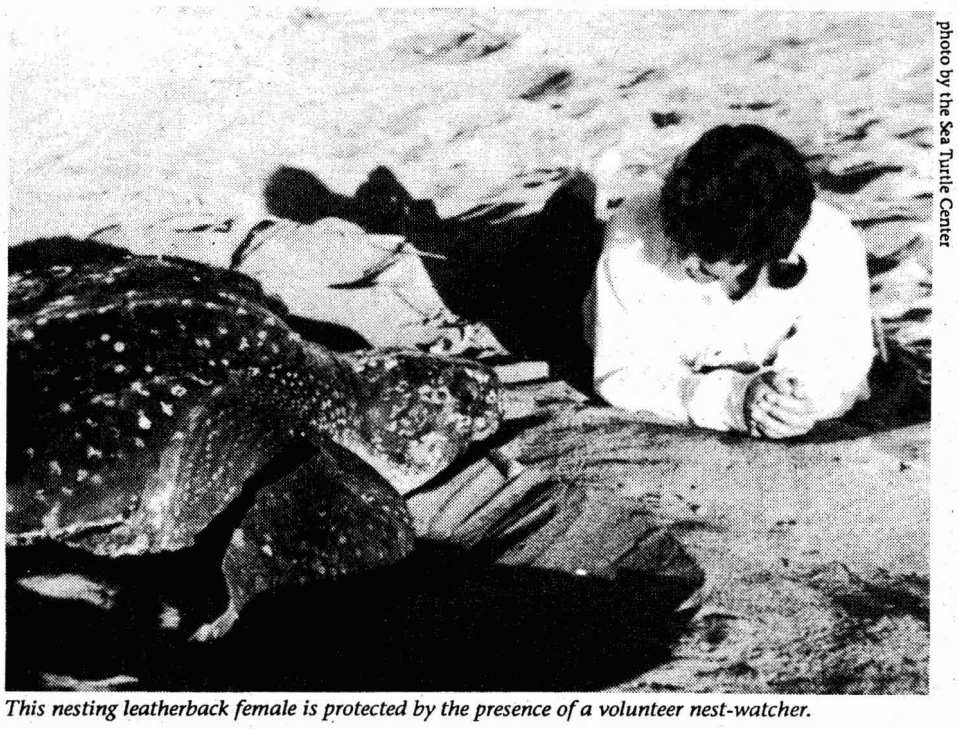


photo by the Sea Turtle Center

This nesting leatherback female is protected by the presence of a volunteer nest-watcher.

I follow them down until they enter a murky layer — often 100 feet below the surface — which may represent the demarcation of a thermocline. Once they enter the turbid water they apparently feel safe and that makes it possible to get quite close to them as they continue to spiral slowly down. Generally being a mile or more offshore I would lose them as they continued their descent. But on one occasion I began to make out white spots below me — sea shells — and was surprised to have reached the bottom. I checked my depth gauge at 180 feet, as the turtle settled onto the sandy sea floor.

In November 1988, I finally saw Leatherback courtship at El Mexiquillo, Michoacan. When I swam with the female Leatherback on this occasion, she remained on the surface instead of diving. Circling beneath her, I saw another Leatherback nearby. I had never seen two so close together offshore before. The second turtle had a longer tail, which is consistent with the male anatomy of other turtle species. The female Leatherback thrashed the water with her powerful flippers, apparently annoyed by the male's close proximity. This is the same kind of aggressive behavior female Black Turtles show their male counterparts when the males approach them outside of their sexually receptive period.

This was the first male Leatherback I had seen in several years of swimming with these animals. He turned and descended toward me. Like a male Black Turtle, he checked me out, demonstrating a disdain for potential danger characteristic of breeding male sea turtles. Female Black and Leatherback Turtles consistently flee at the sight of a diver. Breeding male turtles lack such caution, which is one reason they are so vulnerable to human hunters in and around the breeding grounds.

Hoping to observe and photograph more of these breathtaking sights, Tucson herpetologist Steve Hale and I traveled to El Mexiquillo in 1989. The village of Caleta de Campo, Michoacan is situated in a shallow bay, and boats must enter the sea via a nasty set of breakers. We had a 12-foot Zodiac and being unfamiliar with the area, we had a few tense moments before catching a lull in the set and darting out over the incoming swell. We headed west along the coast hoping to spot some turtles, and then return before dark.

As we approached the mouth of the Rio Nexpa, our motor began to flag. I began conjuring up dark visions of spending the night anchored uncertainly near the west coast's premier surf break, which we could hear thundering ominously in the distance. We came about, and began limping back along the coast when we spotted a late *panga* still out fishing.

Typically, *pangas* are 25-foot, open-hulled, fiberglass boats powered by 50-85 h.p. engines. The young boatmen, upon hearing of our difficulties, asked us jokingly if we "weren't in a hurry." They had some handline fishing yet to do. We could see that they had butchered an Olive Ridley Turtle, and were using it for bait. As we watched, they pulled in a few kilograms of fish (*Lutjanus* sp.), complaining all the while about how poor the fishing had been. Finished for the evening, they jettisoned the remaining 15-20 lbs. of turtle meat (an adult breeding Olive Ridley weighs about 60 pounds), keeping the eggs to eat or to sell later on the black market. This is the *modus operendi* up and down the Pacific coast of Mexico, where sea turtles are commonly killed for bait in most of the commercial operations, including the shark fisheries.

With darkness falling, the fishermen took us in tow. When we reached the *embarcadero* (landing), we faced a heavy breaking surf. Not wanting the boats lashed to one another on the run to the beach, we handheld them together as the pilot waited patiently for a *callada* (calm). When a break in the sets finally came, the boatman opened the throttle. I doubted that we could hold on as we plowed toward shore, but letting go in mid-stream would have been disastrous. We landed on the beach safely, and I felt deeply indebted to these young men for having risked their own equipment to ensure our safety. I offered them money, food, even beer in repayment, but they scoffed at me and walked home. I was faced with my usual dilemma. On the one hand I admire the Mexican fishermen's courage and generosity, while on the other I deplore their wanton disregard for and senseless wasting of dwindling marine resources.

After dragging our equipment above the high water line, we walked over to a restaurant for dinner. Over a splendid meal of fried fish, potatoes and sliced raw vegetables, a shocking tale was told to us by a young Mexican fisherman, whose name I have changed (for his safety) to José.

"Don't tell anyone I told you this," he said, looking back over his shoulder, "but there are nets in front of the nesting beach at El Mexiquillo."

Staring in disbelief, I asked, "What kind of nets?"

"Long nets, of huge mesh," he replied. "They are killing them for the hides." The 1-2 km-long nets José described were designed specifically to entangle and drown Leatherbacks, the large mesh making it easier for the fishermen to untangle the 700 pound carcasses.

I have witnessed some horrible sea turtle slaughters, including the industrialized "debraining" of 500 Olive Ridleys per day in San Augustin, Oaxaca; but I was caught off guard by this revelation. The Leatherbacks had seemed immune to the grisly fate of their cousins, the Ridley, Black and Hawksbill Turtles. In fact, Leatherback populations appeared to be expanding in Mexico. Now, fishing cooperatives on the Michoacan coast, including the cooperative of Caleta, were killing Leatherbacks, skinning them and throwing the meat into the sea. The turtles' eggs, stripped from the oviducts and floating in pools of maternal blood, were also collected for sale. The middlemen, from Manzanillo, Colima, picked up the crude salted hides offshore with a 130 h.p. *panga*, to avoid possible (but unlikely) interception at sea and the occasional roadblocks set up by the Mexican army and marines along the coastal highway.

José said, "They have already killed many turtles." After returning across thousands of miles of ocean to nest on the sandy beaches of their birth, they are welcomed home in the deadly embrace of plastic monofilament nets.

José said that most local fishermen were disgusted by the illegal slaughter. Since only two *pangas* from Caleta were involved, only a few men in the village were profiting while all the fishermen were liable if the contraband was discovered by the Mexican government. The fishing cooperative could lose its annual quota of Olive Ridley Turtles, a small but economically important fishery. Even more devastating could be the government's refusal to continue financing equipment essential for the development of other fisheries. However, nobody was about to "*meterse en problemas*," (look for trouble) with the smugglers. In a violent land, such as the coast of Michoacan, gaining anyone's enmity is unwise and often fatal.

We arranged with José to look for Leatherbacks, though he didn't think we'd have much luck. The next morning we set out for El Mexiquillo. We cruised offshore the entire 18 km length of beach, turned around, and zig-zagged back over prime breeding Leatherback habitat. José thought he saw one turtle; Steve and I didn't see any. José suggested that we continue our search east of

continued on next page

Captive Breeding Plan Threatens Florida Panther

EF! Challenges Proposal!

by Jasper Carlton

Developers in Miami and Naples clinked champagne glasses together and deer hunters in south Florida hooped and hollered when the press reported that the state and federal Florida Panther Interagency Committee had approved an extensive captive breeding program for the Florida Panther in commercial zoos. They perceived the action as the beginning of the end for the Panther in the wild, and with its eventual demise the lifting of development and recreational constraints on what little remains of Florida's dwindling wilderness.

The current wild population of the Florida Panther (*Felis concolor coryi*), which once roamed throughout the Southeast, is estimated at only 30-50, concentrated in the Everglades and Big Cypress regions of south Florida. The Panther was listed as an Endangered Species by the federal government in 1973 and is also protected by Florida law. Nevertheless, Panther habitat has been allowed to severely decline in the past 17 years, human-caused mortality factors have not been brought under control, and the recently discovered mercury contamination in some Panther areas may constitute a serious threat to the species' survival. In short, the Florida Panther Recovery program has not prevented the continuing demise of the subspecies and its habitat.

The rationale for this captive breeding program — preventing further genetic inbreeding and producing increased Panther numbers — came as no surprise to environmentalists. A similar scenario has been witnessed with the Mexican Wolf, California Condor, Black-footed Ferret and other species. According to James W. Pulliam, the Southeast Regional Director of the US Fish and Wildlife Service (FWS), "Without the implementation of a species survival plan (captive breeding), we can expect to see the extinction of the Florida Panther in 25-40 years, or possibly sooner in the event of an outbreak of disease in the remaining population."

Although the FWS press release implied that only 8 animals would be taken from the wild each year (6 being kittens), beginning immediately, a careful analysis of the 255 page *CBSG Florida Panther Viability Analysis and Species Survival Plan*, which the EF! Biodiversity Project obtained under a Freedom Of Information Act request, revealed that a different scenario is likely to occur.

Though it is unclear whether this new proposal is intended to serve as a contingency plan for the removal of all Florida Panthers from the wild, it certainly implies that the FWS has the authority to follow this course of action under a broad (and unlimited) range of conditions including disease and natural disaster, or in an all out effort to capture sufficient founder stock genetic representation. The FWS believes that there remain only 19 genetically unrelated Panthers in the wild in Florida, and the agency would like to capture every one of these. In other words, under this new plan, all known Florida Panthers could be taken from the wild at any time and a concerned public would have no recourse.

The Earth First! Biodiversity Project strongly disagrees with this approach since it would violate the mandate of the Endangered Species Act (ESA) if other alternatives were not first attempted that would maximize the long-term survival opportunities of the Panther in the wild. Programs to more rapidly increase the prey base, the termination of hunting in all occupied habitat, supplementary feeding, effective road closures or speed bumps instead of unenforceable speed limit reductions, wildlife underpasses, genetic enrichment provided in the wild, and habitat restoration efforts should be pursued prior to the removal of healthy animals from the wild.

The FWS acknowledges that successful reintroduction of captive bred Panthers back into the wild is speculative and unproven, yet the agency has failed to put a limit on the number of animals that could be captured. Nor is it willing to restrict the program to injured, rehabilitated animals and one kitten from each multiple litter. For these and other reasons explained here, the EF! Biodiversity Project, in conjunction with Florida EF! grassroots activists, has formally intervened in the case.

Under the new plan, Panthers would be bred selectively in captivity to increase the size of the population as well as to improve the captive population's genetic and reproductive health. Their offspring would then serve as a source of animals to place back into the wild to improve the reproductive viability of the wild population. That is, if any Panthers still existed in the wild by that time and if suitable Panther habitat remained. Regardless of the good intentions of biologists in the Interagency Panther group, ultimately it could become still another case of captive breeding in lieu of habitat protection.

It appears that the Panther recovery officials have lost sight of the long-term objective of securing and restoring Panther habitat and allowing full recovery of the predator in the wild. If the Florida Panther is indeed doomed under current conditions, it is the responsibility of federal and state agencies to change the adverse conditions. The failure to protect Panther habitat and natural movement corridors is part of the genetic inbreeding problem, which appears to be reducing Panther reproductive success.

The Florida Panther will survive in the wild only if an adequate network of suitable habitat with appropriate prey base is provided. A secure habitat network presently does not exist, so habitat restoration is needed. Humans with guns now out-compete Panthers for deer. Moreover, the Osceola National Forest reintroduction experiment with 5 *Felis concolor* from Texas showed that human hunters are likely to shoot Panthers when they encounter them. The Fish and Wildlife Service and Forest Service have apparently found it convenient to propose captive breeding rather than confront the real problems of excessive road access, illegal hunting, livestock, and other anthropogenic intrusions.

The details of, and commitment to implement, habitat restoration programs should be made part of the Panther survival plan, prior to the granting of any permits. In the entire 255 pages of the Species Survival Plan, only a few scant pages were devoted to habitat preservation!

The FWS appears to be proposing an program similar to the Mexican Wolf recovery program — which in effect has condemned all remaining Mexican Wolves in the US to captivity in zoos! The US Fish and Wildlife Service is facing legal action by the EF! Wolf Action Group for its failure to implement the Mexican Wolf Recovery Plan and reintroduce wolves back into the wild. The FWS captured all known Mexican Wolves from the wild and failed to implement habitat protection and restoration programs that would allow for successful wolf reintroduction. Potential Panther habitat in Florida is being destroyed faster than is wolf habitat in the Southwest. The FWS is proposing that the captive Panthers be placed in commercial zoos (Miami Metro Zoo, the Jacksonville Zoo, and the Lowry Park Zoo), which have agreed to spend approximately $1 million for facilities and $500,000 per year for operating expenses. The Panther recovery coordinator, Dennis Jordon, indicated in a telephone conversation with this activist that Panthers could be on public display in these zoos within two years. The next place anyone will likely see a Florida Panther is on the Johnny Carson Show accompanied by the standard rap of how zoos are saving Endangered Species!

The new proposal gives little detail of how captive-bred Panthers will be allowed to co-evolve with emerging threats such as on and off road vehicles, parasites, disease and land developments. The zoo facilities will not be large or natural enough to maintain successful habitat adaptability responses. Exposure to humans will cause desensitization.

Our present data base is insufficient to preserve the complex cultural heritage that wild Panthers pass along from one generation to the next — the learned behaviors that help them survive in the wild. Until this knowledge gap is filled, any Florida Panther captive breeding program should be severely limited and applied on an experimental basis only.

Another "management action" under the plan is increasing the number of Panthers that are radio-collared. Fourteen Panthers (over 30% of the known population) are already handicapped by burdensome and conspicuous radio collars, yet the Panther Committee now intends to capture, radio collar, track and test all surviving Panthers for mercury contamination.

Of course, the plan does not inform the public that every known Panther will be chased and treed by a pack of howling dogs, then tranquilized, examined, and monitored for much, if not all, of its remaining life. How many animals will be killed or injured in this process? At least 3 Panthers have already been killed as a result of "research efforts!" Isn't data from 14 Panthers sufficient?

Should we not consider the dignity — the wild character — of this grand creature? Humans have destroyed all but a few scraps of this Florida native's life space, contaminated much that is left with poison; and now suggest that these few remaining cats, who have learned to dodge hunters' bullets, outsmart hunting dogs, and avoid motorized vehicles, must now live in cages. How much more will we make the Panther suffer in the name of saving it?

The Biodiversity Project is urging the FWS and all other involved agencies to work for a rapid increase in Panther habitat values by 1) expanding public land refuge areas through additional land purchases; 2) closing roads in both occupied and future reintroduction sites; 3) removing hunting camps and other private, high impact inholdings within Panther habitat; 4) eliminating all domestic livestock grazing from Panther habitat; 5) prohibiting hunting in large, sensitive core areas of each recovery site; and 6) eliminating all ORV use in these recovery areas. These steps are mandated by existing law and regulations; they should have already been resolved in both formal and informal Section 7 consultation.

The failure of the Fish and Wildlife Service to take these actions is evidence that Section 7 Jeopardy Standards under the Endangered Species Act have not been applied properly on behalf of the Panther. Consequently, the entire Panther Recovery program is now subject to legal challenge.

The plan is particularly vague in its description of the establishment of additional reintroduction sites. Many of the best proposed reintroduction sites in north Florida and Georgia are on National Forest land, yet no cooperative agreements are in effect with the US Forest Service to implement road closures, hunting and ORV restrictions, or other habitat restoration initiatives.

The Plan has also failed to seriously consider a full range of alternatives. The reclassification of the Florida Panther under the Endangered Species Act to allow genetic enrichment for south Florida populations in the wild, should be pursued prior to the experimental captive breeding.

The FWS should not rule out the possibility of mixing genes from other populations in the captive breeding program. These genes could be obtained from the closest known relatives outside of Florida — Cougars in east Texas. This may become an important option if Panthers from Florida continue to have reproductive problems due to inbreeding.

Before condemning all known Florida Panthers to lifetime imprisonment in zoos, the FWS should formally grant Endangered status to all *Felis concolor* east of the Mississippi River, regardless of origin. Evidence in the historical literature suggests the intermixing of all these populations before human developments resulted in geographical isolation of Panther populations.

An additional prudent approach would be to provide immediate genetic enrichment by the translocation of male Panthers, from as diverse a founder stock as possible, into areas such as the southern Everglades — an area presently deficient in male Panthers. This would involve considerably less risk, and individual animals would not lose their natural behaviors.

There remain some legal hitches to the proposed captive breeding proposal; but now may be the last time that citizens and environmental groups can administratively or legally challenge the extent or biological integrity of this proposal. If the Plan is implemented without additional restrictions, we could wake up one morning to read in the newspapers that all Florida Panthers have been put in zoos.

The FWS admits that it will not be able to legally reintroduce captive bred Panthers back into the wild without first complying with the National Environmental Policy Act [NEPA, which almost certainly would require completing an EIS]. By that time, Florida developers, agricultural interests and sportsman groups could easily block reintroduction by insisting that insufficient habitat remains. Ironically, however, the FWS is refusing to prepare a comprehensive Environmental Impact Statement, pursuant to NEPA, before it commences with its extensive removal of Panthers from the wild.

The Plan lacks a comprehensive worse case analysis. How many animals will be lost directly or indirectly due to this captive breeding program? What is the increased susceptibility of concentrations of animals held in zoos to infection and disease? What will be the conditions of existing Panther habitat and potential reintroduction sites, if present development trends continue? These are but a few of the key questions left unanswered in the CBSG Florida Panther Viability Analysis and Species Survival Plan.

Insofar as the proposed decision to grant permits to capture an undetermined number of Panthers from the wild could lead to the extinction of the Panther in the wild,

continued on page 22

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Caleta, in an area where he had always seen many Leatherbacks in previous years; again we found none. Had the turtles, as José rationalized, been frightened away by the nets set for them along the coast, or had this season's breeding herd been severely depleted during a few critical months of overfishing?

Leatherbacks are thought to nest in alternate years with some of the adults nesting in consecutive years. If this is true, the Mexiquillo breeding population could be wiped out in a couple of breeding seasons, should the illegal hunting continue.

Stopping the slaughter of Mexico's Leatherbacks poses tough questions, and demands even tougher action. Efforts to stop sea turtle poaching offshore are expensive and dangerous, requiring aircraft, patrol boats, fuel, food, Mexican marines, and fisheries biologists and inspectors who are brave, incorruptible, and dedicated enough to undertake a long-term campaign. Leatherbacks can be hunted along 200 miles of the Michoacan coast, though the poachers' efficiency is much higher in areas juxtaposed to prime nesting beaches. It is unlikely that the Mexican government or international conservation organizations will foot the bill for such an anti-poaching operation. Therefore the most pragmatic option open to conservationists is to ally themselves with those fishermen who are morally opposed to the illegal hunting of sea turtles.

Investigating the middlemen in the sea turtle leather trade could be gratifying in the short haul but probably disappointing in the long one. The interception and seizure of the speedboat presently running the Leatherback skins from Michoacan to Manzanillo could lead directly to those individuals directing the smuggling operation. However, even in the unlikely event that it got caught, the boat would probably be returned to its owners after payment of a fine or bribe. Mexico has a bad reputation in the trade of crude and finished leather of protected species. Perhaps it is time to find what action can be taken by Mexican law, to set a legal precedent and increase the cost to smugglers.

That sea turtles still exist in Mexico today is testimony to their evolutionary heritage, but they won't last long without increased protection. New ideas and alliances must be found if the latest chapter in the turtle tragedy is to have a happier ending.

The Beaver's Role in Natural Disturbance Regimes

by Jeff Elliott

ed. note: A longer version of the following appeared in the Glacial Erratic, *winter 1990. To subscribe to this EF! newspaper for the Northeast, send $12 or whatever you can afford to RFD 1, Box 530, N. Stratford, NH 03590.*

the sun goes down behind the wooded ridge.
cars drive into yards, doors open and close.
one by one, lights come on around the lake.
woodsmoke adds a haze to the moonlight.
supper is on the table. someone watches the news.
houses warm. the colored lights on christmas trees sparkle.
and quietly, below the ice,
a beaver drowns in a metal trap.
—Gary Lawless, Gulf of Maine EF!

As we undertake efforts to defend and restore Turtle Island, we strive to reestablish salmon in the northern rivers, Bighorn Sheep in the deserts, Mountain Lions in Appalachia ... Each area has its own totem animal. Some are charismatic like sea turtles; some are cryptic like the Blind Cave Cockroach. Many of these species face extinction, and they should, of course, be defended; but they are individual species, not ecosystems. The species based approach of the Endangered Species Act and The Nature Conservancy's islands of habitat approach are well meaning but dangerous. We need to think on the scale of individuals, then species, then ecosystems, then the biosphere — and act to save all of it.

Many of these species and ecosystems are threatened by forest over-management — misguided attempts to improve Nature. The timber industry is allied with the US Forest Service and state Fish and Game departments, which agencies manipulate ecosystems to sell hunting and fishing licenses. They do this largely through the fabrication of edge habitat. They justify the creation of edge through logging by the observation that many species inhabit early successional niches.

This is a valid observation, but the creation of artificial edges by the destruction of older, later stage growth is ecologically unsound. The diversity of old-growth stable systems surpasses in quality and quantity the diversity of edge habitat created through logging or other manipulation for the sake of increasing game species.

Just about everything the timber industry dislikes can create natural healthy edge habitat. Ants, moths, blights, fungi, Spruce Budworm, Bark Beetle, lightning, down drafts, landslides, woodpeckers, gregarious nesting birds such as Passenger Pigeons, rabbits, mice, Porcupine, Moose, and Beaver all are (were, in the case of the Passenger Pigeon) capable of killing trees. These species have co-evolved as parts of the forest ecosystem. They kill trees but not forests. These species have been designing the trees as they are designed by the trees. If these beings ever overharvested, they would go extinct. Since loggers are overharvesting, they will go extinct.

Each of the animals above is capable of creating natural openings that encourage biological diversity. Many have co-evolved with certain species of trees; others utilize the forest at certain stages of development. Many, such as the blights, are cyclic; some are species specific, including most of the 10,560 types of moths found in North America. Others concentrate on small patches of land — like Great Blue Herons, which nest in colonies and deposit so much guano that they kill most plants under their nests, as well as the nesting trees themselves.

Storms can have a tremendous impact, but here in the North, they are unreliable. One of the few species that provides disruptions in a predictable manner, and creates uniform and contiguous openings, is the Beaver, *Castor canadensis,* the same critter that helped spur the development of Turtle Island — felt hats, Hudson Bay Company, Jim Bridger, and all that. This animal was one of the most important factors of biological diversity in the North.

Beaver create ponds, which go dry and form meadows, which are transformed into alder runs, which mature into aspen stands, which are replaced by later stage growth, which may be flooded and killed to become swamp. The predictability of Beaver ecology makes this species important for the stability and, therefore, the diversity of forest ecosystems. Some Beaver colonies have maintained large ponds in the same place for many centuries, creating important aquatic systems. Other sections of watersheds have been managed by the Beaver in a manner leading to flowages undergoing fairly rapid succession. These latter flowages are the main topic of this article, for they are key to the biodiversity of the North.

The vast temperate zone Eastern forest had old-growth trees nearly as large as any in North America. Big trees, though, are only part of the old-growth system. Natural openings are also important, and Beaver were critical for creating these openings.

After a typical Beaver pond has been established for several generations, it is shallow and covers perhaps a couple hectares. Because it is shallow and aging, it is covered with weeds: duck-weed, pond-weed, water-lily, and Floating-heart. Along the shore are arrowheads, Water-plantain, Buckbean, cattail, and water-arum. Farther up the shore live jungus, pitcher-plants, sedges, Bullrush; then Steeple-bush, Leather-leaf, Labrador-tea, Rhodora, and roses; then alder, aspen, birch, maple, or Black Spruce. Finally we fade into mature old-growth trees of the terrestrial part of the forest.

This is an aging well established pond-to-forest system maintained by generations of Beaver. But the pond is filling in and the shore provides little for new construction material and only enough food for one pair of adult Beaver and their offspring. The rodents must travel farther from the safety of the water to reach food. Thus they need to leave this pond and build a new home or be eaten. Generally, the length of time a pond is occupied and the number of animals it can support is determined by the productivity of brush on the shore area, the size of the pond, and its shore line index (the ratio of shore line length to surface area of the pond). The larger the pond and the more irregular its shore, the longer is its food producing edge.

In spring the adults may have 2-4 pups. These young stay in the established pond for at least a year. Eventually, if they haven't been eaten by a Bobcat, Lynx, Coyote, bear, or wolf, they leave to establish their own ponds. Often a young Beaver will travel a considerable distance and build a small pool for food storage and a make-shift lodge; some young Beavers live like a Muskrat in a bank burrow. In the first year, the Beaver girdles many of the larger trees around the pond site, killing the older trees and allowing young brush to grow up in its place. This brush and the tops of the fallen trees are the Beaver's food and construction material. Some Beavers wait until the second year to construct a lodge and a dam, which may flood a large area and create a swamp.

Most swamps in the North were created by Beavers. Ironically, the Environmental Protection Agency, through the National Environmental Policy Act, protects ephemeral swamps because of their biodiversity — but does not protect their creators. Like the young of most species, the young Beaver is likely to be killed, leaving a new swamp to quickly regenerate. A more fortunate Beaver may be joined by a mate, and the young couple's pond, much like their parents', will slowly fill with sediment.

As the pond ages, it becomes a more stable system, and the number of species at each trophic level increases. With a young pond, early successional species tend to be common but represent only a few groups. This is relatively unstable because each trophic level is occupied by a small number of large populations. Each population is filling a large amount of ecological space and therefore is highly significant to trophic levels above and below it. If a population crashes, the destabilizing effect on other populations is much greater in diversity-poor systems than in diversity-rich systems. As a system ages, species composition changes and becomes more diverse. In an aging pond, aquatic animals and plants are replaced by semi-aquatic varieties. Cold water species are replaced by warm water species. As the area becomes more terrestrial, species composition adjusts accordingly.

Eventually the Beavers themselves will be displaced. When the pond reaches the point where it no longer provides the early successional plant stages required by the Beaver, the colony must move or die.

Without the Beaver the dam will eventually go into disrepair and wash out. Whereas during the flooding of the area after the dam was built, a swamp became a pond undergoing eutrophication, after the dam's demise the pond becomes a meadow with an entrenched stream meandering through it. Because of the nutrient cycle of the aquatic system formerly in this place, the meadow is very fertile and productive. This is the habitat favored by many insects, voles, Woodchucks (yes, there were Woodchucks before stone walls just as there were Silverfish before sink drains), Northern Bog Lemmings, White-tailed Deer, mice, Grasshopper Sparrows, Great Blue Herons, hawks, woodpeckers, warblers, Ribbon Snakes and more.

In the meantime, generations of young Beaver have left the pond to continue the process of disturbing old-growth and creating in succession swamps, trout ponds full of ducks and dragonflies, marshes, meadows, alder stands and maple groves. These areas of Beaver management are in a perpetual state of change, typifying the dynamic equilibrium of North American ecosystems before Hudson Bay Company began to exploit the continent for pelts. This dynamic equilibrium provides the environmental stress that drives evolution.

Preservation efforts on this continent have failed to protect this dynamic equilibrium. According to conservation biologist Michael Soulé, the difference between preservation and conservation is that conservation allows for evolution and genetic equilibrium, whereas preservation isolates and stagnates populations and their habitat. Given that the alternative to evolution and adaptation is extinction, attempts to preserve habitat in a static condition are doomed to fail, thus the need for huge preserves allowing dynamic forces free play.

Wetlands protection laws [e.g., Section 404 of the Clean Water Act, which requires persons wanting to dredge or fill wetlands to obtain a permit from the the Army Corps of Engineers, and requires the Corps to consult with the EPA before granting the permits] only preserve aquatic and semi-aquatic systems in their present state. In a natural system, as wetlands fill in, they would be replaced elsewhere by new wetlands, some created by Beaver. But this is not being allowed to happen. A non-estuarine wetland today won't be a wetland five generations from now.

The manipulation of ecosystems to the exclusion of Beaver by loggers, Fish and Game departments, trappers, developers and woodland owners must be stopped — immediately. This animal is the link between the terrestrial and the aquatic. If the Beaver is not returned to its natural range and numbers, we cannot have a complete temperate forest ecosystem. We cannot replace the flood control lost with the extirpation of the Beaver by building dams. We cannot replace the silt control of thousands of small natural dams. The Black Duck cannot be dreamed back from the slide toward extinction without the Beaver. We cannot build enough artificial nesting boxes for the mergansers and the Wood Duck. Game managers cannot mow a field and have it come back to Cotton Grass one year, and then years later Bullrush, and later still maple and Black Spruce, followed in a few years by trout and Duck Weed.

The Beaver is the ultimate game manager, the best in crop rotation. For the sake of the Osprey, Sweetflag, and Damselfly, we need to bring back the Beaver ecosystem. We can no longer allow forest mismanagement under the falsehood that it replaces the edge created by Beaver and the other natural tree killers.

Jeff "Fish & Chips" Elliott is a biologist currently unemployed by PAW and New Hampshire EF!

Florida Panther. . .

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it is a proposal for a major federal action with significant environmental effects, and thus requires the preparation of an EIS. A mere environmental assessment (EA) is not sufficient to examine the direct, indirect and long-term effects of implementing this proposal. Only through an EIS can the American public and independent scientific community have adequate opportunity to participate in the decision making process, pursuant to the provisions of both the National Environmental Policy Act and the Endangered Species Act. The EF! Biodiversity Project has formally advised the Fish and Wildlife Service of this legal requirement.

To date, however, the FWS has failed to honor our request for an EIS and is preparing only an EA. If an unlimited number of permits are approved, it could doom the wild Florida Panther and its habitat. This is a battle not only for the Florida Panther — it is for the last of wild Florida!

Is the Florida Panther to be one more wild creature doomed to the cages of the American entertainment industry? Not without a fight!

What You Can Do: Please write to the following Fish and Wildlife Service officials and express your outrage. Insist that FWS prepare an EIS before capturing more Panthers.

***John Turner, Director, Fish and Wildlife Service, Interior Dept., 18th & C Sts NW, Washington, DC 20240**

***James W. Pulliam, Jr., Regional Director, USFWS, 75 Spring St SW, Atlanta, GA 30303**

BIODIVERSITY REPORTS

Cahaba Shiner's Future Darkened by Coal

The Cahaba River flows through the heart of Alabama. After sliding over a small impoundment near Birmingham, it becomes the state's longest free-flowing river. Half of Alabama's population lives within an hour of the Cahaba. Over half a million people drink from it every day. Biologists say the Cahaba is one of the most biodiverse rivers for its size in North America, hosting 131 species of fish, hundreds of species of birds, and a vast array of plants. This array includes the Cahaba Lily, a variation of Spider Lily that blooms in dazzling profusion during late spring on the rocky shoals of the river.

Below Selma the Cahaba joins the Alabama River for the last leg of their journey to the Gulf of Mexico. At this juncture, the American Alligator and the Alabama Shovelnose Sturgeon make their way into the Cahaba. Once considered Endangered, Alligators are now sighted rather often. Not so the Sturgeon.

The word 'Cahaba', like many place names in the South, derives from a Native American tongue; originally pronounced "Ika-Uba," it translates as "Waters Above." Speculation is that the term refers to God's waters. Archeological remains of native hunter-gatherers along the Cahaba date back to the last ice age. Even today, arrowheads are a common find on the River's banks. More recent Cahaba-related activities include coal mining, gas recovery, sewage treatment, and the usual development.

In 1976 the EPA concluded: "... if the amount of pollution added to the [Cahaba] river continues, there is no doubt that the river will be degraded to the extent that it no longer can be an asset to the community." Unfortunately, very little attention was given to this pronouncement.

Several aquatic species are endemic to the Cahaba, including *Notropis cahabae*, the Cahaba Shiner. At about two inches long, this fish is confined to the main channel of a single river. Little is known about the species. Not a particularly glamorous fish, it is elusive, making it hard to study ... and it is disappearing.

The State of Alabama considers *Notropis cahabae* to be an endangered species; the federal government does not — not yet. Remissly, Alabama offers only weak protection measures for the Cahaba Shiner, measures so far totally ineffective. Meanwhile, non-point sources of pollution — urban runoff and siltation from agriculture — continue to degrade the Shiner's habitat downstream from one of Alabama's most massive development schemes: Birmingham.

As folks flock to the "burbs" along the banks of Cahaba Basin, they bring all the accoutrements of urban life: pesticides, auto-related pollutants, garbage, and sewage. New development projects sprout like weeds just south of town, oftentimes near the River. Rains inadvertently wash loose fill dirt into construction site holding ponds, which frequently fail. During the severe rains and flooding of this past February, the Cahaba looked like a chocolate milk shake.

The Cahaba Shiner's relative, *Notropis caeruleus*, has fared even worse. This small fish, commonly known as the Blue Shiner, has not been seen in the Cahaba River, one of its primary habitats, since the early 1970s. Like the Cahaba Shiner, it needs clean water and a sandy substrate. The Cahaba's sandy bottom and rocky shoals apparently had provided the Blue Shiner with favorable spawning grounds. As eutrophication and siltation occurred, the Blue Shiner vanished.

The Blue Shiner is an indicator of the overall health of its habitat. Its demise within the Cahaba Ecosystem sent out a clear message: the Cahaba is being adversely affected by human activities. Yet little was done to preserve this unique aquatic ecosystem.

Appearing in Vol.42, No.229 of the Federal Register was the following notice: "The [US Fish and Wildlife] Service proposes to determine the Cahaba shiner (*Notropis* sp.), spring pygmy sunfish (*Elassoma* sp.), goldline darter (*Percina aurolineata*) and pygmy sculpin (*Cottus pygmaeus*) to be Endangered Species and to identify Critical Habitat for these species. This action is being taken because of their decreased population levels and threatened modification of their habitat." That was on 29 November 1977. To date, neither the Cahaba Shiner nor Goldline Darter, the two species listed above that rely on the Cahaba River for their existence, has received federal protection.

So what happened? By some accounts, the Birmingham Area Chamber of Commerce spent thousands of dollars to prevent the listing of these two species. Apparently afraid that designation of Critical Habitat would hinder plans to develop along the Cahaba, the local business community got busy.

Somehow the Cahaba Shiner kept a tenuous grasp on life through the booming 1980s. But now, on top of the already mentioned stresses upon the river, another disaster looms: coal bed methane.

According to industry estimates, twenty trillion cubic feet of methane gas lie below the Alabama hardwoods. Similar pockets of coal bed methane exist in other Southern states, virtually ignored until now. Ostensibly, if this source of energy can be tapped, America will depend less on foreign oil.

On 1 December 1989, Alabama's Department of Environmental Management (ADEM) issued a permit to McKenzie Methane Corp., allowing them to discharge "produced waters" from their wells into the Cahaba. By-products of drilling, these waters contain large amounts of chlorides and various heavy metals. The ecological ramifications for the Cahaba of this discharge are unknown.

Within 48 hours of its issuance, the permit was suspended, following the discovery that one of McKenzie's settling ponds containing an undetermined amount of chemicals had been intentionally breached. Some of the pond's contents flowed into the Cahaba. Men were fired and McKenzie apologized while appealing the suspension of their permit. Meanwhile, as the issue becomes polarized, other drilling companies wait, poised to begin methane extraction in the Cahaba Basin.

From the air, certain areas of the Cahaba's banks appear bombed, the result of drills and dozers carving a new industry out of the wilderness. Large clearcuts checkerboard parts of Shelby and Bibb Counties; new roads snake from well to well. On rainy days trickles of muddy water head downhill from dozer tracks to the River. Settling on the once sandy bottom, this addition of silt is anathema to the Cahaba's delicate ecology.

To add insult to injury, on March 25 the ADEM director, against overwhelming public outcry, issued another permit, to Pruett Oil, approving the discharge of coal bed methane waters into the Cahaba River. Biologists quickly denounced the action. A local conservation group has vowed to appeal the permit.

Sound hopeless? Not entirely. In March of this year, Fish & Wildlife Service's Jackson, Mississippi field office once again proposed a rule to list *Notropis cahabae* as an Endangered Species (Federal Register, Vol.55, No.53, 19 March 1990, p.10083). No Critical Habitat is recommended. While the proposal is a good first step, the FWS seems unaware that time is running out for this species and its only habitat. The entire Cahaba Ecosystem needs an immediate restoration effort, an approach clearly in keeping with the spirit of the Endangered Species Act.

With that spirit in mind, this writer proposes that the FWS immediately do the following: 1) Acknowledge the precarious predicament of the Cahaba Ecosystem. 2) Designate Critical Habitat for the Cahaba Shiner. 3) Instigate a multi-species listing effort for the Cahaba River which includes the Goldline Darter, Alabama Shovelnose Sturgeon, and Cahaba Lily. 4) Notify all federal agencies that any actions they plan that are likely to jeopardize the Cahaba's sensitive species may not take place until the agency confers with the FWS Director about those actions. 5) Formally ask the Secretary of the Interior to list the Cahaba Shiner on an Emergency basis, as provided for in Section 4 of the ESA.

Environmental stresses in the Deep South are unraveling one of America's most diverse bioregions! Our once pristine rivers are filling with silt and sewage. American Rivers recently called the Cahaba one of the nation's 10 most endangered rivers. One eminent biologist recently predicted that by the year 2000 *Notropis cahabae* will be only a memory. This issue involves the integrity of an entire aquatic community. It is about the intrinsic value of an ecosystem.

WHAT YOU CAN DO: Write the FWS Regional Director, James Pulliam, 75 Spring St, SW, Atlanta, GA 30303. Tell him you support the listing of the Cahaba Shiner as an Endangered Species. Tell him this species cannot wait for the usual painstakingly slow listing process before receiving federal protection. Request an Emergency listing.

—Ned Mudd, Jr., POB 130411, Birmingham, AL 35213

Biodiversity Wins Over Haul Road

The Clearwater National Forest in Idaho has formally decided against a proposal to build the Dworshak Access log haul road through the heart of the proposed Aquarius Research Natural Area (RNA). (See back issues.) In his 4/6/90 decision to select the "no action" alternative for the proposal, North Fork District Ranger Arthur Bourassa said the road would pose too great a risk to the proposed RNA. He noted, "The area has been designated a proposed natural area because it is considered the richest and best collection of coastal disjunct species east of the Cascade Range that has remained after the construction of Dworshak Reservoir."

Indeed, a 1988 study conducted for The Nature Conservancy by Robert Mosely found "38 populations of seven rare plant species along two alternative [haul road] routes." Among these is the rare Bank Monkeyflower (*Mimulus clivicola*), classified as a "sensitive" species by the Forest Service and under consideration for Endangered Species Act listing by the US Fish and Wildlife Service. Mosely found the Bank Monkeyflower's global distribution to be confined to north-central Idaho and adjacent Washington and Oregon. Mosely also found that the lower proposed haul route would impact the only known population of the rare Coeur d'Alene Salamander (*Plethodon idahoensis*; see back issues) within the proposed RNA.

When Idaho's US Senator Steve Symms heard in 1988 that the Forest Service was considering not building the road because of the effects it would have on the Bank Monkeyflower and other rare species, he reportedly proclaimed, "I'd rather go up there and hoe the damn things out." Symms was joined by fellow Idaho Senator James McClure and others in pressuring the FS to build the road. McClure apparently shares Symms's contempt for rare wildlife, having said about the Northern Spotted Owl, "We have none in Idaho, we shoot 'em coming across the border."

Despite the intense political pressure, the Forest Service did the right thing. The road would have allowed logs to be dumped into Dworshak Reservoir. Bourassa cited uncertainties about whether the reservoir would have enough water to make the log dump site usable over the logging season, and whether the logs would have a significant, negative effect on water quality.

In addition to deciding not to construct the road, Bourassa initiated "preparation of an establishment report, and ultimately, a management plan for" the proposed Aquarius RNA, to be completed within three years. While the long-term future of the proposed RNA and haul road is yet to be decided, Bourassa has struck a blow for the maintenance of biodiversity in what Moseley calls "the last remaining intact example of the most unusual ecosystem in the northern Rocky Mountains."

WHAT YOU CAN DO: Write Ranger Bourassa and express your appreciation of his decision to "Just Say No" to the timber industry and Idaho's Congressional delegation. Your earlier letters on this matter may be what encouraged Bourassa to take a stand for biodiversity. Again encourage him to work to make final the Aquarius RNA designation and insist that no roads ever be built through the Aquarius RNA, as road-building is inconsistent with the intent of the RNA program. Send a copy of your letter to the Regional Forester, who has authority over the designation of RNAs.

***Ranger Arthur Bourassa, North Fork Ranger District, POB 2139, Orofino, ID 83544**

***Regional Forester John Mumma, Region 1, USDA-FS, POB 7669, Missoula, MT 59807**

—Keith Hammer, EF! Biodiversity Project

OLD-GROWTH IN THE EAST

A Preliminary Overview

by Mary Davis

Introduction

As aptly summarized by Bill McKibben in *The End of Nature*, the Earth First! movement "wants a different world, where roads are torn out to create vast new wildernesses, where most development ceases, and where much of man's imprint on the earth is slowly erased. Earth First![']s] . . . purpose is defense of the wild, the natural, the nonhuman." Wilderness and biodiversity are the movement's two central concerns. Why, then, should we concern ourselves with old-growth in the East? The term brings to mind small, isolated tracts, surviving only in a few forgotten pockets.

This study was undertaken on the assumption that more old-growth remains in the East than has been commonly recognized. Our research has shown this assumption to be truer than we anticipated. What began as a small project has turned into a major, long-term undertaking, of which this report is only the first stage. Almost every eastern state has some old-growth, and areas of thousands of acres each exist in Maine, Pennsylvania, North Carolina, South Carolina, Michigan, and Minnesota.

Furthermore, the tracts, even the smallest, are valuable. Although all are only remnants of viable ecosystems, they can play a key role in Earth First!'s plans for wilderness. Some, with restoration, could become core areas of future wildernesses. Others could become nodes of biodiversity, linked by corridors.

Old-growth stands can also help educate the general public and give scientists opportunities for constructive research. Americans tend to value the nation's history. Knowing that venerable trees, deliberately spared from cutting by many generations of Americans, are today falling victim to the axe or to pollution may bring home the need to change our ways. By studying natural processes in old-growth forests, scientists can learn how to manage in a truly sustainable way the forests that we draw on to meet our needs.

In a symbolic sense, old-growth forests are seeds for recovery. They give us glimpses, imperfect though they are, of what Earth First! is working toward. They are seeds for recovery also in a physical sense, as they generally contain mostly native plants, from which disturbed landscapes can be revegetated.

Unfortunately they are threatened seeds. Some are menaced by logging. In the course of research for this article we learned of two large areas of old-growth in danger of timbering, one in the Northeast and one in the Midwest. We also learned of two sizable areas in the Southeast that were recently cut. All are threatened by ground-level ozone, acid deposition, other pollutants, and climate change. A major reason for publishing a preliminary survey is to alert environmentalists that old-growth still exists in the East and that it needs our attention.

This attention should take the form of both protection and restoration. Tracts in federal forests should be given Research Natural Area (RNA) status, if they are not already sheltered. Privately owned land needs the protection of The Nature Conservancy or a non-profit land trust. Activists should work to secure RNA status or appropriate ownership or easements for unprotected tracts, and should monitor and guard areas that already ostensibly enjoy protection to be sure that standards are not violated. Steps towards restoration should include pressuring government agencies and other landowners to conduct habitat suitability studies for the reintroduction of extirpated species, to carry through reintroduction projects, and to restore areas around old-growth tracts to prevent harmful edge effects.

And what do we consider old-growth to be? Our definition of old-growth is that put forward by Robert Zahner in the Yule 1989 issue of *Earth First! Journal*: "Old-growth forests are forests having a long, uninterrupted period of development, or scientifically speaking, they are the end point of an ecosystem's development without disturbance by modern man. . . . . An old-growth forest always contains trees in all stages of aging, including senescence, as well as dying, standing dead, and fallen dead trees." This definition covers old second-growth forests that have not undergone human disturbance during their developmental cycle. "Virgin," on the other hand, excludes second-growth forests, as, to us, it means never cut by Euro-Americans and not grazed by their animals.

What we primarily seek is tracts of forest that look largely as they would appear had not Europeans settled North America. As a general rule, this means virgin old- growth. However, we have not entirely neglected virgin tracts that are not old-growth or areas that are not virgin. We mention some tracts relatively undisturbed by modern humans on which the trees are all young as a result of natural causes such as periodic stand-replacing fires or frequent storms. Also we give entries to some tracts that have been selectively and lightly cut or that have been grazed by livestock. In these cases we have specified the nature of the human disturbance to the extent allowed by our sources.

We apply our definition of old-growth only loosely, in part because this survey is a compilation of the work of other researchers. The author has not conducted field studies. Therefore, for a given state, we have been influenced by the definition of old-growth adopted by leading researchers in that state. We have briefly indicated their standards, if they stated them.

We set a desired minimum tract size—100 acres. We give an individual entry to each area of virgin old-growth of this size or greater. We also devote individual entries to a few smaller areas of special ecological significance or great rarity; and we summarize information on some additional small areas. The extent to which we cover pocket-size tracts depends somewhat on the state. For a state with many tracts over 100 acres we saw less reason to speak of 20-acre tracts (the standard for several major studies) than for a state with none.

Somewhat arbitrarily we have limited our report geographically by drawing a line south from western Minnesota through eastern Texas to the Gulf of Mexico. Admittedly this approach is not altogether bioregional, because we have omitted Canada and perhaps also relics of forest typical of the eastern United States in Oklahoma, Kansas, Nebraska, South Dakota, and North Dakota. A study of this type, however, necessarily proceeds state by state, because key information sources are state natural heritage programs, Nature Conservancy chapters, and state departments of natural resources.

In this issue of *EF! Journal*, we present the northeastern states. The next two issues will contain the southeastern, south-central, Ohio Valley, and midwestern states.

Our information is arranged by state, with states grouped into five geographical regions. Within the regions, states are listed alphabetically. The listing of sites is organized by acreage, with the largest first, except for Florida and Pennsylvania, where arrangements based on geographical location seemed more helpful.

As the title of this report indicates, our accounts of each state must be regarded as tentative. All the state listings may be incomplete, some obviously more so than others. The starting point for our research in each state was the state's natural heritage program. Some speedily gave us relatively full information and leads for further research; a few never gave us anything. Our accounts reflect these responses.

Furthermore, unbeknownst to our respondents and to us, some areas we list as virgin may have undergone grazing or limited cutting. In some forests climax old-growth characteristics are never achieved, and past history is uncertain, so that it is difficult for researchers to ascertain a lack of disruption. Our acreage figures should also be regarded with caution. Accounts of old-growth tracts often do not make clear whether a statement of size refers to an entire area on which some old-growth is found or to the old-growth alone. We have tried in each case to determine the actual extent of the old-growth itself, but at times we may inadvertently have taken the whole for the part or vice versa.

Readers should keep in mind that, as several of our respondents reminded us, no forest in the East (nor in the West, though healthier specimens do remain there) has escaped human impacts. Indians may have burned or otherwise manipulated some eastern forests, especially those nearest the prairie. In the Midwest, they appear to have created and maintained grasslands to attract Buffalo. Their hunting and gathering may have affected wildlife populations.

The effects of Euro-Americans are omnipresent and, as a rule, have been detrimental to the health of ecosystems. In addition to acid deposition and ground-level ozone, their impacts include the dissemination of other pollutants, like pesticides, through the air and water; the introduction of exotic species; the extirpation of native species, mostly animals, especially predators; and edge effects that impact any remnants not surrounded by relatively natural forest.

As a result, none of the areas that we describe is a natural, 'complete ecosystem. All are in need of restoration such as the reintroduction of animal species and the closure of roads.

In concluding the introduction we wish to extend our deep appreciation to the many people who responded to our queries, and to request further assistance. Any value inherent in this report is the result of our respondents' generosity with their knowledge and their time. In addition to the staffs of many natural heritage programs, they include, as indicated in the notes, members of the US Forest Service and National Park Service; employees of state agencies, The Nature Conservancy, and other land-preservation organizations; and concerned individuals. Special thanks go to ecologist Reed Noss, who reviewed and amended the text of this study. We would appreciate receiving corrections, revisions, and additions to this report, which we shall incorporate into future publications. They should be sent to the author at 213 Westmoreland Court, Georgetown, KY 40324.

NORTHEAST

CONNECTICUT

A tornado in 1989 leveled the last sizable old-growth stand in Connecticut—42 acres of White Pines and Eastern Hemlocks known as the Cathedral Pines and owned by The Nature Conservancy. The Conservancy plans to remove only fallen trees along the edge of the tract, and to let the land regenerate naturally, despite the protests of area residents (2). This stand was "the result of old-field succession 150-250 years ago" as are the few remaining old-growth areas. A hurricane destroyed Connecticut's last virgin stand, on the southeastern coast, in 1938 (1). (These natural disturbances emphasize the need for large preserves. Small, isolated stands are particularly vulnerable to high winds.)

SOURCES:

(1) Metzler, J. Kenneth, Environmental Analyst, Connecticut Department of Environmental Protection. 1-17-90 letter.
(2) The Nature Conservancy. 1990. CT. The Nature Conservancy Magazine 40(1):22.

MAINE

In 1980-82 the Maine Critical Areas Program in the State Planning Office conducted a statewide inventory of old-growth forests. The staff sought information from timber corporations, government foresters, and the general public. Researchers field checked 104 of the leads received and recommended 68 of the sites for evaluation for critical area status. Most of the sites are less than 50 acres in size. Although "undisturbed" was one of the inventory's criteria, many have undergone limited cutting.

The publication describing the inventory, *Natural Old-Growth Forest Stands in Maine*, states that "additional work remains to complete the documentation of old-growth forests throughout Maine" (2, p. 1). The compilers believed that assistance from the timber industry would be needed to finish the documentation. What the inventory does, the report says, is to give "a series of representative stands" (2, p. 8).

Lissa Widoff, formerly an ecologist for the Maine Chapter of The Nature Conservancy and the Maine Natural Heritage Program, disagrees as to the representativeness of the inventory's stands. She believes that the inventory was too narrow in its focus and that the researchers may have been mistaken in concentrating on private lands. The inventory cannot be faulted as regards northern hardwoods, she says; but it does not reflect accurately the variety of forest types in Maine.

Apart from Big Reed Pond, which is in a class by itself, old-growth in Maine is on land that is subalpine or too wet or too steep for easy harvesting, according to Widoff. Most of Maine's subalpine spruce-fir forests can be considered old-growth, because they have either never been cut or were cut so long ago that the stands now show forest dynamics typical of natural stands. Baxter State Park, for example, has subalpine old-growth. Central and southeastern Maine have old-growth floodplain forests with Silver Maple (*Acer saccharinum*) and Red Maple (*Acer rubrum*).

Few old-growth cedar swamps remain, because cedar is a valuable wood, and in winter, when the swamps are frozen, the trees are accessible. The White Mountain National Forest in western Maine contains forest stands that have not been cut at least for a long time, because the trees are hard to reach, and because, near hiking trails, the Forest Service manages the land to produce mature forest, for scenic reasons. Here an appearance of old-growth can be found (5).

H. W. Vogelmann of the University of Vermont described to us one small but valuable tract: a 6-acre Black Gum swamp in New Gloucester, with Black Gum (*Nyssa sylvatica*) 400-450 years old. The swamp was in excellent condition when he studied it some time ago for National Natural Landmark status; but was in private hands (4).

The inventory researchers and Lissa Widoff agree that more work on old-growth is needed. The state of Maine has taken a step in the right direction by employing someone to propose a system of ecological preserves for the state that would include the best existing samples of each type of community. Old-growth will necessarily be one of her concerns. Like most other states Maine has no single source of information on old-growth sites. The data that exists is scattered (5).

Since we did not succeed in obtaining detailed site information from sources other than the inventory, our examples are drawn from this publication. The inventory does not state who owns the land it describes. According to Widoff, most of the tracts are private, some state-owned; and presumably most are still uncut (5).

The inventory recommended for further study, stands dominated respectively by Eastern Hemlock (*Tsuga canadensis*), Red Spruce (*Picea rubens*), White Pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), cedar, oak, and northern hardwoods. The hemlock, cedar, and oak stands are small. The finest stands are the northern hardwoods, several of which are described below. We also describe representatives of the White Pine and Red Spruce areas, though none of these stands met our criteria.

For Red Pine the inventory came twenty years too late. In 1962-63 the Maine Forest Service selectively cut the stand that was by far the largest, the 280-acre Cathedral Pines in Franklin County, to remove "overmature white pine and sawlog size red pine for telephone poles" (2, p. 149). In nevertheless recommending the site for further study, the Planning Office notes that "Although this stand has had salvage cuts through most of the area, the removal has not lessened the integrity of the stand because the salvage only removed dead trees." (2, p. 150). We are reminded that views of old-growth are changing for the better, with growing appreciation of dead wood as well as live trees.

Big Reed Pond Preserve, around Big Reed Pond, north of Baxter State Park (Piscataquis County)

3800 acres of old-growth mixed hardwoods and conifers, recently acquired by The Nature Conservancy (TNC) as the bulk of a 5000-acre preserve, plus 1200 acres of presumed old-growth owned by the Pingree-Wheatland heirs. The 5000 acres of old-growth and presumed old-growth, which surround Big Reed Pond, constitute a natural mixed mosaic of the forest types in Maine, including spruce-fir, northern hardwoods, cedar swamps, and rich woods. In having the whole range in one area, the site is unique, according to Lissa Widoff, who helped TNC make its purchase. She feels that Big Reed Pond is "definitely the largest" mid- to low-elevation old-growth in the state, and that it is probably virgin (5). At the time of the inventory, researchers were allowed to see only 10 acres of what was then the 5100-acre Big Reed Pond Study Area, owned by the Pingree-Wheatland heirs. They reported that the acres appeared uncut.

Unfortunately, in late winter of 1990 it appeared that a logging road was being cut into the portion of the site not owned by TNC, and that logging would soon begin. However, the March/April issue of *The Nature Conservancy Magazine* reported the following news: "Having previously saved 3800 acres at Big Reed, the Maine Chapter recently placed an additional 1013-acre parcel under

contract. The new parcel rounds out the southern and eastern boundaries of the preserve, which now embraces an entire watershed, a second wilderness pond, and an estimated 80% of Maine's 'virgin' forest." For updates contact Jamie Sayen (see Earth First! directory) (3). Seven Islands Land Company manages the unprotected land.

Yankeetuladi Hardwoods, in the northwest corner of the state (Aroostook County)

240 acres of virgin Sugar Maple, American Beech (*Fagus grandifolia*), and Yellow Birch (*Betula lutea*), on a ridge 1200' in elevation. Most of the Yellow Birch are dying, but seedlings of the three tree species, along with Shining Club Moss (*Lycopodium lucidulum*) and Evergreen Wood Fern (*Dryopteris intermedia*), stud the ground. Scattered through the stand are big White Spruce (*Picea glauca*) and smaller Red Spruce, in addition to beech saplings and shrubs. The canopy covers 90% of the stand and is an average of 55' in height (2, pp. 179-81).

Hafey Hardwoods, just south of Yankeetuladi

100 acres of apparently uncut, predominantly small beech and large Sugar Maples (16"-21" dbh [diameter at breast height]) on a ridge 1300' in elevation. The trees are more than 275 years old (2, pp. 181-82).

Musquacook Hardwoods, northwest Maine (Aroostook County) A 125-acre, uncut ridge, dominated by Sugar Maple and beech. Yellow Birch, apparently experiencing dieback, and fir are found throughout the stand; and Red Spruce and Red Maple are also present. The canopy is 60' high, and covers 90% of the area. The basal area of 27.3 square meters per hectare is the greatest for hardwood stands in the region. The stand illustrates the dynamics of hardwood forests, as it appears to have two even-aged components, about 115 years and about 200 years of age. Apparently one part of the stand suffered a natural blowdown about 115 years ago; the older section may have grown up after a fire (2, pp. 182-83).

T13 R11 Red Spruce (Aroostook County)

92 acres of old-growth Red Spruce and Balsam Fir (*Abies balsamea*). The stand is in a flat, shallow saddle, 1400' in elevation, between two ridge tops. The spruce are of various ages up to 200 years and are replacing themselves. Other trees in the area are Paper Birch (*Betula papyrifera*), beech, and Striped Maple (*Acer pensylvanicum*). The forest is undisturbed except for the cutting of a few White Pine in the 1860s. Whether these were within the 92-acre old-growth stand is unclear (2, pp. 66-68).

The oldest stand of Red Spruce is 4 acres at Basin Ponds in Baxter State Park (Piscataquis County), where the trees average 190 years and the oldest is over 380 years (2, p. 77).

Gero Island Old-Growth White Pine Stand, northern Maine (Piscataquis County)

70 acres of old-growth White Pine. The pines tower over spruce and fir, which form the lower level of the two-level stand. On the north end of Gero Island the pines are 150-200 years old, 100'-120' tall, and up to 38" dbh. This is one of the few areas of the state where White Pine is "maintained in its natural presettlement condition" (2, p. 113).

SOURCES:

(1) Conkling, Philip W. 1978. Old-Growth White Pine Stands in Maine and Their Relevance to the Critical Areas Program. Planning Report no. 61. Maine State Planning Office, Augusta. These stands were all small.
(2) Maine Critical Areas Program of the State Planning Office. 1983. Natural Old-Growth Forest Stands in Maine and Their Relevance to the Critical Areas Program. Planning Report no. 79. Maine State Planning Office. The person to whom the planning office referred us for updates did not respond to our queries.
(3) Sayen, Jamie. 1990. Maine Old Growth Faces the Chainsaw. Earth First! 10(4):7.
(4) Vogelmann, H.W. 1990, March 15. Phone call.
(5) Widoff, Lissa, formerly Ecologist for the Maine Chapter of The Nature Conservancy and the Maine Natural Heritage Program. 1990, March 2. Phone call.

MASSACHUSETTS

As Patricia Swain of the Massachusetts Natural Heritage Program notes, Massachusetts is "unlikely" to have "truly virgin" forest, because of its long period of settlement and heavy use of wood (8). Nevertheless, she and Robert T. Leverett of Holyoke called our attention to many acres of old-growth. The larger areas are listed below. Smaller sites include Beinecke Stand—up to 60 acres of northern hardwoods owned by Williams College (2); Bash Bish Falls Region—"perhaps 15 or 20 acres" in Washington State Forest (4); Ice Glenn—20-25 virgin acres in a narrow ravine with "300-year old hemlocks and several towering White Pines," in and owned by the town of Stockbridge (4).

Cold River Gorge, in Mohawk Trail State Forest in western Massachusetts (Berkshire County)

An extensive area of old-growth, the exact size of which is undetermined. An article in the *Boston Globe* (9-25-88) gave the size as 2400 acres, Leverett reports. That figure "seems high ... but it is by far the largest area in the state." He estimates "600 or 800 acres, although the figure could be over 1000" (4). Within the watershed, the largest single area is west of the confluence of Black Brook and Cold River. "The region contains large specimens of hemlock, red spruce, yellow birch, white ash [*Fraxinus americana*], red maple, beech and sugar maple. The area containing the best hardwoods lies along a band of 300 to 500 vertical feet above Route 2." East of Black Brook, the largest region is south and southwest of Clark Ridge and consists of bands of old-growth spared by loggers. Hemlock dominates (3, p. 4).

Deerfield Gorge (Berkshire County)

An estimated 350-400 acres of old-growth in six or so stands. "Probably no contiguous area has over 70 acres, but the region can be taken as a whole, since the bands of old growth lie on the feeder streams to the Deerfield River ... from stream level to about 400 feet up the ridge line and one tends to blend into another. The two most significant places ... are the watersheds of Dunbar and Fife Brooks." Both the Dunbar and Fife regions include land owned by the New England Power Company and by Monroe State Forest (4). Dunbar has 100-150 acres of old growth: "a large concentration of mature hardwoods, an impressive stand of hemlocks, a scattering of mature red spruce, and isolated, towering white pines" (3, p.2). Fife Brook probably has 60-75 acres of old-growth, including Northern Red Oak, beech, Yellow Birch, Paper Birch, Black Birch (*Betula lenta*), hemlock, and Red Spruce. Evidence of landslides is visible, but individual mature trees 2.5'-3.5' in diameter and 70'-100' high remain (4).

Mount Greylock State Reservation (Berkshire County)

100 plus acres of old-growth divided between the Deerhill trail and the Hopper regions on the west side of Mt. Greylock. The species are basically the same as in the Deerfield Gorge, but Mt. Greylock has finer specimens of Red Spruce. The Hopper is a glacial cirque with waterfalls. Excellent specimens of Hop Hornbeam (*Ostrya virginiana*) are among the varied species (4).

Acushnet Cedar Swamp, within the city limits of New Bedford.

Old-growth Atlantic White Cedar (*Chamaecyparis thyoides*) on an 1800-acre state property, approximately 930 acres of which is swamp (5, 7). "There are two large stands of old cedars ranging from 100-150 years old. A few might approach 200 years" (7). John P. Richardson counted the rings in 12 of the larger Holly Island Grove cedars in 1970 and found that the trees dated from 1848 to 1872. He noted that the age of the oldest cedars matched the years of decline of the whaling industry, and suggests that trees were cut for use in whaleboats, among other products (6). A list sent by Dr. Swain says "selective logging 200 yrs ago?" (8).

SOURCES:

(1) Anderson, Jean. Massachusetts Audubon Society. 1990, Feb. 23. Phone call.
(2) Anonymous. Massachusetts Inventory of Virgin Old-Growth Forested Areas [photocopy of an annotated list furnished by Dr. Swain, who thinks the information is "fairly accurate."]
(3) Leverett, Robert T. 1988. Old Growth Timber in the Deerfield Cold River Gorges. Letter [of the MA Forestry Association] 18(2):1-5.
(4) Leverett, Robert T. 1990, Feb. 9 and 28 and March 4 and 26. Letters and phone call.
(5) Mason, Austin B., Management Forester, Southeastern Region, MA Dept of Environmental Protection. 1990, Feb. 26. Phone call.
(6) Richardson, John P., Resource Administrator, MA Dept of Natural Resources. [1970 or 1971?] How Old Are the Oldest Acushnet Swamp Whitecedars?
(7) [Richardson, John P.?] [Photocopy of a typed data sheet on the cedars, furnished by Austin B. Mason.]
(8) Swain, Patricia. 1989, April 19. Letter.

NEW HAMPSHIRE

For a thesis at the University of New Hampshire, Lee Ellen Carbonneau identified and, in 1984, sampled 12 old-growth stands that showed no signs of cutting and were 10 or more acres in size. All had uneven aged trees, and in each "the oldest cohort of trees was 150 years for hardwoods and spruce trees, and 200- 250 for hemlocks" (1, p. 17). The five stands 100 or more acres in size, plus one companion 10-acre stand, are described below. Carbonneau did not sample Hurlbert Swamp, also presented below. She wrote that "undoubtedly there are other uncut stands remaining and many high altitude balsam fir stands will qualify as old-growth using [my] criteria" (1, p. 25).

William A. Reiners and Gerald E. Lang studied the upper subalpine or fir zone in the White Mountains of New Hampshire. This zone extends from approximately 1220 meters to 1450 meters (from the upper limit of Red Spruce to treeline). They noted that "this vegetation affords an unusual opportunity for the study of natural stand dynamics because it is virtually untouched by logging" (7, p. 406). Due primarily to elevation and wind exposure and secondarily to such factors as hurricanes and avalanches, individual trees average only 50 years in age. Regeneration of a segment often begins before all the trees in the preceding generation have died. Tree species present are limited to Balsam Fir, Heart-leaved Paper Birch (*Betula papyrifera* var. *cordifolia*), Red Spruce, Black Spruce (*Picea mariana*), and Mountain Ash (*Pyrus americana*). Reiners and Lange state that "there is a high degree of similarity between the New Hampshire White Mountains, the White Mountains of Maine, the Green Mountains of Vermont, the Adirondack Mountains of New York, and upland areas of adjacent Canada" (7, p. 403). Unfortunately, the spruce-fir zone throughout the Appalachians is being damaged by acid rain and ozone pollution.

Nancy Brook, in White Mountain National Forest between Bartlett and Harts Location

1000 acres of Red Spruce-Balsam Fir forest at an elevation of 1400'-3900.' Comparison of Carbonneau's data with data collected by Oosting and Billings in 1951 appears to indicate that the basal area of spruce in the stand decreased by 68% in 33 years, Carbonneau points out (1, p. 37).

Gibbs Brook Scenic Area, in White Mountain NF

890 acres of Red Spruce-Balsam Fir forest and 10 acres of Eastern Hemlock-hardwoods at an elevation of 2000'-4300.' The small hemlock stand is 60% hemlock (basal area), with beech, Red Maple, spruce, and birch also present.

The Bowl Research Natural Area, in the south of White Mountain NF (Grafton County)

500 acres of northern hardwoods (Sugar Maple, Yellow Birch, and beech) at an elevation of 1900'-2500'. The relative abundance of Yellow Birch suggests that this stand may have undergone a more recent severe natural disturbance or a "period of more frequent patchy disturbance" than has Mountain Pond described below (1, p. 43). According to the US Forest Service, the RNA is 510 acres and has areas of Red Spruce and of Paper Birch in addition to the Sugar Maple, Yellow Birch, and beech that Carbonneau describes [8].

Hurlbert Swamp, in northeastern NH (Coos County)

An old-growth Northern White Cedar (*Thuja occidentalis*) swamp, most of which became the property of The Nature Conservancy in 1988 as the result of a 284-acre acquisition (6). The cedar in TNC's portion of the swamp appears uncut.(2).

continued on page 26

NORTHEAST . . .

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Mountain Pond, near the Maine border, in White Mountain NF

150 acres of northern hardwoods at 1600'- 1800.' The "low density of yellow birch" and "the high closure of the canopy" lead Carbonneau to believe that the stand has not experienced a catastrophic natural disturbance for several centuries (1, p. 43). The stand has a smaller percentage of herbaceous ground cover than any of the other stands she studied. Herbs compete here with "a very large sugar maple seedling population" (1, p. 75).

Norton Pool, in northeastern NH (Coos County)

110 acres of virgin Red Spruce-Balsam Fir forest, donated to The Nature Conservancy by Champion International Corporation as part of a 427-acre Norton Pool Preserve. The Spruce Budworm destroyed 80-90% of the fir trees, but they are vigorously regenerating. The tract is believed to be the state's only "low- elevation, first-growth spruce-fir forest" (4).

SOURCES:

(1) Carbonneau, Lee Ellen. Old Growth Stands in New Hampshire: A Preliminary Investigation. 1986. Thesis for UNH, Durham, NH.
(2) Clark, Kathleen, Secretary, New Hampshire Field Office of The Nature Conservancy. 1990, Jan. 24. Letter.
(3) Hentey, Edie F., Data Manager/Biologist, NH Natural Heritage Inventory. 1989, May 12. Letter.
(4) Hoose, Phillip M. 1988. A Stand for the Ages. The Nature Conservancy Magazine 38(5):19-23.
(5) Leak, William B., Louis C. Wyman Forestry Sciences Laboratory. 1989, May 24. Letter. William Leak pointed out Carbonneau's study and work of the Maine State Planning Office.
(6) The Nature Conservancy. 1988. Annual Report. TNC Magazine 38(6):22.
(7) Reiners, William A. and Gerald E. Lang. 1979. Vegetational Patterns and Processes in the Balsam Fir Zone, White Mountains, NH. Ecology 60(2):403-16.
(8) US Forest Service. 1987, Jan. Research Natural Areas by Region. [Furnished by the Southeast Regional Office, Feb. 9, 1990.]

NEW JERSEY

Tom Breden of the New Jersey Natural Heritage Program reports that the program has not done a thorough survey of all the mature stands of trees. The state may have a fair number of old and mature forest patches, including small tracts with trees over 100 years old. Only three sizable largely uncut and ungrazed areas are known, however; and they are not in the Pine Barrens, the natural area most familiar to people outside the state.

The Pine Barrens have "nothing that fits into the primeval category," Breden says, because of both natural and anthropogenic disturbances. Natural fire is common in the Pine Barrens; and people have exploited the area's resources (1). As the New York-New Jersey Trails Conference puts it, "First to move in were the loggers, who cut clean. Pine and cedar lumber moved steadily to shipyards and nearby towns for years before, during, and after the Revolution" (3, p. 342). Charcoal production and iron ore mining were two local industries for which trees were cut. Southern New Jersey once had extensive Atlantic White Cedar swamps, but the trees were valuable as timber, and now only pockets remain (1).

Bear Swamp East (Cumberland County)

115 acres of old-growth swamp forest within a larger 1200- 1500-acre forest. The canopy trees are Red Maple, Sour-Gum (*Nyssa sylvatica*), Tulip Poplar, American Beech, Sweetgum (*Liquidambar styraciflua*) and Swamp White Oak (*Quercus bicolor*). The understory is Sweetbay Magnolia (*Magnolia virginiana*), Ironwood (*Carpus caroliniana*), and American Holly (*Ilex opaca*). Canopy trees are as large as 143 centimeters dbh. New Jersey's only Bald Eagle nest is in the swamp, which is owned by the state (1).

Bear Swamp West (Cumberland County)

70 acres of old-growth swamp forest within a 1200-acre forest, separated from the large forest mentioned above by gravel mines and roads. The west swamp has the same species as the east (1). **William L. Hutcheson Memorial Forest** (Middlesex County)

A 65-acre tract of mixed oak forest, surrounded by 80 acres of agricultural fields. The forest "has been uncut since 1790." The canopy is dominated by White Oak, Black Oak (*Quercus velutina*), and Red Oak, with some trees almost 400 years of age. American Beech, White Ash (*Fraxinus americana*), Shagbark Hickory (*Carya ovata*), and Pignut Hickory (*Carya glabra*) are also present. A 1950 storm, by felling many large trees, accelerated the growth of the dogwood and oak understory, now more than 40' tall. The Nature Conservancy helped to obtain the forest's protection in 1955. Currently it is owned by Rutgers University (2).

SOURCES:

(1) Breden, Tom, Ecologist, New Jersey Natural Heritage Program. 1990, March 13. Phone call.
(2) Johnson, A. Elizabeth, Director, Science & Stewardship, NJ Field Office of TNC. 1990, March 30. Letter, with descriptive page.
(3) The New York-New Jersey Trail Conference. 1984. New York Walk Book. Doubleday/Anchor, Garden City, NY.

NEW YORK

In order to protect natural areas, the New York Natural Heritage Program (NYNHP) and the New York Chapter of The Nature Conservancy do not release for general publication information on old-growth sites. For examples of old-growth in New York, Carol Reschke, community ecologist with the NYNHP, points to an article on old-growth in *Natural Areas Journal* (5). Below we give brief descriptions of the areas presented in this article of more than 100 acres in size. The article and the 1987 study that gave rise to it analyzed stands of at least 8 hectares "with no evidence of selective or clearcut logging . . . or other evidence of human influence" (3, p. 169). The criteria do not require that stands have *never* been logged. The only area that the article characterizes as "virgin" is Five Ponds Wilderness.

The 1987 study was the first stage of an inventory of old- growth in New York by the NYNHP. The study began with Adirondack Park, "because it is the least disturbed portion of the state" (3, p. 169). The research in the Park was not exhaustive, as it concentrated on the north-central portion. "There is certainly potential for identifying additional old-growth stands within Adirondack Park" (3, p. 183), it concludes; and it points out that Catskill Park, Allegany State Park, and private lands should also be inventoried. Therefore what we give below is only a sample of what exists. Indeed Carol Reschke says that New York has other areas of old-growth, some of them "pristine" (5). Robert T. Leverett told us of an old-growth area in Catskill Park, with which we conclude the NY list.

Five Ponds Wilderness in western Adirondack Park

49,000 acres of virgin old-growth forest, interspersed with lakes. J. R. Roman, who studied the area for a 1980 doctoral dissertation, describes four forest communities: poor fen, rich fen, upland conifer, and upland mixed. In the poor fens are Black Spruce, Red Spruce, Tamarack (*Larix laricina*), and Balsam Fir. Red Spruce and Balsam Fir are almost the only trees in the rich fens. Upland conifer stands are dominated by White Pine, "some of which are huge and form a super-canopy." Among the upland mixed communities are beech- maple mesic, hemlock-northern hardwood, and spruce-northern hardwood forests (3, p. 175). ('Mesic' refers to forests characterized by a moderate moisture regime.)

Kildare, in Hopkinton, Adirondack Park

593 acres of spruce-northern hardwood forest. Like McKenzie Mountain, this site contains many Sugar Maple of all sizes, many small Red Spruce, and Yellow Birch. The birch are represented by a few very large, living trees and a few large, standing, dead trees. A diverse shrub layer is characterized by Red Raspberry (*Rubus idaeus*), Dwarf Blackberry (*Rubus pubescens*), and Hobblebush (*Viburnum alnifolium*). Sugar Maple and Red Spruce are among the saplings. Most of Kildare is privately owned, but the state owns small inholdings.

Ampersand Mountain in Harrietstown, Saranac Lakes Wild Forest, Adirondack Park

494 acres of old-growth hemlock-northern hardwood forest. In this area, and in Roaring Brook described below, are many large Eastern Hemlock, a few large Sugar Maple, and many smaller beech. The most usual subcanopy tree is Striped Maple. In the sparse shrub layer are Sugar Maple, beech, Striped Maple, Eastern Hemlock, and Red Spruce saplings. Hobblebush is the most common shrub.

Phelps Brook, in North Elba, High Peaks Wilderness Area, Adirondack Park

200 acres of old-growth mountain spruce-fir forest, with Balsam Fir dominating. Heart-leaved Birch is also present in the canopy. The shrub layer consists mainly of Balsam Fir and Red Spruce saplings. Roaring Brook, in Keene, Giant Mountain Wilderness Area, Adirondack Park

150 acres of old-growth hemlock-northern hardwood forest.

McKenzie Mountain, North Elba, McKenzie Mountain Wilderness Area, Adirondack Park

150 acres of old-growth spruce-northern hardwood forest. Kaaterskill Falls, in Catskill Park (Greene County)

50-100 acres of old-growth within the clove leading up to Kaaterskill Falls, the highest waterfall in the Northeast. Hemlock, White Pine, Red Oak, and Yellow Birch dominate. The NY State Department of Environmental Conservation owns the area (2, 4).

SOURCES:

(1) Carovano, J. Martin, State Director, New York Field Office of The Nature Conservancy. 1989, Dec. 29. Letter.
(2) Susannah Lawrence and Barbara Gross. 1984. The Audubon Society Field Guide to the Natural Places of the Mid-Atlantic States: Inland. NY, Pantheon.
(3) Leopold, Donald J., Carol Reschke, and Daniel S. Smith. 1988. Old-Growth Forests of Adirondack Park, NY. Natural Areas Journal 8:166-89.
(4) Robert T. Leverett. 1990, March 26, April 8. Letter, phone call.
(5) Reschke, Carol, Community Ecologist, NY Natural Heritage Program. 1989, May 10. Letter.

PENNSYLVANIA

Thomas L. Smith of the Pennsylvania Natural Diversity Inventory, who surveyed the state's old-growth in *Natural Areas Journal*, wrote that in "attempting this initial review . . ., it has become alarmingly clear how little information is available on this critical natural resource. A thorough inventory and mapping of quantity, quality, and composition . . . is needed" (10, p. 43). The one complete study was conducted by the Pennsylvania Bureau of Forestry on its own lands. The Bureau identified 13 old-growth areas, which it protected by designating them state forest natural areas.

R. G. Croop, Forest Resource Planner with the Bureau of Forestry, reports that the Bureau administers 1580 acres of "virgin and/or old growth timber" on state forest lands. It is mostly hemlock that could not be reached when the state forests were cut over in the late 19th and early 20th centuries (3).

Pennsylvania, "Penn's Woods," is today 58% wooded, with 16,800,230 acres of forest. Working largely from written sources, Smith identified 40 sites of old-growth hemlock-northern hardwood forest, totaling 12,090 acres; 8 sites of Appalachian oak forest totaling 1284 acres; 10 mixed-mesophytic sites totaling 790 acres; and 5 beech-maple sites with a total of less than 150 acres. He selected sites that were 20 or more acres in size and "free of major human disturbance. Some sites may have been selectively logged more than 100 years ago" (10, p. 41). Since not all the sites listed below are from his article, these criteria may not apply to all our examples.

A list of "Virgin Forests in Pennsylvania" that Croop furnished includes (in addition to several of the tracts described below and 5 old-growth or virgin tracts of less than 50 acres): Sweet Root—69 acres of virgin hemlock (Bedford County); Joyce Kilmer—77 acres of virgin White Pine-hemlock (Union County); and Bark Cabin—73 acres of old- growth hemlocks and second growth oak (Lycoming County) (3).

Eastern Pennsylvania is the site of extensive Pitch Pine—Scrub Oak barrens (*Pinus rigida, Quercus ilicifolia*) which are subject to frequent fires. Long Pond Macrosite contains 5740 acres (Monroe County) and Arbutus Peak Oak Barren Macrosite (Luzerne County), 5313 acres (9).

The Nature Conservancy's 803-acre Goat Hill Serpentine Barrens (Chester County), on an outcropping of green serpentine rock, represents a community type that occurs only in Pennsylvania and Maryland. The undisturbed barrens include Pitch Pine forests as well as wildflower meadows and cliffs. "The hairy field chickweed, proposed for endangered species status, grows nowhere else in the world. Five other very rare plants, the serpentine aster, glade spurge, pink milkwort, prairie dropseed, and round-leaved fameflower also thrive here" (8).

Because of the large number of sites in Pennsylvania, we have divided them into 3 geographic areas: east, center, and west.

Eastern Pennsylvania

Lost Lakes (Monroe County)

550 acres of old-growth northern hardwood forest. The Natural Heritage Inventory-East does not know who owns it (9). Woodbourne Forest and Wildlife Sanctuary, in northeastern Pennsylvania (Susquehanna County)

A 200-acre virgin hemlock-northern hardwood forest on an 803-acre preserve owned in part by TNC and in part by the state through a transfer from TNC. Hardwoods include beech, Black Birch, and Sugar Maple. Nine species of salamander live in the forest, and the declining Cooper's Hawk (*Accipiter cooperii*) is among the many birds that nest there. It is the largest virgin tract in northeastern Pennsylvania (8).

Jeans Run Gorge (Carbon County)

140 acres of old-growth northern conifer forest, owned by the Pennsylvania Game Commission (9). Otter Creek Natural Area in southeastern PA (York County)

100 acres of mixed mesophytic forest on the Susquehanna River, owned by Pennsylvania Power and Light Company (10, p. 43).

Central Pennsylvania

Tall Timbers State Forest Natural Area (Snyder County)

A 1080-acre, old-growth forest of Eastern Hemlock, owned by the PA Bureau of Forestry (9). Frank Masland State Forest Natural Area, in south-central PA (Perry County)

1000 acres of old-growth Appalachian oak forest: Chestnut Oak (*Quercus prinus*), White Oak (*Quercus alba*), Red oak, hickory (*Carya* spp.). Appalachian oak is the state's major forest type, but the Masland area, which is owned by the Bureau of Forestry, is one of only two protected old-growth tracts of this type (10, pp. 42-43). Six old-growth Appalachian oak tracts are unprotected.

Snyder-Middlesworth Natural Area, in Bald Eagle State Forest (Snyder County)

500 acres of virgin White Pine, Pitch Pine, and hemlock (3). Detweiler Run Natural Area, in Rothrock State Forest, south-central PA (Huntingdon County)

185 acres of virgin White Pine-hemlock, with rhododendron understory (3).

The Hemlocks, in Tuscarora State Forest (Perry County)

131 acres of virgin hemlock and cove hardwoods (3) (hardwoods growing in a rich, protected area, such as a concave slope). Presumably this stand is the same as that the Natural Heritage Inventory-East lists, under the same name and in the same county, as 110 acres of Eastern Hemlock conifer forest (9).

Alan Seeger Natural Area, in Rothrock State Forest (Huntingdon County)

118 acres of virgin Eastern Hemlock-White Pine, with rhododendron understory (3).

Western Pennsylvania

Tionesta Scenic and Research Natural Areas (SNA and RNA) in Allegheny National Forest in northwestern Pennsylvania (McKean and Warren Counties)

4131 acres of "virgin," old-growth (2) climax hemlock-beech forest in a single tract, divided into a 2018-acre SNA and a 2113-acre RNA, both administered by the US Forest Service. This tract and the Hearts Content Scenic Area were purchased by the federal government, because they were the only uncut remnants of a 6 million acre hemlock-beech forest that once covered the Allegheny Plateau (1). The Forest Service describes the RNA as Eastern Hemlock; Sugar Maple-beech-Yellow Birch; beech-Sugar Maple; and Black Cherry (*Prunus serotina*)-Maple (11). Mohlenbrock writes that in the SNA beeches and hemlocks more than 100' tall tower over Sugar Maple, Red Maple, Black Birch, Yellow Birch, basswood, Black Cherry, Tulip Poplar (*Liriodendron tulipifera*), and even Cucumber Magnolia (*Magnolia acuminata*) (7, p. 8). In 1985, after Mohlenbrock had published his guide, 800 acres of the Scenic Area were flattened by a tornado. Salvage work was done on pipelines and existing roads (10, p. 42). The browsing of deer hinders the regeneration of species other than the unpalatable beech, and has all but removed Hobblebush from the understory (1). The Bobcat (*Felis rufus*) is an imperiled species present (5).

McConnells Mill Stand, in McConnells Mill State Park (Lawrence County)

200 acres of old-growth mixed mesophytic forest: hemlock- White Oak-Red Oak-Tulip Poplar-White Basswood (*Tilia heterophylla*). This forest type is found in southwestern Pennsylvania and along the Susquehanna in southeastern PA (10, pp. 41, 43).

Cook Forest State Park (Clarion County)

171 acres of old-growth (3).

Forrest H. Dutlnger Natural Area, in Susquehannock State Park (Clinton County)

158 acres of old-growth hemlock (3).

Hearts Content Scenic Area, in Allegheny National Forest (Warren County)

122 acres of virgin old-growth, including mature White Pine in the overstory, hemlock, beech, Sugar Maple, and Red Oak (2). Walt Franklin writes of a segment that is predominantly White Pine, "maybe 20 acres" with "impressive trees approaching 400- 500 years old, 150-200 feet in height" (6).

Bear Run Nature Preserve in southwestern PA (Fayette County)

100 acres of old-growth Appalachian oak forest owned by the Western Pennsylvania Conservancy (10, pp. 42-43).

Crulls and Thompsons Islands in Allegheny River, in Allegheny NF (Warren County)

A total of 140 acres of old-growth floodplain forest, characterized by Silver Maple, American Elm (*Ulmus americana*), Eastern Sycamore (*Platanus occidentalis*), and White Ash. This forest type is rare in the state (10, p. 43).

Tyron-Weber Woods, in northwestern PA (Crawford County)

40 acres of old-growth beech-maple forest in an 84-acre tract owned by the Western PA Conservancy. This is the largest known stand of old-growth beech-maple in the state (10, pp. 41-42).

SOURCES:

(1) Bjorkbom, John C. and Rodney G. Larson. 1977. The Tionesta Scenic and Research Natural Areas. FS General Technical Report NE-31.
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(3) Croop, R. G. Forest Resource Planner, Bureau of Forestry, Commonwealth of PA. 1990, Feb. 13. Letter, with list of "Virgin Forests in Pennsylvania." "Rev. 9/79."
(4) Drayton, Eugenie B., Data Manager, PA Natural Diversity Inventory—East. 1989, Dec. 13. Letter, with enclosures.
(5) Federal Committee on Ecological Reserves. 1977. A Directory of Research Natural Areas on Federal Lands of the United States of North America. Forest Service, US Department of Agriculture.
(6) Franklin, Walt. 1989, June 27, Nov. 6, Nov. 20. Letters.
(7) Mohlenbrock, Robert H. 1984. The Field Guide to U.S. National Forests. Congdon and Weed, NY.
(8) Nature Conservancy. [Booklet describing preserves of the Eastern Pennsylvania Chapter of TNC.]
(9) Smith, Thomas L., Coordinator/Plant Ecologist. Pennsylvania Natural Diversity Inventory-East. 1989, April 25. Letter, with list of Known Old Growth Forest Stands in Eastern PA, 4/25/89.
(10) Smith, Thomas L. 1989. An Overview of Old-Growth Forests in Pennsylvania. Natural Areas Journal 9(1):40-44.
(11) Forest Service. 1987, Jan. Research Natural Areas by Region.

RHODE ISLAND

Rick Enser of the Rhode Island Natural Heritage Program writes that all presettlement forests were felled during the 18th century, when more than 80% of the land in the state was converted to agriculture. Many of the farms have since been abandoned, and forests have regrown. Currently an estimated 60% of the state is forested. Some "older second-growth forest" can be found, but nothing virgin (1).

SOURCE:

(1) Enser, Rick, Coordinator/Botanist, RI Natural Heritage Program. 1989, April 26. Letter.

VERMONT

Vermont has at least two sizable areas of virgin or near- virgin old-growth, described below; and Everett Marshall of the Vermont Natural Heritage Program, points out several stands of less than 50 acres: Cambridge Pine Woods (Lamoille County)—22 acres of White Pine and hemlock, some trees in the 36-48" diameter range (6) although they are only 110-120 years old (10); Lord's Hill Hardwood Forest (Washington County)—13-acre climax community, with some trees of the 12 tree species exceeding 100' in height and 40" in diameter, and some others exceeding 400 years of age (6); Canfield-Fisher Memorial Pines (Bennington County)—13 acres of White Pine with diameters up to 42" and heights up to 130' (6), although, like the trees in Cambridge Pine Woods, they are relatively young (10); Gifford Woods (Rutland County)—5 acres, hardwoods (6). In the 37-acre Roy Mountain Red Pine Stand, the "best developed part," where large Red Pines associate with hemlock, is only about 8 acres (9). The Red Pine are not reproducing, as the stand needs to be rejuvenated by fire (10). Vernon Black Gum Swamp (Windham County) is 5 acres, containing 4 separate, small stands; but the swamp is of great biological interest, as it is a virgin relic with species normally found farther south, including the Black Gum and ferns. Black Gum swamps are always pocket size (6, 10).

Camel's Hump State Forest, south of Burlington in Huntington and Duxbury.

A 10-15-acre patch of virgin forest plus extensive old-growth acreage, all on the west side of the mountain. Hubert Vogelmann of the University of Vermont reports that a doctoral student discovered the uncut and unburned area in the spruce-fir zone, after conducting a meticulous study of the cutting history of the mountain. In the spruce-fir zone as a whole (2800'- 4000'), the cutting occurred in the mid-19th century and was selective, with only a few trees picked. More cutting was done in the hardwoods, but the last cut was in 1954- 1955 and was selective. The mountain at both the lower and higher elevations has the characteristics and the feel of old-growth, Dr. Vogelmann says.

Charles Vile, State Lands Forester, writes that during a period of almost 20 years, he has "cruised much of the park below" 2800' and walked over much of the rest, but has encountered no "stands," "not cut or disturbed by non-aboriginal people," only some individual trees more than 125 years old. There may, he says, be "isolated clumps of old trees high on the mountains" (11). The Audubon Society Field Guide to Natural Places of the Northeast: Inland, and the Maine State Planning Office both express a point of view similar to that of Dr. Vogelmann: "Up to 2600 feet the mountain is covered with a northern hardwood forest in a near-virgin condition. Sugar maple is widespread along with beech and yellow birch. Hobblebush, mountain maple [*Acer spicatum*], and striped maple are common shrubs of the understory" (2, p. 104). "The upper western slopes (2800-3900 feet) . . . support a relatively undisturbed montane boreal forest. The dominant trees vary from red spruce with balsam fir and paper birch at the lower elevation to pure balsam fir at the higher elevation" (3, p. 5).

Battell Biological Preserve, in Middlebury Township

400 acres of virgin hardwoods and softwoods on the west slope of South Mountain at an elevation of 600'-1100'. Hemlock, with diameters of 30" or more, dominate, and "large sugar maples, beeches, and yellow birches" as well as a scattering of other species are present. Mountain Maple and, with a dbh up to 6", Striped Maple dominate the understory. The tract was apparently saved from cutting because loggers could not easily reach it. Natural fires and blowdowns have affected the area. Now it is in the Green Mountain National Forest Proclamation Boundary and is owned by the Middlebury College Biology Department (4, 8, 10).

SOURCES:

(1) Druke, Thomas, Conservation Education Section, Department of Forests, Parks, and Recreation. 1990, Feb. 6. Letter.
(2) Kulik, Stephen and others. 1984. The Audubon Society Field Guide to Natural Places of the Northeast: Inland. Pantheon, NY.
(3) Maine Critical Areas Program of the State Planning Office. 1983. Natural Old-Growth Forest Stands in Maine and Their Relevance to the Critical Areas Program. Planning Report no. 79. Maine State Planning Office, Augusta, ME.
(4) Everett Marshall, Information Specialist, Vermont Natural Heritage Program. 1989, May 17. Letter.
(5) Thompson, E. H. 1988. Natural Communities of Vermont. VT Natural Heritage Program, Waterbury, VT.
(6) Vermont, State of. 1982. Vermont Fragile Areas Registry. Agency of Natural Resources, Waterbury.
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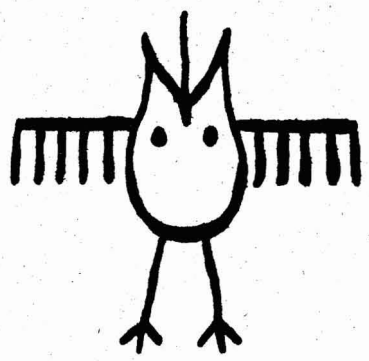
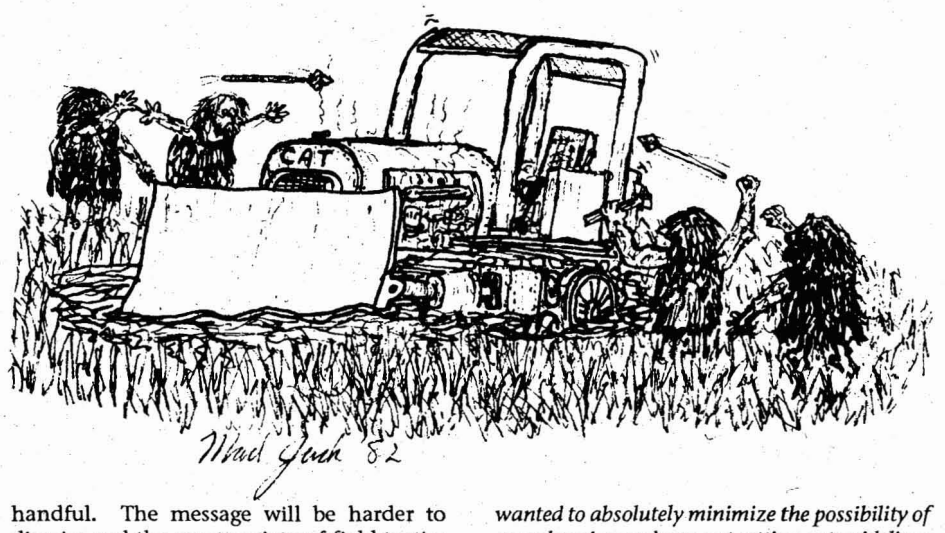
(10) Vogelmann, H.W., U of VT. 1990, March 13. Phone call.
(11) Vile, Charles, State Lands Forester. 1990, Feb. 23. Letter.

Mary Davis is a freelance environmental writer and the author of The Green Guide to France *and of the upcoming book* From Walden Pond to Muir Woods: Alternative Ways Across America.



DEAR NED LUDD

DEAR NED LUDD is a regular feature in *Earth First!* for discussion of creative means of effective defense against the forces of industrial totalitarianism. Neither the Earth First! movement nor the staff of *Earth First!* necessarily encourage anyone to do any of the things discussed in DEAR NED LUDD.



Dear readers

My apologies for the absence and irregularity of this column during the past year. I plead sloth, indolence and diverse distractions as keeping me from my responsibilities here. I shall endeavor to return "Dear Ned Ludd" to its former appearance and heft in these pages.

I also must apologize for the non-appearance of THE ECODEFENSE SUPPLEMENT. My excuses are as lame as those above, as well as being the same. This summer I will be hard at work on the SUPPLEMENT with the goal of publication in time for Yule gifts. If any of you have additions, criticisms, or improvements of the material in ECODEFENSE, please send them to Ned Ludd, POB 5141, Tucson, AZ 85703.

Happy wrenching
Ned

Dear Ned

Those who call anti-environmental hotlines and corporate 800 numbers (published in the *Earth First! Journal* and elsewhere) might not realize that their phone numbers are being recorded. Anti-wilderness fanatic Grant Gerbil of the 1-800-SABOTAGE monkeywrenching hotline in Nevada is receiving lists of all phone numbers that have called his hotline. Most calls to the hotline have been unfriendly or have reported overgrazing or logging as public lands sabotage, but Gerbil says that's fine with him — since he's compiling a list of potential or actual saboteurs. Seems that if you use your home phone to call such hotlines, you're monkeywrenching yourself. Think before you act. Don't give the Sagebrush Fascists your number.

— The Nevada Kid

Dear Ned

North Carolina and many other states make it a felony (up to 10 years in prison) to burn something but only a misdemeanor (up to 2 years) to destroy something without fire. This makes for a vast difference in liability and how the system addresses the perpetrator. Those contemplating the decommissioning of destructive equipment might want to check their state's laws to determine whether fire or sand carries the lighter penalty.

— Tarheel attorney

Dear Ned

I am quite confident that the FBI or related agencies photograph much of your incoming mail. I used my own return address on this letter because I do not engage in any illegal activities — resources expended to monitor me by the government will make it easier for others who choose to act. Therefore, from time to time, it might be a good idea for others around the country to write to you and utilize another person's name and address. The FBI will be creating new files on people who are inactive or, even better, people they thought were on the side of the government. The Feds will waste lots of energy if they see a return address of a Forest Service employee, a Congressperson's aide, a police officer . . . you get the drift. Give the authorities a whiff of a mole and they'll run dry trails for a long time.

— A friendly DA

If anyone chooses to follow this advice they should be absolutely certain that the person whose address they use is an Earth enemy and not a secret supporter of preservationists. There are, for example, hundreds of Forest Service employees who support the ending of all mature forest logging; there are even law enforcement officers who secretly sympathize with Earth First! and other preservation groups.

— Ned

Dear Ned

There is a new kind of camera on the market — SVCs or still-video cameras — that does not use film. Sony has one called the Consumer Mavica which sells for $650 and is about the size of a 35mm camera. With a $220 adapter, images stored on the silicon chips in the SVC can be played back on a television or turned into a hard copy with a special printer. Such images can even be entered into a computer and altered. For example, people in the photo can be removed or relocated. There are interesting possibilities here for the techno-prankster.

— Ansel Adams

Dear Ned

What with the recent FBI effort to destroy the Earth First! movement and intimidate all action-oriented preservationists, EF!ers might want to check into what records government agencies have on them. Write your member of Congress (Rep. _____, House of Representatives, Washington, DC 20515) and ask for a free copy of House Report 100-199, *A Citizen's Guide on Using the Freedom of Information Act and the Privacy Act of 1974 to Request Government Documents.*

— William Sessions

Dear Ned

Some thoughts from your friendly criminal defense lawyer:

√ Cutting livestock fences in Texas is a 3rd degree felony and can get you 10 years pen time, not 5 as suggested in ECODEFENSE.

√ Don't have any weapons on you when doing unmentionables, unless it's obviously a hunting weapon and part of your cover — lots of states have laws increasing the amount of time served behind bars before one is eligible for parole when a deadly weapon is "used or exhibited" during the commission of the offense, even when it's not a violent-type offense. Here in Texas, it's been applied to simple dope possession cases. On a 10 year sentence, a deadly weapon finding will make a person spend 14 - 18 months more before becoming eligible for parole than the same 10 year sentence without the deadly weapon finding.

√ The powers that be usually pronounce monkeywrenching as "criminal mischief." Grade of offense is usually based on amount of $ damage or inconvenience caused. Since the objective is to cause the most possible inconvenience/cost, most successful monkeywrenching (whether involving fences or not) will be a felony. $750 is the break point here, similar to most other states.

√ Dot matrix printers are harder to trace than typewriters.

√ Enjoyed the disclaimers in ECODEFENSE. Like you all, I'd rather just sit around and drink beer and lament how fast the roads in the Gila NF deteriorate.

— Sam Houston

Dear Ned

I was recently discussing the topic of tree spiking with my father, a reformed contractor, and he told me of a wonderful tool that was developed for shooting nails into concrete. There are two brands of this gun. The more powerful and hence more expensive one is called the Ramset and the other is called the Hiltie.

He tells me that they would easily shoot the large nails for which they were developed deep into the heart of a tree trunk where they would be virtually irretrievable. There is a safety on the gun which must be touching the intended target or it will not fire. This safeguard insures that the gun cannot accidentally go off.

There are drawbacks, however. The gun makes the sound of a 22-caliber handgun which, although more natural to hear in a forest than a hammer, could make secrecy a problem. The second drawback is cost. I imagine they are not cheap. Nonetheless, this gun warrants further research.

Another possibility would be to shoot the tree with actual bullets. Regular lead bullets could be harmful to the tree but perhaps brass coated bullets might be an option worth considering.

Remember, before carrying out any illegal activity, read the section in ECODEFENSE on security. You will be of much more help to the movement outside of prison.

— Mother Earth Mama

If anyone has direct experience with nail guns for tree spiking, please write with your results and recommendations.

— Ned

Dear Ned

Lots of thoughts on "Whither Monkeywrenching" and "The Perils of Illegality" by Dave Foreman. Much of what Dave says is related to security. It should be obvious to everyone by now that security has not been given enough attention. By all means, heed the warnings. However, I am troubled by a couple of Dave's points.

I don't think we should discourage monkeywrenching by visible Earth First!ers, those involved in other conservation activities, or those with poignant bumper stickers. The tactic of monkeywrenching will only be successful if it is practiced widely. The sum of many minor actions by many people will be more effective than a few major actions by a handful. The message will be harder to dismiss and the great variety of field tactics will make arrest and prosecution more difficult. Moreover it will greatly reduce the need or temptation for "violent" techniques; a hack saw and lots of patience can do more constructive damage than explosives, and the effect will be selective and focused.

Being as effective as possible should not preclude the targeting of major industrial facilities as Dave suggests. A bold monkeywrenching action against such a facility may accomplish as much constructive damage as a whole lifetime of survey stake pulling or tree spiking. Of course the risk is tremendous and the chance of extreme negative public reaction high. Careful planning is a must.

It may be that such action is only appropriate for someone who has little monkeywrenching history and doesn't plan any more afterward. That would deny the "authorities" the chance to compare *modus operandi*. It does, however, require extensive knowledge and familiarity with security procedures. It's a good reason to practice such procedures even if you never intend to do anything illegal. Be prepared: opportunity comes unannounced.

I also disagree with Dave's suggestion to disavow acts that seem stupid. The acts may only *seem* stupid. See Lynn Jacob's letter in Beltane '89 concerning the Dixon, CA, livestock auction barn arson. We should be willing to support the principle of monkeywrenching even when the details of a specific action or the chosen target are questionable. When pressed we may disavow those specifics but we should remain the advocate for the goals, the defenders of the principle for the action. To thwart black-and-white judgments, try to find something positive in every action even if it is just sympathy for the monkeywrenchers. Limiting our moral support to those acts we might consider doing ourselves may shield us from uncomfortable situations. However, such selective support will only weaken and divide the movement.

Dave suggests that breaking immoral laws is justified only after all legal means have been exhausted. This seems to imply that when we can't afford extensive litigation, we should capitulate. I believe monkeywrenching should be considered a legitimate defense tactic when legal defense is simply overwhelming; a reasonable tool in the rebellion of the meek. We should keep in mind how limited the options are for the least of us; indeed for the not-so-least of us. We delude only ourselves when our prescribed means to justice are well beyond the reach of many.

So much for the criticism. Now for an addition. We should, I believe, try a little harder at letting humor and good feelings show in our actions including monkeywrenching. Leave some flowers or chocolate bars on that disabled 'dozer. Send a pressed flower along with a notification of spiking — or a poem. Have some coffee and cups ready for the gendarmerie and truck drivers at a logging road blockade. Smile a lot. Let our sympathy and respect for all life shine through.

I approve and support most of what Dave has written about monkeywrenching and illegal activities. My objections are minor and meant only to be constructive. However, the discussion of tactics and procedures must not cause us to lose sight of our goals. Proceed with caution, yes. We must consider the well being of the Earth First! movement, how friends and family will judge our actions, how we will be judged in posterity. But proceed we must. Our goal is to defend the Earth and its beautiful biocommunity. As the anonymous writer in the Beltane '89 Ned Ludd section suggests, procrastination must not get in the way; caution must not become an excuse for inaction. Do it!

— Boatswain Sam

Dear Sam

Thanks for your extremely thoughtful and thought-provoking letter. Foreman tells me he agrees with virtually everything in it and will revise his essays for future publication to better meet your criticisms. Note that he was suggesting techniques for the monkeywrencher who wanted to absolutely minimize the possibility of apprehension and was not setting out guidelines for everyone. He will make that more clear in the revised version of those essays as they appear in his forthcoming book from Crown Books, CONFESSIONS OF AN ECO-BRUTE.

— Ned

Dear Ned

Anything written with a "sky blue" felt pen won't photocopy, no matter what you do. When folks have only one copy of your correspondence, it makes them a bit uptight in today's info-age.

— Endo

Dear Ned

Tips for using epoxy paint on signs:

Drill out the orifice slightly to speed application.

Squirting a single spot of red in the center of a grazing cow sign until it flows is stunning — it looks like the cow on the sign was shot!

— Michaelangelo

Dear Ned

Light spraying of WD40 or other spray type oil on license plate and back of vehicle can somewhat mask color of vehicle and render license plate "naturally" unreadable.

— Mr. Goodwrench

MONKEYWRENCHING NEWS FROM AROUND THE WORLD

NEVADA — Knowledgeable Nevada conservationists believe the recent media hype about anti-ranching monkeywrenching is vastly overblown. They believe that most of the incidents reported in the media are the standard acts of vandalism by hunters. Nonetheless, Nevada Sen. Richard Bryan has used the rumors of increased monkeywrenching to justify his co-sponsorship of a bill introduced by Sens. Lloyd Bentsen of Texas and Jesse Helms of North Carolina which makes it unlawful to vandalize, trespass or remove animals from any farm animal facility. Does anyone have current information on the status of the Farm Facilities Protection Act? If so, please send us your info.

AUSTRALIA — In December, an experimental $250,000 tree harvester was torched in Bulga State Forest.

WISCONSIN — Midwest monkeywrenchers might want to check an "anti-terrorism" bill proposed in the Wisconsin state legislature. Although not directed against ecodefenders *per se*, the bill creates additional penalties for any crime "committed with the intent of influencing the policy of a governmental unit or of punishing a governmental unit for a prior policy decision." It would apply to crimes of property damage or those involving the threat or use of violence. The bill, AB 402, was passed by the Assembly in February and moved to the Senate.

NORTH CAROLINA — Monkeywrenchers have hit timber sale operations on the Pisgah National Forest this spring. A logging machine used in clearcutting was damaged to the tune of $1500 by cutting hydraulic hoses and driving wooden stakes into tire valve stems. Earlier a logging equipment yard was entered, and a bulldozer started up and used to push a skidder over a mountainside. The 'dozer was left running at full throttle and damaged its engine. Damage was estimated at $10,000. T&S Hardwoods is offering a $25,000 reward and sheriff's deputies are investigating.

Also on the Pisgah NF this spring, 30 logs from a clearcut were spiked. A notice of the spiking was mailed to the Forest Service and signed by A. Leo Pold. A southeastern states hardwood logging conference in New Orleans in late March was the scene of considerable hysteria about the spiking.

Please send clippings about monkeywrenching and other relevant news to Ned Ludd, POB 5141, Tucson, AZ 85703. Please indicate date and name of publication on the clipping. Thank you!

Dolores LaChapelle • Mary Sojourner • Red Bird

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Back Issues Directory for the *Earth First! Journal*

Order back issues from EF!, POB 7, Canton, NY 13617 for $2 apiece ($1 apiece for 5 or more different issues).

YULE December 21, 1981 (Vol. II, No. II) First Earth First! Road Show, Oil Leasing in Wilderness Areas, EF! Preserve System, many early photos of Earth First!

EOSTAR March 20, 1982 (Vol. II, No. IV) Mardie Murie Interview, Canyonlands Nuke Dump, EF! meeting in Eugene.

LITHA June 21, 1982 (Vol. II, No. VI) Little Granite Creek, Moab Roads a BLM WSA, Chim Blea on Babies, Dinkey Creek & McKinley Sequoias, What To Do As An EF!er, Caribou in Maine.

BELTANE May 1, 1983 (Vol. III, No. IV) Bald Mt Blockade, GO Road, Howie Wolke on Moderation, EF! Wyoming Wilderness Proposal, Canyonlands Nuke Dump, Maze Tar Sands, EF! Smashes Earth Last!, Ned Ludd on Helicopters, CA Desert Sellout by BLM, Otter G'Zell on Whales, Mama Rue on Beltane, Review of *Reenchantment of the World*, John Seed on Australia Rainforest Direct Action, Bigfoot Interview.

LITHA June 21, 1983 (Vol. III, No. V) Wilderness War in Oregon, Bald Mt Blockaders' Personal Accounts, Mama Rue on Summer Solstice, EF! Wilderness Preserve System and Map, Head of Joaquin on Utah, EF! Glen Canyon Demonstration, Franklin River Victory in Australia, Ned Ludd on Radios, GO Road Stopped, Reform of the Forest Service, Ed Abbey on Conscience of the Conquerer.

BRIGID February 1, 1984 (Vol. IV, No. III) Oregon RARE II Suit, EF! Idaho Wilderness Proposal, Tuolumne, Forest Service Arrogance, Ned Ludd on Smoke Bombs, Head of Joaquin on Trapping, Coors in Shenandoah.

EOSTAR March 20, 1984 (Vol. IV, No. IV) Burger King Protest, Shipwrecked Environmentalism, Solomon Island Rainforest Action, Bald Mt Road Crumbles, Southern Utah Wilderness, Dave Brower/Muir's Disciple by Bill Devall, Ned Ludd on Tree Spiking & No Evidence, Mama Rue on Enlightenment, 1984 Road Show, Buried Daintree Protestors.

BELTANE May 1, 1984 (Vol. IV, No. V) Cabinet Mts Grizzlies & Mining, Forest Service Appeals Form, Wolke on the Role of EF!, EF! Owyhee Wilderness Proposal (ID, OR, & NV), Angel Dusting Grizzlies, Middle Santiam, CO Recreation Dollars, EF! AZ Wilderness Proposal, Arctic Wildlife Refuge Violated, Bolt Weevils, Devall on the Australian Environmental Movement, Ned Ludd on Survey Stakes & Disabling Vehicles, Deep Ecology & Reproduction, Save the Tuolumne Rally.

LITHA June 20, 1984 (Vol. IV, No. VI) Middle Santiam Blockade, Chim Blea on the Big Outside, Cabinet Mts & Grizzly, Coors in Shenandoah, Saguaro National Monument Mine, Murder on Key Largo, Burger King Demonstrations, Daintree Rainforest, Ned Ludd on Rising & Falling Birds, EF! Protests Canyonlands Nuke Dump, *Sterile Forest* Review, Basic Principles of Deep Ecology, Sinkyone Continues.

LUGHNASADH August 1, 1984 (Vol. IV, No. VII) Middle Santiam Blockade, EF! Occupies Montana Senator's Office, North American Bioregional Congress, Round River Rendezvous, Montana on Civil Disobedience, Petroleum Conflicts with Wilderness Analyzed, Everything You Ever Wanted To Know About the Forest Service Part 1 by Bobcat, Sacred Cows, Foreman on Professionalism, Hunting the Wild Life, Devall and Sessions on the Books of Deep Ecology.

SAMHAIN November 1, 1984 Vol. V, No. I) EF! Occupies Oregon Regional Forester's Office, Hardesty Avengers Spike Trees, Old Growth Rally, "What Do You Expect To Accomplish?", Cop Raid on Bald Mt, Your Taxes Destroy Rainforest, Down (With) the Amazon, Green Politics, Elfbusters, Roxby Downs in Australia, Wilderness — the Global Connection, Ned Ludd on Water & Machines, Forest Service Appeal Form, Everything You Ever Wanted To Know About The Forest Service Part 2 by Bobcat, Direct Action by Devall & Sessions, Gary Snyder: *Song of the Taste*, Beyond Sacred Cows, Stiles in Defense of Dogs.

YULE December 21, 1984 (Vol. V, No. II) Texas Wilderness Logged, 30,000 Miles of Road in RARE II Areas, Bridger-Teton Forest Supervisor, Alaska: Kadashan Denali & Johnny Sagebrush, Middle Santiam Trials, Japan Grizzly, German Nuke Dump, Chipko, Solomon Islands Rainforest, Daintree Rainforest Buried Protest, Environmental Professionalism Discussion, 1984: Wilderness Boom or Bust?, A National Range Service, Non-Game, Devall on Whither Environmentalism?, Cecelia Ostrow on Deep Ecology, Hardesty Mt Tree Spiking, Ed Abbey on *Ecodefense*.

BRIGID February 2, 1985 (Vol. V, No. III) Meares Island, Military Land Grab in West (Supersonic Overflights), Mission Symposium, FS Employment Tyranny, National Park Mining, Florida Panther, Shooting Wolves from Air, Cathedral Forest Petition, North Kalmiopsis, Criticizing the Environmental Movement, End of the Yellowstone Grizzly?, In Defense of Western Civilization, Stop Planting Trout, Ned Ludd on Bigfoot.

EOSTAR March 20, 1985 (Vol. V, No. IV) Rocky Mtn Gas Drilling, EF! Gives DOE Nuke Waste, Montana Wilderness Demos, Yellowstone Grizzly Management, Texas Demo, Rainforest Report, Swedish River, Wayne NF, Southern Utah, King Range, Arctic NWR Desecrated, Joseph Canyon, John Day Mining, Great Exchange, Acid Rain, In Defense of Humor, Wolke on Hunting, Nagasaki on Symbols & Lifestyles, Biocentrism of Western Civilization, Ned Ludd on Advanced Billboarding.

BELTANE May 1, 1985 (Vol.V, No.V) Yellowstone's Watergate, Snowmobiles in Yellowstone, Alabama Wilderness, Denali Mine, Grand Canyon Mine, Middle Santiam, Welfare Ranchers, Great Exchange, Welcome to Earth First!, Critters Protest Bighorn NF Plan, RNR Management, Beaverhead NF, Pine Beetles, African Parks Poisoned, Real Environmental Professionalism, Dark Side of Wilderness, Review of *Fragmented Forest*.

LITHA June 21, 1985, (Vol.V, No.VI) Road Frenzy, Tree Climbing Hero, Old Growth Actions in Oregon, EF! Guide to NF Planning, Aircraft in Grand Canyon, Mt. Graham Observatory, Jarbidge Elk, Hells Canyon, Grand Canyon Mine, Rainforest Insert & Ten Questions, King Range, Mike Frome on Fat Cat Conservationists, Reviews: *Meeting the Expectations of the Land, In the Rainforest*, Strategic Monkeywrenching, Advanced Tree Spiking, Tyrone (WI) Nuke.

LUGHNASADH August 1, 1985 (Vol.V, No.VII) Battle for Millenium Grove, 3 Bears in Yellowstone, Oregon Overview, Montana (Hall Creek Well, RARE II bill, Swan Range Motocross), Yellowstone Bison, Mike Frome on Yellowstone, Washington Rendezvous, Ozark NF, Stikine River Dams, Mogollon Rim Logging, Salmon River, Mt. Rainier Shit, '85 RRR, Dreaming Big Wilderness, Jeff Sirmon, Tree Spiking & Moral Maturity, Deep Ecology & Life Style, Blade Ruiner: Tree Pining, Wolke Busted, Fire Stops Logging, Hands-On Forest Planning, Valve Lapping Compound, Lone Wolf on Animal Music, Reviews: *Emerald Forest, Green Politics, Chuang Tzu, Interntl Envir. Policy.*

MABON September 22, 1985 (Vol.V, No.VIII) Arizona EF! (Overview, Mt. Graham, Grand Canyon Mines & Helicopters, Cliff Damn, Coconino Roads), Texas Wilderness Logging, Militarization of the West, Nevada Wilderness, France Sinks Rainbow Warrior, Notes from a Maturing Tree-Hugger, Utah BLM Wilderness, Gila Wilderness, Stikine River, Florida Wilderness Recovery, Eastern Forest Preserves, Natives & Natural Peoples, Ecological Decay/Political Violence, Blade Ruiner: Ceramic Spikes, Lone Wolf on Country Music, Reviews: *Who Speaks for Wolf, Seeing Green, Parable of the Tribes, Natural Alien*.

SAMHAIN November 1, 1985 (Vol. VI, No. I) Battle for the Bear, Mt. Graham Scopes, Clockwork Grizzly, Ski Yellowstone, Grant Village, Montana EF! Climbs Marais Pass Monument, Hells Canyon Logging, Australian Woodchipping, Colorado Water Diversions, Environment & Peace, Stein Valley (BC) Logging, Louisiana-Pacific Strike, Camel Cigs Against Rainforest, Carole King on Idaho Wilderness, Rainforest Insert, Mann Creek (ID), Wild Horses, Second Thoughts on Fire, Blade Ruiner: Ceramic Spikes II, A Cop on Security, Lone Wolf Circles on Poetry, Recommended Periodicals, Reviews of *Cry Wolf, Meares Island, Earth Wisdom*.

YULE December 21, 1985 (Vol.VI, No.II) Highjacking of FOE, Colorado EF!, Texas EF!, EF! in Southern California, Bay Area EF!, Maine (Big A Damn, Straight Bay Damn), Sinkyone, Congress on Griz, Pinnacles Pigs, SS Watt, Japan, British Columbia Wilderness Logging, Thinking Like a Rainforest, Big Mountain Relocation, Australia Update, International Rainforest Conference, Blade Ruiner: Quartz Tree Spikes, Trapping, Wolves & Moose in Alaska, Bioregional Approach to Wilderness, Montana Sellout, Spotted Owls, Lone Wolf Circles on Indian Music, Reviews: *Turning Point, Nuclear Battlefields, Declaration of a Heretic, Death of Nature, American Hunting Myth, Parable of the Tribes* reply.

BRIGID February 2, 1986 (Vol. VI, No. III) Cutting the Tongass, Dian Fossey, CO EF!, '86 RRR, Gallatin NF, Oregon Update, Colo. Aspen, Calif. Condor, Desert Eagles, Hall Creek Protest, Bruneau Snail, Bleeding Utah, EF! Acid Rain, Texas Boggy Creek, Designer Genes, Seed in India, South Moresby, World Rainforest Report #5, Foreman on Cowboys, Stoddard on Death, Feb. Pagan Festivals, Wuerthner on Forest Fire, Technology & Mountain Thinking, Spiking Refinements, Lone Wolf Circles on Gary Snyder, Stephanie Mills: RRR Thoughts, Reviews: Books on Mountain Lions and Grizzlies.

EOSTAR March 20, 1986 (Vol. VI, No. IV) Howie Jailed; Yellowstone Supt: "Shove It!"; Fishing Bridge Suit; Montana Road Show; Flathead NF Plan; Nat'l Old Growth Campaign; Hells Canyon; Tahoe NF Plan; Taxes & Forest Destruction; Hierarchy & Grassroots in Sierra Club; Suwannee River; Snoqualmie River; Texas Pipeline; Cheyenne Bottoms; Restoring Salmon Streams; Howling Wilderness?; Gourd of Ashes; Desertification & Plant Genetic Resources; Wagon Wilderness; Suburbanizing the Bush; Public Interest Law Liability; Lone Wolf Circles on Folk Music; BC Rejects Native Management; Reviews: *Sacred Paw, Gifting Birds, Restoring the Earth, State of the World 1985, The Earth Speaks, Language of the Birds, Mad Max & Streetwise, Fire From the Mountain*; Ned Ludd: Radios, Mountain Bikes; Legend of Tiny Tonka; Desert Rivers; Notes from Ultima Thule.

BELTANE May 1, 1986 (Vol. VI, No. V) Utah BLM Wilderness Proposal, EF! Griz Recovery Plan, Why Grizzlies Die in Y'stone, Neches River, BLM-FS Interchange, Memories of a Tree Climber, Acid Rain in BWCA, Los Padres NF, San Bruno Mt, Colo Aspens, Mt. Graham, Anti-herbicide Researcher Fired, Poisoning Saguaros, Eating As If Nature Mattered, Smokey the Bear Sutra, Animal Rights vs. the Wilderness, Civilization Act, Schmookler on Anarchy, Rainbow Permit Controversy, Rocky Mt. Front - American Serengeti, Recreating Ohio Wilderness, Wonderful Famine, Frome on Conservation, Lone Wolf Circles on Poems by Jose, Reviews of *Gathering the Desert, Good Wild Sacred, Building the Green Movement, Africa in Crisis*, and the Work of Peter Matthiessen, Ned Ludd on *Outlaw's Bible*, Money in Your Coffeepot.

LITHA June 21, 1986 (Vol. VI, No. VI) Idaho Compromise; World Bank Demos Set; 4 Arrested in Texas; Internat'l Law & Monkeywrenching; Fishing Bridge Protest; Grand Canyon Aircraft; Stanislaus NF Protest; Long Island (WA) Cedars; Massachusetts EF!; Florida Panther; AZ & CO Acid Rain Actions; Mt. Graham Demo; Millennium Grove Update; North Kalmiopsis; Restoring Colorado Wilderness; Green Conf. Mired in Anthropocentrism; World Rainforest Report #6; Hawaiian Native Rights; Chicken of the Desert; Diversity?; Lone Wolf Circles on Katie Lee and Cecelia Ostrow; Chim Blea on Deep Ecology vs. Animal Rights; Wilderness Restoration in Appalachians; Animal Thinking; Reviews of *Promised Land, Vegetation Changes on Western Rangelands*; Devall reviews new books on Muir; The Future Of Monkeywrenching.

MABON September 23, 1986 (Vol. VI, No. VIII) Sea Shepherd in Faroes; Wyoming Oil Protest; Mining Threatens Wilderness System; Alberta Kills Griz; Sheep Kill Grizzlies; Boating in Yellowstone; Exxon in Northwoods; Wenatchee NF Protest; EF! Spills Uranium at Grand Canyon; EF! Foundation; Ohio Wilderness Recovery; NABC II; Virginia Wilderness; John Zaelit In Memorium; World Rainforest Report #8; Los Padres NF Wilderness; Nukes in Bavaria; Cows in Capitol Reef NP; Wolves Return to Montana; Sustainable Agriculture?; Noss on Wilderness Recovery; Holistic Range Management; Lone Wolf Circles reviews Kate Wolf, Bill Oliver, Greg Keeler, and Nightcap cassettes; Review of Gary Lawless poetry; Ask Ned Ludd; Deep Ecology name.

SAMHAIN November 1, 1986 (Vol. VII, No. I) World Bank Protests, Four Notch Godzilla, EF! NM BLM Wilderness Proposal, Kaibab NF, Grand Canyon Uranium, Mt. Graham Scopes, New England Rendezvous, California Rendezvous, Technology Free Zones, Inyo Ski Area, Wetlands, Yellowstone Griz March, Fishing Bridge, Biodiversity Forum, WA EF!, Controlled Burning, Technology & Mortality, Shays Rebellion, Predator Control, Mike Frome on Denali, Grey Seals, Gaia Meditations, Devall on "Environmental Agenda for Future," Zu Zaz's Close Shave, LWC on Poetry, Nukes in Scotland, Japan's Bird Islands, Reviews of *Working the Woods Working the Sea, Glint at the Kindling, Dwellers in the Land, Killing the Hidden Waters, Conserving Biological Diversity in NFs*.

BELTANE May 1, 1987 (Vol. VII, No. V) Grand Canyon Uranium, Kalmiopsis Action, White Mt NF Smog, CA Mountain Lions, Mt. Graham, MAXXAM, Quebec Hydro, Whopper Stopper, Florida Stinkholes, Seal Slaughter, Japanese Pirate Whaling, Arctic NWR, Tongass NF, Six Rivers NF, Coca Cola in Belize, WRR #9, Wuerthner on Alaskan Natives, End of American Wilderness, Appalachian Mts Wilderness Vision, Is Deep Ecology Deep Enough?, Third Wave Environmentalism, Population & AIDS.

LITHA June 21, 1987 (Vol. VII, No. VI) MAXXAM Protests, Strawberry Liberation Front, Washington EF! Update, Kalmiopsis Actions, Two Forks Damn (CO), Last Condor, Santa Rosa Sewage, Mountain Lions: CA-NM-AZ, Griz & ORVs, Burr Trail, Mt. Graham Red Squirrel, Appalachian Rendezvous, Council of All Beings, Penan, North Pacific Driftnets, Whopper Stopper, California Desert EF! Proposal, Grand Canyon Uranium Map, SW Lobo, Dark Side of Wolf Return, Animas Mts (NM), Indian Rainforest Park in Panama, Deer & Wolves, Wolverines, Bones, Greens-Deep Ecology-Animal Rights, Mark Hatfield Exposed, Gary Snyder: Alaska, Lone Wolf Circles on Women's Poetry, Nagasaki on Spiking, Potato Liberation, Chim Blea Reviews "The Mission," Reviews of *Idaho Mountain Ranges, State of the World, Birds of Prey, Beaches Are Moving, Bombs in Backyard, Cadillac Desert*.

SAMHAIN November 1, 1987 (Vol. VIII, No. I) Hodel At Hetch Hetchy, Texas Freddie Gestapo, Four Notch, Rogue Griz Sanctuary, Helicopter Buzzes Grizzlies, Black Bear in S. Appalachians, World Bank Blockade, World Wilderness Conference, Alpine Lakes Mining, Lou Gold Escapes Bald Mt, Yellowstone Wolves, CA Lions, Siskiyou NF Plan, Virginia FS Demo, Mt Diablo Cows, Woodpeckers Rebellion Pow Wow, Tarzan & Jane in Redwoods, Alien-Nation, Whither EF!?, Taking Up Bookchin's Challenge, Chim Blea on "Why The Venom?," Foreman on Sanctuary, World Rainforest Report #11, Reviews of *Conservation Biology, Desert Smells Like Rain, Arctic Dreams*, Vermont's Northeast Kingdom, North Woods Preserve, Boundary Marking, Folky Bear, Lone Wolf Reviews Keeler/Lyons/Cherney, Streeter on Leopold.

YULE December 22, 1987 (Vol. VIII, No. II) Malaysia Crackdown, Fishing Bridge EIS, National Day of Protest Against FS, Letters Re: "Whither EF!?," BLM vs. Pygmy Forest, Box-Death Hollow Drilling, Mexican Wolf Re-intro Killed, Wolf Actions, Yellowstone Wolves, Icelanders Oppose Whaling, Grand Canyon Uranium, Mt. Graham Sellout, Elk Mt (NM), AZ Welfare Rancher Protest, NM BLM Wilderness, AIDS & Gaia, Miss Ann Thropy to Alien-Nation, Devall on "Deep Ecology and Its Critics," EF! Tabloid, Review of *Tierra Primera*, Judge Blasts MAXXAM, Court Spares CA Cougars, Lone Wolf Reviews Mokai/Wells, Ned Ludd on "Safe Typing of Communiques."

BRIGID February 2, 1988 (Vol. VIII, No. III) Stop the Forest Service by Howie Wolke, Barstow-Vegas Race Sabotaged, David Gaines RIP, Dinkey Creek, Challenging CA Timber Harvest Plans, Montana Wilderness Association Sell-out, Alaska Parks Wilderness, Hydra ORV Race (CO), Kalmiopsis Fire, Spanish Waste Dump, Ocean Garbage, Oldman River Dam, Wackersdorf, FS Attack on Gila NF (NM), EF! AZ BLM Wilderness Proposal, Vermont's Northeast Kingdom, White Mt NF Plan (NH), Randall O'Toole on "Reforming the Forest Service," Lone Wolf Reviews Amerindian Music, Deep Ecology & Magic, Natural Areas Conference, Wilderness Recovery, Technology & the Rumford Effect, Reason & Time, Behaviorism & Environmentalism, Reviews of Robinson Jeffers, Byrd Baylor, *Kingdom in the Country, Environmental Effects of ORVs, Ley Hunter, Monarch Butterfly, Pagans for Peace, New Catalyst, Katuah*, Edward Abbey and Wendell Berry, Ned Ludd on Spiking Paper Pulp/Water Pipelines/Advanced Road Spiking, EF! From a European Perspective.

EOSTAR March 20, 1988 (Vol.VIII, No. IV) Forest Service Primer by Howie Wolke, BC Wolf Kill Protests, Roselle Sentenced, Fish Town Woods, Salvage Logging in N. Kalmiopsis, Dolphin Slaughter, Sea Shepherds Return to Iceland, EF! Activists Conference, Stumps Suck!, Gallatin Forest Plan Appealed, Animal Damage Control Program, Byrd Baylor on ADC, Realm of the Bog Lemming, Alaska Land Grab, EF! CA Redwood Wilderness, Reviews of *The Whale War, The Natural Alien: Humankind and Environment, Wilderness and the American Mind, Sabbaths, Diet For A New America, Of Wolves And Men*, Notes From Nee-Beel-Ha, Greek Language Problem, Ned Ludd on anti-spiking legislation/balloons threaten powerlines/butyric acid/healthy tree spiking.

BELTANE May 1, 1988 (Vol. VIII, No. V) Jaguar (El Tigre) in the Southwest, Undeveloped Land In New England For Sale, Atlantic Salmon, Quebec Ski Area, Idaho Wilderness Bill, Roselle on Deep Ecology & the New Civil Rights Movement, Nerthus - Paganism, Logger's Diary, John Muir Another Edison, Review of *Fear At Work*, Conservation Biology and the Greater North Cascades Ecosystem, Ned Ludd on wolf poster/lock jamming/cow poisoning, Neanderthal Gene, Restoring the Earth Conference, Nevada Wilderness Bill, Springtime in the West Fork.

LITHA June 21, 1988 (Vol. VIII, No. VI) Day of Outrage Shakes Forest Service, Great Basin National Park, Sea Shepherd Samurais, G-O Road decision, MAXXAM Battles, Environmental Sabotage in Western Europe, Flat-spired Three-toothed Land Snail, Darter Diversity in Peril, River of No Return for Salmon?, responses to *Reforming the Forest Service*, Reviews of Jim Harrison, *Public Lands Council Newsletter, Methods for Evaluating Riparian Habitats, Incident at Hawk's Hill, A Wilderness Original, Minding the Earth*, Foreman on Growth in EF!, Canyon Wingbeats, Ghost of Matthew Kidder, Lone Wolf on Tribal Voice, Ned Ludd on radio communications/strategic monkeywrenching.

LUGHNASADH August 1, 1988 (Vol. VIII, No. VII) Okanogan NF Demonstration, Threatened Snail Protected, Wolf Campaign on 3 Fronts, Mt. Graham, Salmon Revival Runs the Connecticut River, Ecological Preserves for Central Appalachians, Conservation Biology in Florida, Sierra Club and Grazing, Bighorns Menaced by Sheep, NACE vs. Kerr-McGee, RRR photos, Critical Mythology of Civilization, Replace Mythology With Ecology, Thank God for the Carnage, Virgin Islands, Waiting for the Ice Age, Revise the Big Open, Ecoavengers - A Mediterranean Cruise, Wilderness Music, Lone Wolf reviews *American Falls*, Reviews of Robert Service, *Survival of Civilization, Words From the Land, Amazon*, Ned Ludd on military targets/slow elk/plugging culverts.

MABON September 22, 1988 (Vol. VIII, No. VIII) Kalmiopsis Tree-Sitters Targeted, TX EF! Fights for Vireos and Bugs, Mt. Graham, Tuna Industry Lies Refuted, Endangered Snakes - From the Garden to the Roundup, Mexican Biosphere Reserve, Timber Management Is Not Wildlife Management, Ranchers and 3 Refuges, Fruitless Past of Allan Savory, Burning, Looking for Land, EF! Proposes Greater Yellowstone Ecosystem Preserve, Stockman, The Last Detail, Lone Wolf on Animas Rock, Reviews of *Simple in Means, Rich in Ends, Thinking Like A Mountain, Earth First!, Villy Sadness, Gaia: An Atlas of Planet Management, Solace of Open Spaces*, Ned Ludd on spiking/heavy equipment/culverts/footprints/butyraldehyde.

SAMHAIN November 1, 1988 (Vol. IX, No. I) TX Cavebugs Saved, Mt. Graham Loses in Congress, CA Rendezvous, Kalmiopsis actions, Midwest Headwaters EF!, B.C. Wilderness, Snake Campaign, Northwest Forestry & Old Growth, Global Warming Shrinks Biodiversity, Scientists Dig Into Biodiversity, 3rd Bioregional Congress, Local Group Newsletters, Steps to Protect Public Lands, Restoring Earth Kinship, Bionomics of Tree Planting, *Out of Weakness*, On Becoming Homo Ludens, Falling Leaves, Reviews of *Sacred Land Sacred Sex, To Govern Evolution, Big Sky Fair Land, Mountains Without Handrails, Battle for the Wilderness, Ancient Science of Geomancy, Deadly Defense, Economics As If The Earth Really Mattered, Endangered Rivers*.

YULE December 21, 1988 (Vol. IX, No. II) Triple Victory in CA, FL EF! Saves Paynes Prairie, Yellowstone: Out of the Ashes, Sapphire Six Fined $25,000, Wolf Update, WIPP: Pandora's Box, Park Service Plans Doormat To Denali, Wildlife in France, CA's White Mtns, Reweaving Web of Life, Chestnuts, Corporate Takeover of Friends of the Earth, Monkeywrenching Mainstream Education, Off the Cow!, Wheeled Bane of Nature, How Far Should We Go?, Growth and EF!, Reviews of A.B. Guthrie, Alston Chase, Ambient Music, *Ages of Gaia, One Life At A Time, Please, A Place For The Winter, Last Stand of the Red Spruce, Tribes*, Circle of Time, Coyote & the Monkeywrench.

BRIGID February 2, 1989 (Vol. IX, No. III) CO EF! Fights Welfare Ranching, National Livestock Refuge System, Alaska: Keep It Wild!, Real Destruction of Yellowstong, Traditional Asian Medicine, New Guinea Nature Reserve System, Flathead Forest Roads Inventory, Perceptual Implications of Gaia, Challenge to Environmental Education, Earth First - Space Second, LaChappelle on Play, Reviews of *Redesigned Forest, Victory Without War, Owning It All, Shandoka, Permaculture: A Design Manual, Fool's Progress, Cassandra Conference, Diet For A New America, Secrets of the Old Growth Forest*, Ned Ludd on tree spiking/culverts/signs.

EOSTAR March 21, 1989 (Vol. IX, No. IV) Race for Northeast Timberlands, Timber Sale Threatens RNR Wilderness, FL National Forests, Wild Rockies EF! Demands Equal Rights for All Species, Log Exports Demo, FS Appeals Process, Colorado on the Edge, Kararao: A Dam Called War, Coca Cola in Belize, Wolf Update, Mind in the Biosphere, Reports from DAF, RAT, and EF!F, Antarctic Future, The Cull, Sapiens & Sourdough, LaChapelle in Defense of Men, Reviews of Earth Goddess music, *Audubon Wildlife Report 1988/89, Quiet Crisis & The Next Generation, Animal Thinking, Biological Diversity*, Ned Ludd on anti-spiking legislation.

BELTANE May 1, 1989 (Vol. IX, No. V) Tribute to Ed Abbey, Old Growth vs. Old Mindsets, Jemez Mountains: Fragmented Jewel, Breitenbush Blockade, Steps Towards A Restoration Ethic, Effect of Rising Sea Levels on Coastal Wetlands, Big Wilderness is Ecological Wilderness, White Hats, Pro-Life?, LaChapelle on Beltane & Money, Perfect Kiva, Reviews of *History of the Sierra Club, Bordering On Trouble, Modern Crisis, Rights of Nature, Sea of Slaughter, Down By The River, Forest and the Trees, Saving the Tropical Forests, Water Planet*, Ned Ludd on culverts/range improvements.

LITHA June 21, 1989 (Vol. IX, No. VI) Los Angeles EF! demo, Nevada Wilderness, photos of FBI agent Mike Tait, MAXXAM treesit, Yellowstone's Nuclear Shadow, Cumulative Impacts of Coors, French Activists Fight for Wild River, Climate and the Greenhouse Effect, Paddlefish, Northeastern Lynx, Alaska Aquaculture, Marine Preserves, Thoughts on an Evolutionary Ethic, Reviews of *Zodiac, Chronicles of Thomas Covenant the Unbeliever, Story of the Earth, Wilderness Coast, Exploring Idaho's High Desert*, A Monkeywrencher's Guide to Lawyers and the Law, SLAPPS: Intimidation Lawsuits

LUGHNASADH August 1, 1989 (Vol. IX, No. VII) Tropical Timber tabloid, Activists Assault Dolphin-Killing Capital, Round River Rendezvous Remembered, FS Old Growth Symposium, Southwest Spotted Owl, Big Things That Run the World, Counting Real Costs of Public Lands Grazing, Television's Profound Impact On Nature, Gestalt for EF!, In League With Beings of the Future, LaChapelle on Living Wild, Trading Truth for Credibility, Love Your Mother - Don't Become One, Wolke on NFMA Planning, Reviews of *Lime Creek Odyssey, Crossroads: Environmental Priorities..., Earth Rising, Staying Alive, This Incomparable Lande*.

MABON September 22, 1989 (Vol. IX, No. VIII) Mirth First! special insert, Nationwide EF! Treesit, Hatfield Rider, NFLS Report, Wild Rockies EF! in Yellowstone, Alaska VICE, EF! Alaska Task Force, French to Reintroduce Bison, Chile: In Search of Ancient Trees, Protecting Preserves By Listening to Locals, Guatemalan Conservation, Desert Tortoise Gets Partial Protection, Sacred Sites, Shamanism, Dreamtime & Extinction, What Role For Education In Deep Ecology?, Letter from Gaol, LaChapelle on Importance of Ritual, Excerpt from *Sisters of the Dream*, Review of *Elements of Refusal*, Ned Ludd on sand bong/protective clothing/security.

SAMHAIN November 1, 1989 (Vol. X, No. I) Montana EF!ers Subpoenaed, Politics and Extinctions, Wolf news, Tatshenshini, Adirondacks issues, Mt. Apo, Clearcuts & Farmlands, Ferret Eggs, Hidden Valley, Palouse Prairie, Reforming the FS, Clash of True Believers, Ecocollapse, Renegade Rangers, Origin of the Domestic Dog, Foreman on The Perils of Illegality, Mountain Greenery, Littlest Eco-Raider, Revolution Can Begin With the Young, Yule carols, Whither Monkeywrenching?, Reviews of *Arsenal, Enduring Seeds, Los Angeles, Earth First!* (film), *Time Falling Bodies Take to Light, To Dwell In Peace, Raft Is Not the Shore*.

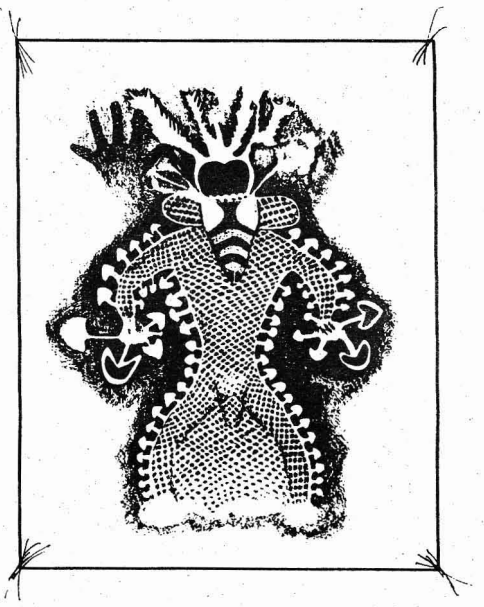
YULE December 21, 1989 (Vol. X, No. II) Woodland Caribou, National Wolf Recovery Action, CO Old Growth Saved, Hawaii Geothermal, Grizzly Bears & Politics, Old Growth Forests of the SW, Old Growth in the S. Appalachians, Destruction of Wilderness, Forest Service Reform, Evolutionary Preserves, Natural Role of Humans in Wilderness, Ecocentrism & Global Ecosystem Protection, Humans & Honeyguides, Wolke on Thoughtful Radicalism, LaChappelle on the Seasonal Affective Disorder, Naess on Deepness of Deep Ecology, Reviews of *Challenge of Global Warming, Entropy, End of Nature, Ecology Community and Lifestyle, Universe is a Green Dragon, Conscience of a Conservationists, On Conflict and Consensus, Desert Solitaire* (music).

BRIGID February 2, 1990 (Vol. X, No. III) CO EF! Hits Cowboys, Log Ship Lockdown, Hatfield-Adams Amendment, Native Forest Protection Act, AZ 4 Are Now 5, Civil Disobedience and RICO, Griz Task Force Report, Social & Deep Ecology Meet, Wild Mountain River Country, Idaho Connection, Floral Legacies of the Megafauna, How Rivers Are Cleared in the Jungle, Steps to Consensus, Loaded Language, The Columbian Legacy, Brower on The Politics of Environmental Compromise, Roadkill, Norwegian Roots of Deep Ecology, An Appraisal of Monkeywrenching, Carrying On a Venerable Tradition, Reviews of *Healing the Wounds, Clearcutting, Coyote's Canyon*, new EF! music.

EOSTAR March 20, 1990 (Vol. X, No. IV) EF! Takes Mt. Graham to DC, Temagami, Corporate Buy-out of Earth Day, Hostile Takeovers in Maine, Y'stone Winter Onslaught, Mexican Sea Turtle Slaughter, B to V Race Stopped, Hurwitz Harrassed in CA & TX, Maxxam Violates Accord, Billionaire TX Goatherd, Fragmented Tropical Forest, Species Going Extinct While Bush Delays Listing, Paddlefish update, Laurel Fork, Starting a Local Group, Critter Flea Market, Toadstool Trekking, Deep Ecology & Cons. Biology, Animal Lovers, Wilderness & Photography, LaChapelle on Earth Day, Reviews of *Defending the Wilderness, Sowings and Reapings, Dimona the Third Temple, 50 Simple Things, Man and the Natural World*, and music: *Rainforest, Choosing Sides, It's a Miracle, Unity*.

Armed with Visions

clear as cut glass
& just as dangerous



SPRING/APRIL/HUNGERSTRIKE DAY 61

There are nights when freedom
is as close as a lover's breath
when desires and imagination
merge
and the prisoner rides a tempest,
a tidal wave of memories.
A spirit in the dark
A conspiracy of spirit
Sleep is happily elusive.

But it is cold, and the cold
intrudes, invades, and brings with it the present.

Two marvelous friends that
we have never met
will soon die.
They will die from hungerstrike
and no spirit conspiracy will save them.

But in the cold,
all those that conspire in the dark,
secretive regions of cells,
in and out
will continue.
How it is
will not be in vain.
No.

Susan Rosenberg
political prisoner, D.C. jail

BREATHE DEEP

Breathe deep, the tree.
Breathe in, the tree breathes out.
Breathe out, the tree breathes in.
Feel the bond of shared breath.

Mourn deep, the sea.
Tears returning, cloud to ocean,
Life's watery womb.
Share the bond of our origin.

Die deep, the earth.
Blood and bone feed the soil.
Spirit soars to mountain.
No distinction between self and planet.

Live deep, the fire
With passion and brilliance,
balancing sacrifice and desire.
Burn into the night.

Pegy Sue McRae
Lopez Island

ECOLOGY

for Paul Winston

it takes a long
time
long time
to understand
what it means
when you step
on that catepillar

Ed Engle
Durango

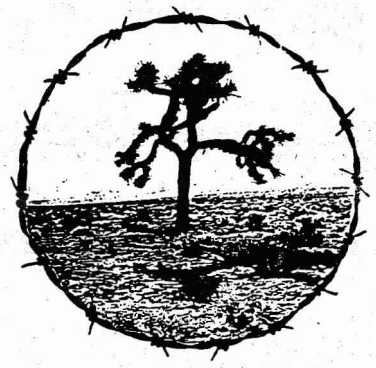
SUSPENDED

Let stillness wash away the city's roar.
In these brilliant canyons, time
is no more than warm earth, a globe
of light that glides around the sun
to the squawk of circling crows
and a winding Autumn breeze.

As you move toward stasis, listen!
From the Abajos, twenty miles to the north,
echoing thunder rolls your way.
Catch the whir of distant jets,
then let it go. Let all the city go.
Surrender to the whippoorwill,
whose song mocks your whispering fears.

Cottonwoods rattle in the light breeze.
A blue lizard darts on paper feet
across warm, red stone.
Everywhere life softly hums,
scarce heard but always there,
poised to caress your inner ear.

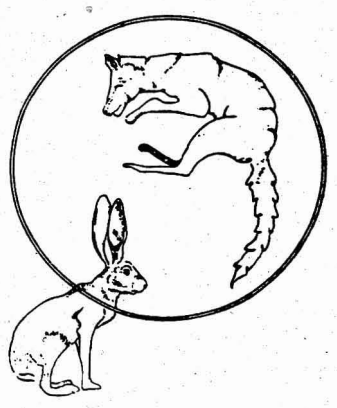
Red Bird
Hesperus



THE COCKROACH

He waits beneath the floorboards for disaster
and will become a citizen of waste
when his day arrives. The cockroach
will be indestructible, with his marshmallow innards
beneath the toxic sparkle of his shell.

David Chorlton
Phoenix



FREEDOM FIELDS

you believe i spurn you
the way weeds are tossed from a garden
when actually i hold you
(dandelion that you are)
two fingers along the stem
and easily pinch old petals from your head
(thinking all along what a fine salad you would be)
that you are disturbed from your resting place
is no cause to prick me
quite so deeply with the jagged teeth of your leaves
it is not easy for me to be here
nor for your to be held so
wild things grow in quiet places
and i came upon you quite abruptly
or did you find me through the wind
i remember now
it was the fall after that summer
when all of the above had been written
and i chased you through humus woods
i wanted one wish granted
i wanted to feel you near my mouth
thistle star of things
hard bound to destiny
and you did not know i could blow quite so long
long enough to scatter you among the fields
can you forgive a child who refuses to grow
so old and wise as you, Ancient of Days
it is my loss you know
you have been reseeded
and i am learning
how to cultivate what you meant to me

LC Summers
Fredericksburg

OUT OF SYNCH

Imbalance is man's work.
We shift the scenery to suit
time's momentary need.
We manipulate, enforce, disseminate,
alter and mutate.

Our psyche's message of true survival
increasingly goes unheard.

Dichotomy: Our sun, source of light, of life
is the very pollen of the power plant.
Get it?

A raw revelation
when all else in the Universe
seems to understand its place.

Can't we feel the molecular structures,
the yin-yang, the Tao, the rapturous
cosmic hum, the electric waves,
the beat of the earth – so simple?

That we doubt this
is wonder enough.

Sandy Kárng
Ward

Introduced and annotated by Dave Foreman

I apologize for my sloth in bringing new books to your attention this past year. I have been busy writing my new book which will be published by Crown this winter. The manuscript has been shipped off to my editor and I am hoping to be able to devote more attention to my other commitments, like this column.

Time is, however, fading for this issue. So, let me simply say that 1990 promises to be a banner year for books of interest to Earth First!ers. We have the following new ones this issue and will offer additional new books throughout the year.

To make room for all the new books, we will discontinue a number of current titles. Please note that titles with asterisks (*) have been discontinued and will not be reordered when our current stock is gone.

Please note that **Ecodefense: A Field Guide to Monkeywrenching** is no longer sold by the Earth First! Bookstore. All orders for it should be sent directly to the publisher, Ned Ludd Books (POB 5141, Tucson, AZ 85703). See the Ned Ludd Books ad in this issue for details.

All prices listed below are postpaid. *Order directly from Earth First!, POB 7, Canton, NY 13617.* Books are sent 4th class book rate. For quicker first class mailing or UPS delivery please check with Nancy Z (602-622-1371) for additional shipping charges.

Good reading!

NEW BOOKS

THE LIFE AND TIMES OF DAVID BROWER
For Earth's Sake
By David Brower
I'll say it without hesitation: David Brower is the greatest living human being. He is the giant without peer of conservation in the last half of the 20th Century. More than any other individual, he created and shaped the modern environmental movement. Since the 1930s, Brower has been on the cutting edge of conservation. He's still there. And his energy and vision are still unrivaled. This is his long-awaited autobiography. Hardcover, bibliography, index, nearly 600 pages, $27.50

FOREST PRIMEVAL
The Natural History of an Ancient Forest
By Chris Maser
Maser is a well-known forest ecologist who did research for the Bureau of Land Management for many years. In this delightful yet sad book, really a biography of a thousand year-old Douglas-fir forest on the west slope of the Oregon Cascades, he weaves a comprehensive natural history of the ancient forest with lyrical writing, passion, scientific rigor and wisdom. After reading certain books, you want to meet the author. This is one. Every ancient forest activist should read it — as should every politician. Hardcover, index, references, appendices, photos, 282 pages, $26.50

A SAND COUNTY ALMANAC
And Sketches Here and There
Special Commemorative Edition
By Aldo Leopold
In my library, A SAND COUNTY ALMANAC is the most valued volume. It is the most important, the loveliest, the wisest book ever penned. And finally there is a hardcover version of it adequate for true Leopold fanatics. Elegantly designed, printed on high quality paper, and accompanied by Charles W. Schwartz's excellent charcoal sketches, this is a treasure. Hardcover, 228 pages, $17.50

NATIONAL PARKS
The American Experience
By Alfred Runte
This revised second edition is one of the landmarks of conservation history. Not only does Runte provide a comprehensive history of National Parks in America, he develops a penetrating analysis of the pitfalls of arguing for National Parks from standpoints of recreation, monumental scenery, and worthless lands. He also discusses the creation of new Parks in Alaska, how nontraditional Parks like National Seashores fit into the system, and biological issues like fire ecology. Footnotes, index, bibliographic note, photographs, 335 pages, $13.50

A FOREST JOURNEY
The Role of Wood in the Development of Civilization
By John Perlin
Some of the best books on conservation tell the story of human civilization through the abuse of the land — DESERTS ON THE MARCH and TOPSOIL AND CIVILIZATION, for example. Perlin's fine book belongs on the shelf with them. If you want to understand the destruction of the ancient forests of the Pacific Northwest and the tropical rainforests today, read about the five thousand years of forest destruction outlined here. Emphasis is given to forest destruction in England and early America, although ancient Mesopotamia, Crete, Greece, Rome, North Africa and Europe are well covered. Hardcover, Foreword by Lester Brown, footnotes, index, illustrations, 445 pages, $22.00

THE MONKEY WRENCH GANG
By Edward Abbey.
Thankfully, THE MONKEY WRENCH GANG is once again available in hardcover. Maybe more than any other book, this is responsible for the lore and style of the Earth First! movement. $24.00

THE END OF NATURE
By Bill McKibben.
McKibben's book has been as widely reviewed as any environmental book ever. Although many reviews have slammed it, it is not because McKibben can't write — he is an artist with words. The reviewers are turned off by Bill's refusal to pander, his honesty in telling the truth even if it hurts, and his good words about Earth First!. $22.00

MODERNE MAN COMIX
By Bruce van Alten
You've enjoyed Bruce van Alten's cartoon strips in the *Earth First! Journal* for years; now they are collected in a well designed and printed trade paperback edition. $11.50

THE EARTH FIRST! LI'L GREEN SONGBOOK
78 terrific Earth First! songs by Johnny Sagebrush, Cecelia Ostrow, Bill Oliver, Greg Keeler, Walkin' Jim Stoltz and others from Australia and America. Guitar chords are included with most songs. A must for every true-green EF!er to sing along with our minstrels or to play the songs yourself. Dealer inquiries welcome. $6 postpaid, $4 postpaid special to *Earth First!* subscribers only! ($3 plus shipping for prepaid wholesale orders of 5 or more).

BACKLIST OF TITLES

HAYDUKE LIVES! By Edward Abbey. Hardcover, 308 pages. $21.
THE FOOLS PROGRESS "An Honest Novel" by Edward Abbey. Hardcover, 485 pages, $22.
THE MONKEY WRENCH GANG Paperback. By Edward Abbey. TEMPORARILY OUT OF PRINT — we'll let you know when it's available again.
THE MONKEY WRENCH GANG (German translation) By Edward Abbey $12.
DESERT SOLITAIRE By Edward Abbey. 255 pages, hardcover, $28.
DESERT SOLITAIRE By Edward Abbey. Paperback, $4.50
THE JOURNEY HOME "Some Words in Defense of the American West" by Edward Abbey. Illustrated by Jim Stiles. $10
ONE LIFE AT A TIME, PLEASE By Edward Abbey. $9
BEYOND THE WALL **Essays from the Outside** By Edward Abbey. $9.
LAND OF LITTLE RAIN By Mary Austin with an introduction by Edward Abbey. $8
A GREEN CITY PROGRAM For San Francisco Bay Area Cities & Towns By Peter Berg, Beryl Magilavy, and Seth Zuckerman. 70 pages, $6.50.
***THE GRIZZLY IN THE SOUTHWEST Documentary of an Extinction** by David E. Brown, with a foreword by Frank C. Craighead, Jr. Hardcover. $22.
***THE WOLF IN THE SOUTHWEST The Making of an Endangered Species** David E. Brown, editor. $11
*STATE OF THE WORLD 1989 By Lester Brown and Worldwatch. Index, footnotes, 256 pages, paperback. $11.50.
OVERSHOOT The Ecological Basis of Revolutionary Change by William R. Catton, Jr. Index, glossary, references, 298 pages. $12
AGENTS OF REPRESSION The FBI's Secret War Against the Black Panther Party and the American Indian Movement By Ward Churchill and Jim Vander Wall. 509 pages, index, extensively footnoted, heavily illustrated with photos, softcover. $17.
THE HISTORY OF THE SIERRA CLUB 1892-1970 By Michael P. Cohen. Hardcover, 550 pages, index, footnotes. $32.50.
THE PATHLESS WAY By Michael P. Cohen. $14.50
HOW NATURE WORKS Regenerating Kinship with Planet Earth by Michael J. Cohen (a different Mike Cohen than the author of "The Pathless Way"). 263 pages. $12.50.
CHANGES IN THE LAND Indians, Colonists, and the Ecology of New England By William Cronon. 241 pages, index, footnotes, bibliographic essay. $9.
ECOLOGICAL IMPERIALISM The Biological Expansion of Europe, 900 - 1900 by Alfred W. Crosby. Index, references, maps, illustrations, 368 pages. $13
SIMPLE IN MEANS, RICH IN ENDS Practicing Deep Ecology by Bill Devall. 224 pages, bibliography. $12.50.
DEEP ECOLOGY Living As If Nature Mattered by Bill Devall and George Sessions. 263 pages. $11.50
THE ARROGANCE OF HUMANISM By David Ehrenfeld. Index, references, 286 pages. $12.50
***THE NATURAL ALIEN Humankind and Environment** by Neil Evernden. $14
***TROPICAL NATURE Life and Death in the Rain Forests of Central and South America** by Adrian Forsyth and Ken Miyata. $9
***THE AMERICAN CONSERVATION MOVEMENT John Muir and His Legacy** by Stephen Fox. $16.50
CLEARCUTTING: A Crime Against Nature By Edward C. Fritz. Hardcover, 16 pages of color photographs, graphics, $16.50.
STERILE FOREST The Case Against Clearcutting by Edward C. Fritz. Special discounted price of $6.50
TAME WILDERNESS By Dennis Fritzinger. $6.
CONSCIENCE OF A CONSERVATIONIST **Selected Essays** By Michael Frome. 288 pages, $27.
***PROMISED LAND Adventures and Encounters in Wild America** by Michael Frome. Originally priced at $18.95. Signed by Mike Frome. Hardcover. $12 as a special for EF!ers.
***WHOSE WOODS THESE ARE The Story of the National Forests** by Michael Frome. $10
WAR AT HOME Covert Action Against U.S. Activists and What We Can Do About It By Brian Glick. 92 pages, paperback, footnotes, resources for help. $6.
***FEAR AT WORK Job Blackmail, Labor and the Environment** by Richard Kazis and Richard L. Grossman. Special discounted price of $9.50
***SECRETS OF THE OLD GROWTH FOREST** By David Kelly with photographs by Gary Braasch. Bibliography, 99 pages, oversized hardcover. $32.
***THE BREAKDOWN OF NATIONS** By Leopold Kohr. Foreword by Kirkpatrick Sale. Index, bibliography, appendices, paperback, 250 pages. $6.

SACRED LAND SACRED SEX Rapture of the Deep by Dolores LaChapelle. One of the best deep ecology books. 382 pages, index, footnotes, bibliography, oversized. $24.50.
EARTH WISDOM By Dolores LaChapelle. $15.50
BEAR MAGIC A chapbook by the National Grizzly Growers. $3.50
A SAND COUNTY ALMANAC By Aldo Leopold. Paperback, $6
ALDO LEOPOLD His Life and Work by Curt Meine. Hardcover. $32.
COMPANION TO A SAND COUNTY ALMANAC Interpretive & Critical Essays edited by J. Baird Callicott. $14.50
INTERVIEWS WITH ICONOCLASTS Headed Upstream By Jack Loeffler. 194 pages, photographs, $12.50.
QUATERNARY EXTINCTIONS A Prehistoric Revolution Edited by Paul Martin and Richard G. Klein. Paperback, index, footnotes, references, 892 pages. $37.50.
WILDLIFE IN AMERICA By Peter Matthiessen. Heavily illustrated with color and black and white (including color plates by Audubon). Index, 332 pages, hardcover. Originally prices at $32 postpaid, now only $18!
*THE HUMAN CONDITION An Ecological and Historical View By William H. McNeill. Hardcover, 81 pages. $10.
PLAGUES AND PEOPLES By William H. McNeill. Paperback, 291 pages, index, footnotes, appendix. $8.
WHATEVER HAPPENED TO ECOLOGY? By Stephanie Mills. $21.
WILDERNESS AND THE AMERICAN MIND By Roderick Nash. $13.50
THE RIGHTS OF NATURE A History of Environmental Ethics By Roderick Nash. Hardcover, $29.
*ENDANGERED RIVERS and the Conservation Movement by Tim Palmer. 40 full-color photographs by the author. 316 pages, index, references, appendices. $15.
*DOLPHIN LEAPING IN THE MILKY WAY By Jeff Poniewaz. $8
CADILLAC DESERT The American West and Its Disappearing Water by Marc Reisner. $11
*MOUNTAINS WITHOUT HANDRAILS Reflections on the National Parks by Joseph L. Sax. $9.50
*DESERTS ON THE MARCH Fourth edition by Paul B. Sears. Hardcover. $20.
THINKING LIKE A MOUNTAIN Towards a Council of All Beings by John Seed, Joanna Macy, Pat Fleming and Arne Naess. Illustrated by Dailan Pugh. 128 pages, references. $9.50
SISTERS OF THE DREAM By Mary Sojourner. Hardcover, 363 pages, $22.
CONSERVATION BIOLOGY An Evolutionary-Ecological Perspective edited by Michael E. Soulé and Bruce A. Wilcox. 395 pages, index, bibliography. $26.50
CONSERVATION BIOLOGY The Science of Scarcity and Diversity edited by Michael E. Soulé. 584 pages, index, bibliography. $29.50
THE OLD WAYS By Gary Snyder. $5.50
WITH JUSTICE FOR NONE Destroying an American Myth By Gerry Spence. 370 pages, hardcover, index, references. $21.
*THIS IS DINOSAUR Echo Park Country and Its Magic Rivers edited by Wallace Stegner. $10
ZODIAC The Eco-Thriller by Neal Stephenson. Paperback, 283 pages. $9
*THE WHISPER BEHIND THE WIND By Walkin' Jim Stoltz. 44 pages. $7.50
*RESPECT FOR NATURE A Theory of Environmental Ethics
By Paul W. Taylor. Index, bibliography, footnotes, 329 pages. Paperback. $14.
*WILDERNESS VISIONARIES By Jim Dale Vickery. $12.
ON THE BRINK OF EXTINCTION Conserving the Diversity of Life by Edward C. Wolf. 54 pages, index. $4.
RIVERS OF EMPIRE Water, Aridity & The Growth of The American West By Donald Worster. Index, footnotes, paperback. $14.50.
*YELLOWSTONE AND THE FIRES OF CHANGE By George Wuerthner. Many color photographs, bibliography, maps, 64 pages, paperback, oversized. $10.

MAPS

We are offering several fine US Geological Survey maps — all suitable for wall mounting, as well as being necessary reference tools for wilderness activists. Prices listed are postpaid. Maps are mailed folded (although they can be sent rolled for an extra $2 per order, except for the Wilderness System map).

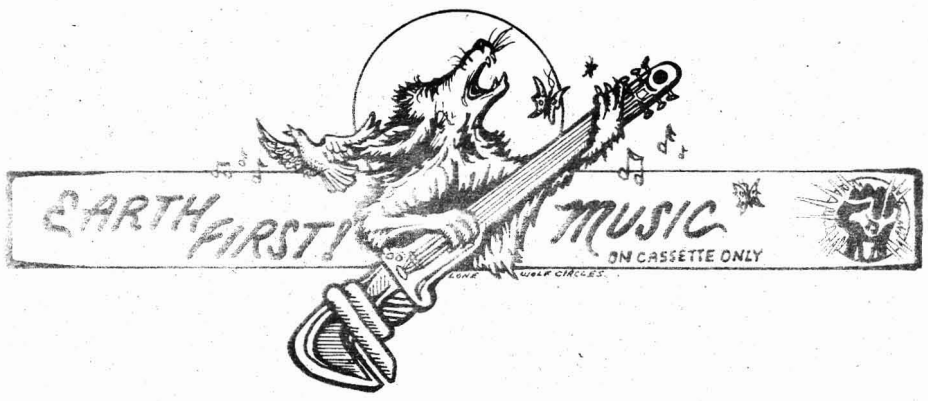
NATIONAL WILDERNESS PRESERVATION SYSTEM This full color, large map (40" x 25") shows all designated Wilderness Areas by agency in the US (including Alaska and Hawaii), plus a list of all the Wilderness Areas by state with their acreages. Scale is 1:5,000,000. Information is current to January 1987. Rivers, state boundaries, and major cities are also shown. $3.25.

US POTENTIAL NATURAL VEGETATION A beautiful multi-color map showing 106 different vegetative types in the US. This is the Kuchler Ecosystem Map the Forest Service used in RARE II. The reverse side shows Alaska and Hawaii and has an essay about the map and potential natural vegetation. A National Atlas Separate; scale is 1:7,500,000 (28" x 19") $3.25.

MAJOR FOREST TYPES A multi-color map showing the 25 major forest types in the United States including Alaska and Hawaii. A National Atlas Separate. 1:7,500,000 (28" x 19"). $3.25.

FEDERAL LANDS A National Atlas Separate, 1:7,500,000 (28" x 19"), showing National Forests, Grasslands, Parks, Monuments, Wildlife Refuges, BLM lands, military, Indian Reservations, Bureau of Reclamation, etc. in different colors for all 50 states. $3.25.

ALASKA NATIONAL INTEREST LANDS A splendid color map of Alaska with shaded relief, rivers, lakes, elevation points, communities and roads. The National Parks, Preserves, Monuments, Wildlife Refuges, Wild & Scenic Rivers and Wilderness Areas designated by the December 2, 1980, Alaska National Interest Lands Conservation Act are shown, as are the Tongass and Chugach National Forests. 24" x 18". $3.25.



Austin Lounge Lizards "Creatures From the Black Saloon" $9 postpaid.

Austin Lounge Lizards "Highway Cafe of the Damned" $9 postpaid.

Darryl Cherney "I Had To Be Born This Century" $9 postpaid.

Darryl Cherney "They Sure Don't Make Hippies Like They Used To!" $9 postpaid.

Lone Wolf Circles "Full Circle" $10 postpaid.

Lone Wolf Circles "Tierra Primera! – The Deep Ecology Medicine Shows." $10 postpaid.

Dakota Sid Clifford ". . . For The Birds" $10 postpaid.

Dakota Sid Clifford "No Mercy" $10 postpaid.

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Mark Graham "Natural Selections" $9 postpaid.

Greg Keeler "Songs of Fishing, Sheep and Guns in Montana" $9 postpaid.

Greg Keeler "Talking Sweet Bye & Bye" $9 postpaid.

Greg Keeler "Bad Science Fiction" $9 postpaid.

Greg Keeler "Post-Modern Blues" $9 postpaid.

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Katie Lee "Fenced!" $10 postpaid.

Katie Lee "Ten Thousand Goddam Cattle" $14 postpaid.

Katie Lee "Love's Little Sisters" $10 postpaid.

Katie Lee "Colorado River Songs" $10 postpaid.

Dana Lyons "Our State is a Dumpsite" $6 postpaid.

Dana Lyons "Animal" $11 postpaid.

Mokai "Clearcut Case Of The Blues" $9 postpaid.

Bill Oliver "Texas Oasis" $9 postpaid.

Bill Oliver & Friends "Better Things To Do" $9 postpaid.

Cecelia Ostrow "All Life Is Equal" $8.50 postpaid.

Cecelia Ostrow "Warrior of the Earth" $9 postpaid.

Rainforest Information Centre "Nightcap" $10 postpaid.

Joanne Rand "Home" $10 postpaid.

Joanne Rand "Choosing Sides" $10 postpaid.

John Seed, Bahloo & Friends "Earth First!" $9 postpaid.

John Seed "Deep Ecology" $10 postpaid.

Jon Sirkis "A Few Less Colors" $9 postpaid.

John Sirkis "The Wild West" $9 postpaid.

Susan Grace Stoltz "Circle of Friends" $10 postpaid.

Walkin' Jim Stoltz "Spirit Is Still On The Run" $11 postpaid.

Walkin' Jim Stoltz "Forever Wild" $11 postpaid.

Walkin' Jim Stoltz "Listen to the Earth" $11 postpaid.

Glen Waldeck "Wreckin' Ball Waldeck" $10 postpaid.

The Wallys "Rainforest Roadshow '89" $10 postpaid.

BOOKS ON TAPE

AN EVENING WITH JOHN MUIR
This is a recording of Lee Stetson's one-man stage play, based on the life and works of John Muir. In it, we join Muir in his home on the evening of Dec. 19, 1913, as he awaits a decision by President Woodrow Wilson. Wilson must sign or veto the bill authorizing a dam within Yosemite National Park, a decision to either provide new water to San Francisco or to preserve the exquisite Hetch Hetchy Valley. For Muir, this is the last battle in a 25-year-long struggle to preserve the National Park System he helped create. Cassette, 90 minutes. $11 postpaid.

JOHN MUIR'S STICKEEN
Performed by Lee Stetson. This is Muir's gripping story of getting trapped on a glacier during a howling storm in the company of the dog, Stickeen. This "little, black, short-legged bunchy-bodied, toy dog," as Muir described him, "enlarged my life, extended its boundaries." The tale was one of muir's most popular, and has lost none of its power in this recorded performance. Cassette, 38 minutes. $10 postpaid.

FREEDOM AND WILDERNESS
Edward Abbey Reads From His Work
Two cassettes (2hrs. 52 minutes) of Edward Abbey reading selections from his books. Includes Come On In (The Journey Home), Fire Lookout (Abbey's Road), The Dead Man At Grandview Point (Desert Solitaire), Down There In The Rocks (Abbey's Road), Cowboys (Desert Solitaire), Watching The Birds: The Windhover (Down The River), In Defense Of The Redneck (Abbey's Road), Merry Christmas Pigs (Abbey's Road), Freedom And Wilderness, Wilderness And Freedom (The Journey Home), Planting A Tree (Down The River). Hear it from Cactus Ed hisself. $18.50 postpaid.

EARTH FIRST! TRINKETS

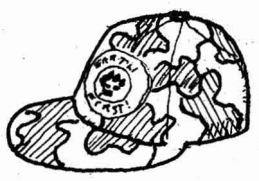
WINDOW STICKERS

EARTH FIRST! FIST Green EF! fist with the words "EARTH FIRST! No compromise in Defense of Mother Earth" in green on a 3 inch diameter white vinyl circle. **4 for $1 postpaid.**

NO COWS Cow and barbed wire in black with "universal no" red slash and circle. Words: Free Our Public Lands! Stop Destructive Welfare Ranching End Public Lands Livestock Grazing. 3 inch diameter white vinyl circle. **6 for $1 postpaid.**

CAMO CAPS

We have camouflage baseball caps in 100% cotton with adjustable tabs so one size fits all. The EF! fist logo and the words "EARTH FIRST!" are printed in black. **$8 postpaid.**



NON-CAMO CAPS

For you non-militaristic types out there, we have a non-camouflage cap — the fist and "Earth First!" in black ink on a tan cotton cap with a cloth back. One size fits all. **$8 postpaid**

Picture Propaganda

CRACKING OF GLEN CANYON DAMN MOVIE

The excellent 10 minute, color-sound 16 mm movie of Earth First! cracking Glen Canyon Damn in 1981 starring Ed Abbey and Johnny Sagebrush. An inspiring and humorous introduction to the Earth First! movement. Rental fee of $30 for showing to groups (includes shipping fee); $5 (shipping only) for EF! groups. Note: rental only; not for sale.

DAMN MOVIE VIDEO

We now have the cracking of Glen Canyon Damn for sale on video. $20 postpaid.

OVERGRAZING SLIDE SHOW

"The Eating of the West" graphically displays the devastation of Western public lands at the hands (and hooves) of the livestock industry. The show consists of over 100 high-quality slides from National Forests, National Wildlife Refuges, and BLM lands which portray the shocking magnitude of the problems caused by grazing. The slide show comes with a written script and is rented at cost, $10. Free copies of a 48-page tabloid on grazing are also available. Please include with your order the name and phone number of a contact person, and the date you need the show along with alternate dates. Orders **must** include street address for UPS delivery. "The Eating of the West" was funded by donations to Lynn Jacobs and the Earth First! Foundation.

SILENT AGITATORS

Fun to stick anywhere — bar bathrooms, Freddie offices, trail registers . . . wherever the evil ones need to know that we are about and watching.

EARTH FIRST! FISTS

Green EF! fist logo with words "EARTH FIRST! No compromise in defense of Mother Earth" in red ink. 1 5/8 inch diameter circles. **30 for $1.25 postpaid.**

ANTI-GRAZING

A grazing cow and barbed wire with the universal "no" slash, and the words "Free Our Public Lands!" and "Stop Destructive Welfare Ranching End Public Lands Livestock Grazing." 1 5/8 inch diameter circles. **30 for $1.25 postpaid.**

COORS

Spread the word on these villains. Black words on green stickers. 2 x 3 inch rectangles. **10 for $1.25 postpaid.**
Coors is Anti-Earth
Coors is Anti-Women
Coors is Anti-Labor
AND IT TASTES AWFUL!
BOYCOTT COORS

"TOOLS"

The late John Zaelit's Monkeywrench and Warclub design is back by popular demand. Brown design with "Earth First!" in green on 1 5/8 inch diameter white circles. **30 for $1.25 postpaid.**

BUMPERSTICKERS

Unless otherwise indicated, our bumperstickers are green lettering on long lasting white vinyl and are $1 postpaid. *Starred bumperstickers are multi-colored with designs and are $1.25 postpaid.

AMERICAN WILDERNESS *
LOVE IT OR LEAVE IT ALONE
(with red, white & blue US flag)

ANOTHER MORMON ON DRUGS

BACK TO THE PLEISTOCENE
(With "Ned Ludd" logo)

BOYCOTT COORS "BEER"

DAMN THE CORPS NOT RIVERS

DARWIN
(letters in evolving fish with legs)

DESERT RAPER
(bright red lettering — a sticker with many uses)

DEVELOPERS GO BUILD IN HELL!
(black and red lettering, 12 for $5)

DREAM BACK THE BISON
SING BACK THE SWAN

EARTH FIRST!

ESCHEW SURPLUSAGE

HAYDUKE LIVES

HUNT COWS - NOT BEARS

HUNTERS:
Did a cow get your elk?

I'D RATHER BE MONKEYWRENCHING
(with Monkeywrench/War Club logo)

IF YOUR PECKER WAS AS SMALL AS MINE, YOU'D NEED A MUSCLE WAGON, TOO!
(Important note: This bumpersticker is — hopefully! — not for your own vehicle, but to surreptitiously paste on a jacked-up muscle wagon you find in the local shopping center parking lot. Don't get caught! These stickers are constructed out of cheap paper with permanent adhesive to maximize the difficulty of removing them. Special price: 12 for $5!)

MALTHUS WAS RIGHT

MUIR POWER TO YOU*
(white and black on brown with face of Muir)

NATIVE*
(blue words with blue, green & white globe)

NATURE BATS LAST

NEANDERTHAL AND PROUD
(With "Ned Ludd" logo)

OIL AND BEARS DON'T MIX
(with bear logo)

PAY YOUR RENT
WORK FOR THE EARTH

PROTECT OUR ENVIRONMENT
STOP PUBLIC LANDS LIVESTOCK GRAZING

REDNECKS FOR WILDERNESS

RESCUE THE RAINFOREST

RESIST MUCH, OBEY LITTLE

SAVE THE YELLOWSTONE GRIZZLY
(red & brown with bear & no ski area design)

SAVE THE WILD

STOP THE FOREST SERVICE
SAVE OUR WILD COUNTRY

STOP CLEARCUTTING
(Regular stickers for regular price. Also available on cheap, hard-to-remove paper, 12 for $5)

SUBVERT THE DOMINANT PARADIGM

THINK GLOBALLY — ACT LOCALLY

VOTE GREEN

WOLVES! - NOT COWS

EARTH FIRST! MERCHANDISE ORDER FORM

Make checks out to "Earth First!" or send cash. Mail to **Earth First!, POB 7, Canton, NY 13617.** Please allow five weeks for delivery (contact us if it has not been received in that time). If possible, please use a street address so we can ship by UPS. First Class delivery can be arranged. Enter size, color, style, etc. We are sometimes temporarily out of certain items while waiting for stock to arrive. We'll send you the rest of your order immediately and the missing item as soon as we receive it. If you are in a hurry, give us a second choice of colors and when you need it by. Orders from outside of the United States must be in U.S. currency and include extra for shipping. Please use a separate subscription form when sending in a subscription.

how many	Trinket Description	Color	Size	Amount

Sub-total
Add 7% sales tax if NY delivery.
OKAY, HERE'S

Name _____
Street _____
City, State _____ Zip _____

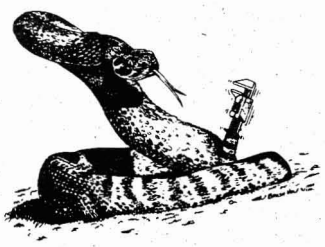
Almost FREE BUMPERSTICKERS!

The following bumperstickers are printed on cheap paper (very difficult to remove) and look great on certain signs throughout the West. We have a large quantity available, and will happily send you some if you'll cover the postage. Send a 25 cent SASE for two stickers, 45 cent SASE for six, or write to inquire about larger volumes.

GET LIVESTOCK OFF
OUR PUBLIC LANDS

PUBLIC LANDS GRAZING =
WELFARE RANCHING

& SNAKE OIL



EARTH FIRST! SWEATSHIRTS

Years of requests finally convinced us to print an EF! sweatshirt, and it turned out to be a beauty. It features the fist and slogan in emerald green on a gray 50/50 Hanes sweatshirt. $20 postpaid.

French Cut Clearance Sale!

We are closing out our stock of womens' french cut t-shirts. All french cuts will go for just $5 postpaid, as long as supplies last. Shirts are all 50/50 blends, with colors and patterns as described in t-shirt listing. We have Small in all designs, Medium in the Griz design only, and no Larges. Note that these shirts run very small (they do nicely as kids' shirts: S=L kids, M=XL kids). Please give an alternate selection with your order, just in case.

MOTHER GRIZZLY AND CUB
DEFEND THE WILDERNESS
EARTH FIRST!

A NOTE ON TAN T-SHIRTS

Alas, we are victims of fashion! We expect to be running out of all our tan t-shirts over the next few months because *we just can't get any more.* Current fashion trends run to day-glo colors, and none of the big t-shirt makers are producing heavy-weight tan t-shirts. Oh, woe! Much as we at the Journal like tan, our current stock is all we expect to have for some months – until fashions change again. If you really want tan, get it now.

EMBROIDERED PATCHES

EARTH FIRST!

This embroidered patch features the green fist and the words "EARTH FIRST!" and "No Compromise." Green and black on a white 3" diameter round patch. **$3.50 postpaid.**

HAYDUKE LIVES

These are black 3 inch diameter round embroidered patches with a red monkeywrench and the words HAYDUKE LIVES in red. **$3.50 postpaid.**

T-SHIRTS

Unless otherwise noted, all shirts are 100% cotton and are available in sizes S, M, L, and XL. Shirts with an asterisk (*) will not be reordered when we run out. We're making room for new designs.

DON'T TREAD ON ME

Monkeywrenching rattler on front with the words "Earth First!" and "Don't Tread On Me" (no longer printed on back). Brush Wolf's amazing full color snake seems ready to lunge off the shirt. **Now in two colors:** sand (tan) and watermelon (pinkish). *Sorry, no large tans.* $13 postpaid.

*MOTHER GRIZZLY AND CUB

A pretty EF! shirt! A lovely full-color mother grizzly and cub against the rising sun on a light blue shirt. "American Wilderness - Love It Or Leave It Alone" slogan. Art by Susan Van Rooy. $13 postpaid. *(Sorry but we have no XL, and won't be getting more.)*

AMERICAN CANYON FROG

Roger Candee's popular American Canyon Frog (Croakus abyssus pistoffus) with the message "AMERICAN WILDERNESS LOVE IT OR LEAVE IT ALONE." A very colorful 4-color design on a grey shirt. $12 postpaid.

*THE CRACKING OF GLEN CANYON DAMN

Jim Stiles' infamous masterpiece. Keep on praying for that one little precision earthquake! Black design on blue heather 75/25 cotton/poly blend. $10 postpaid.

DEFEND THE WILDERNESS

The monkeywrencher's shirt. Art by Bill Turk. Silver design on black 100% cotton Beefy-T for night work. $10 postpaid.

EARTH FIRST!

Fist logo with words "EARTH FIRST! No Compromise in Defense of Mother Earth!" in black on green or red 100% cotton Beefy-T . $10 postpaid.
In kid's sizes, too! Only color is green, 50/50 blend, sizes S , M, and L. $7 postpaid for kid's shirts. Be sure to specify kid's when you order.

TOOLS

John Zaelit's powerful impression of wilderness defense both old and new — the monkeywrench and stone club crossed. Blue design on silver shirt. Also, while they last, black design on tan or blue shirt (blue only in S & M sizes). $10 postpaid.

NED LUDD BOOKS

The Ned Ludd Books logo of the Neanderthal with a Monkeywrench (by Brush Wolf) and the words "Back to the Pleistocene" and "Ned Ludd Books." Black ink on a tan shirt. $10 postpaid.

FREE THE EARTH

A woman of power in an image by Gila Trout. Purple and silver ink on teal (dark blue), fuschia (hot pink) or wild orchid (purple- NEW COLOR). Our stock of fuschia is low and we can't get more, so give us an alternate choice if you order fuschia. $12 postpaid.

LONG-SLEEVED T-SHIRTS

For cool-weather wear, we offer two of our t-shirt designs on long-sleeved 100% cotton shirts, with colors and patterns described in t-shirt listing.
*MOTHER GRIZZLY AND CUB $16 postpaid.
DEFEND THE WILDERNESS $13 postpaid.

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