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AMBASSADOR RODNEY MINOTT

July 20, 1992

To: Senator Al Gore
SR-393 Russell Building
US Senate

Fax: 202/224-0580

ATTN: Beth Prichard and Katie McGinty

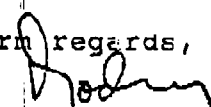
Dear Beth and Katie:

Here are a couple of items to tuck away for both the immediate campaign and something for 1993:

1. The University of California at Santa Cruz (Monterey Bay) is a potential hot-bed of support for the Senator because of his environmental record. One of my students from there, Debbie Jordan, asked if I'd put a request into the mix in hopes that a California schedule might see Al able to put an appearance in there. (I know from my own campaign experiences that these now have to go through the national campaign machinery, but this would be a good venue for the ticket). Clinton is still relatively weak and unknown out here but Al is highly regarded and an appearance talking about the environment could be good issue-wise, good for Clinton, and the physical setting would be magnificent: a quarry amphitheatre seating approximately 5,000, up on a hill overlooking the Pacific with endangered and majestic Redwood trees as a backdrop. Spectacular stuff. Also, there are adjacent communities for fundraising.

2. Win or lose (and we'll win): after 18 months of harrasing the Navy (as opposed to being harrassed by it !) I've finally have gotten the Navy to ask me for a conference proposal on the military and the environment. Katie, do you remember that you were supposed to attend a one-day roundtable at Stanford last March hosted by myself and the US Army War College? Well, it was a highly successful preliminary step in approaching a bigger, policy-level conference to be held on the East Coast preferably in Washington. The Navy, the most conservative of the Services, has been dragging its anchor on my proposal but reality is becoming unavoidable and now they are beginning to get sensitized. I want the Senator as the keynoter. Months ago when I first had this idea I had discussed it with Leon and Al. But the Navy had the "slows" for all sorts of reasons. Now, things are changing. So, following our victory in November and a wonderful blowout in January, I hope to have this darned conference organized with Vice President Gore as the keynoter ! Sound good to you ? Does to me.

Warm regards,


Rodney Minott
etc.

FAX: 408/646-2949

STANFORD UNIVERSITY, STANFORD, CALIFORNIA 94305
871 111 57

July 8, 1992

PAUL R. EHRLICH
BING PROFESSOR OF POPULATION STUDIES
DEPARTMENT OF BIOLOGICAL SCIENCES

Senator Albert Gore
393 Senate Russell Office Building
Constitution and Delaware Avenues NE
Washington, DC 20510

Dear Al:

Anne and I hope that the rumors we hear are true, and that you will be running with Governor Clinton. We are, as you know, very anxious to see George Bush retired, and think the two of you would be an excellent team to do the job (and hopefully retain the White House for 16 years!).

At any rate, this letter is to offer any aid that we can provide within the limits of our schedules: encouraging environmental groups to work hard for you, helping your campaign to organize a "Scientists for Clinton/Gore," making appearances, etc. I have scheduled several speeches in late-September and October with the specific goal of helping to retire George Bush.

We realize that, while we can help with some audiences, we're likely to be poison with others. Just let us know when you think we can be of help, and we'll do our best.

Good luck!

Best regards,

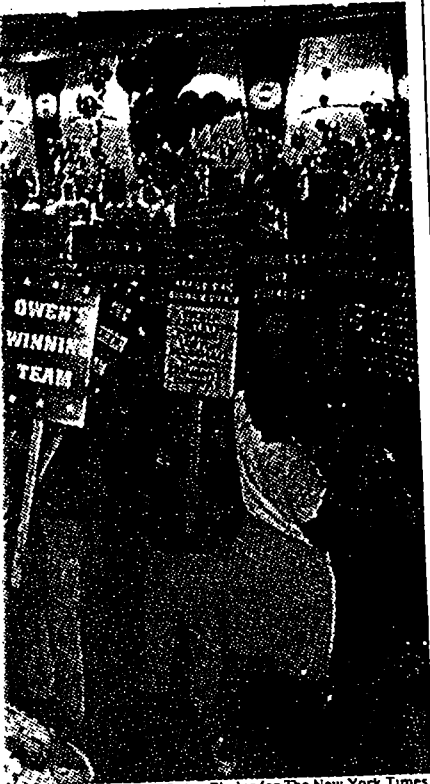
Paul
- Anne

White House

Bush Criticized Over Visit to Recycler

By RICHARD L. BERKE
Special to The New York Times

WASHINGTON, June 17 — Days after President Bush angered participants in the Earth Summit at Rio de Janeiro, environmentalists are attacking him again for traveling Thursday



Brian Phelps for The New York Times

in the endorsed candidate, Bill Clinton. Section of Owen F. Bieber as president.

in the Arms of Perot

years old, faces token opposition.

Mr. Bieber charged that as chairman of Electronic Data Systems Corporation in the early 1970's, Mr. Perot "went to great lengths to keep workers" in an E.D.S. office near San Francisco from forming a union. When the workers did vote to recognize the union, he said, E.D.S. shut the office and moved to a nonunion office.

An E.D.S. spokesman, Tony Good, disputed the union's account. He said the company was neutral on the union vote and later sold the office for unre-

to an oil-recycling company that has criticized the Administration's environmental policies.

On the first stop of a three-day campaign trip to California and Texas, Mr. Bush plans to tour Evergreen Oil Company, in Newark, Calif., which has been praised by environmentalists as being on the cutting edge in recycling used motor oil.

But environmental organizations asserted today that it was hypocritical of Mr. Bush to visit the company because his Administration has not been an advocate of the oil recycling industry. And they say they are surprised that Evergreen is welcoming Mr. Bush because it played an active role last year in a trade group's lawsuit against the Environmental Protection Agency on the issue.

Officials of Evergreen said today that they were pleased about the President's visit and the publicity it would bring. But Richard C. Fortuna, executive director of the Hazardous Waste Treatment Council, a group of high technology companies, of which Evergreen is a member, that sued the E.P.A., called the trip an attempt by Mr. Bush to deflect attention from his environmental record.

"For George Bush to go stand in front of a refinery and preach environmentalism would be like Jimmy Swagart going before the Vatican and preaching infidelity," Mr. Fortuna said.

Dispute Over Lead

The treatment council was a plaintiff in a suit filed in May in the United States District Court for the District of Columbia that accused the E.P.A. of not properly regulating the burning of used oil. Environmentalists say Administration policies encourage burning the oil, which is less costly than purifying it, and thus give big oil companies that burn an advantage over small companies like Evergreen that recycle.

Environmentalists say companies that burn should be required to remove lead from the oil, which would increase their costs, but produce less pollution.

"While Evergreen is trying to clean up used oil, these other companies use it as a fuel," said Daniel J. Weiss, director of the Sierra Club's environmental quality program. "Because the Bush Administration has opposed regulating the lead content in used oil, Evergreen and other green companies have struggled to expand their businesses. This is another example of George Bush as the hypocrisy Presi-

dent, not the environmental President."

In addition to the lawsuit, an Evergreen official, Peter H. Weiner, criticized the E.P.A. in testimony last year before a subcommittee of the House Energy and Commerce Committee, asserting that "it is time to take the lead out of E.P.A.'s pace in regulating used oil."

'Fantastic Press'

But today, Curtis Morgan, chairman of the 100-employee company near San Jose, sought to play down differences with the Administration.

"This gives fantastic press for us and our industry," Mr. Morgan said. "We couldn't be happier. I don't know what the President's agenda is for coming here, but we're very happy he is."

Pressed on the Bush Administration's policies toward his industry, Mr.

Environmental groups call the President's tour of a refinery hypocritical.

Morgan said: "We don't think it's enough, but we think it's a start. Things have been better than they were under the Reagan Administration."

Mr. Morgan said officials planning Mr. Bush's trip were referred to his company by the state Environmental Protection Agency.

Brushing aside the criticism, Torie Clarke, a spokeswoman for the Bush campaign, said: "Some of the environmental groups never miss an opportunity to score a few points. Evergreen happens to be a very good company. They are cleaning up the environment. They are good for the economy. They are on the cutting edge of U.S. industry. And they are very happy to have the President there."

Ms. Clarke said it was "not at all unusual in environmental matters" for companies to take part in suits against the Administration. "These things happen," she said. "It does not take away from the fact that the President is being welcomed."

Bill at

MICHAEL B. JACKSON 'S
Attorney at Law

*Some areas we
work on.*

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Telephone:
(916) 283-1007

**TULARE COUNTY
AUDUBON SOCIETY**

P.O. Box 4402 Visalia, CA 93278-4402

May 15, 1992

Mr. Ronald E. Stewart
Regional Forester
USDA Forest Service
Pacific Southwest Region
630 Sansome Street
San Francisco, California 94111

CERTIFIED MAIL - R.R.R.
Article No. P 114 931 900

RE: "STEWARDSHIP FIRST: Principles for Managing the National Forests in California"

Dear Mr. Stewart:

I am writing to ask you to provide clarification on the intended implementation timetable for your "philosophy statement" referenced above. The March 5, 1992 cover letter to your "Stewardship First" statement indicates that the principles of applying the best available scientific and research information, maximizing the maintenance of continuous vegetative cover, etc., are to guide implementation of new projects and be incorporated into forest plans as they are reviewed and revised.

In commenting on the draft environmental impact statement for the proposed Casa-Guard timber sale on the Sequoia National Forest, I submitted a copy of your "Stewardship First" statement and remarked that all the proposed action alternatives rely primarily on clearcutting and other even-aged harvest prescriptions. The final EIS, released two weeks ago, responded to this comment as follows:

The Regional Forester's philosophy statement will be used to [sic] in the revision of the Sequoia Land and Resource Management Plan. However, at present, project plans are developed to be in compliance with the existing Forest Plan, as modified by the Sequoia Mediated Agreement. [Casa-Guard Timber Sale Final Environmental Impact Statement, April 27, 1992, Appendix B, page B-28.]

Mr. Stewart, I would like to know whether you view the position taken by Sequoia National Forest to be consistent with your philosophy statement. Inasmuch as the Sequoia Forest Plan was not issued in final form until 12 years after the passage of the National Forest Management Act and 3 years past the Congressionally extended deadline for issuing Forest Plans, I question whether the mid-plan review and revision will be conducted on schedule, and whether the ecosystems of the Sequoia National Forest can wait that long, or longer, for the Sequoia National Forest to get around to considering the use of sound resource management principles.

Katie,

Linda Blum is very knowledgeable
on the USFS National Forest Plans
& Guidelines. Call if you need us! -

RECEIVED MAY 15 1992

Jill

Every year since the adoption of the Forest Plan, the number of acres that have been clearcut have been substantially higher than those projected by the Forest Plan as necessary to produce the ASQ volume, while the timber volumes have averaged roughly two-thirds of the ASQ. We believe the reason for this discrepancy lies in the unrealistically inflated 1980 timber inventory figures used in the Forest Plan. Whatever the reason, the areal rate of forest removal is far greater than was analyzed in the Forest Plan, and the consequences for fish and wildlife, streams, and the forest itself are becoming alarmingly apparent. In the Casa-Guard sale area, where approximately 50% of the timber inventory of the 13,000-acre sale area is acknowledged to have been removed in the last 30 years, the closed canopy forest has now been reduced to 14% of the total conifer-forest area; the Management Indicator Species for mature and old-growth forest types are no longer present as residents, but are now considered only migratory or occasional visitors. Fisheries are seriously degraded by the hydrological changes produced by past management activities.

What constitutes a "new project" to which your "Stewardship First" principles are to be applied? Are projects without signed decisions "new"? The Sequoia National Forest has ignored new directions and policies in the past by claiming that timber sales typically take seven years to prepare. If the Sequoia does not intend to incorporate "Stewardship First" into "new", i.e., newly initiated, projects until after the Forest Plan is revised, we should expect 12-15 more years of clearcutting.¹ While we can understand how project planners could feel reluctant to modify or abandon plans in which they've invested time and energy, the National Environmental Policy Act is interpreted by the courts and by Forest Service policy as requiring a dynamic, iterative approach to evaluating project alternatives. The concept of project alternatives is supposed to be an evolving one, requiring the agency to explore more or fewer alternatives as they and the relevant issues become better known and understood. See, e.g., Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519 (1978); Forest Service Manual Chapter 1950; 50 Federal Register 26078 at 26088-26089 (June 24, 1985); and 40 CFR §1502.9(c)(ii). The Sequoia National Forest has repeatedly demonstrated an unwillingness to modify its project planning as new issues, policies and directions come to light.

Nor has the Sequoia used the best available scientific information. The NEPA implementing regulations at 40 CFR § 1500 *et seq.* require the Forest Service to "make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action." (40 CFR § 1502.9(a)) The draft EIS for Casa-Guard contained only the local Forest's conclusions, without citing any scientific justification, and failed to consider any existing scientific or ecological information leading to other evaluations of the project area's condition or potential project impacts. I analyzed the facts contained in the draft EIS, did several weeks' worth of research, and either submitted or referenced numerous scientific publications — some of them PSWFRES research — in preparing and providing comments which presented a reasonable, alternative explanation of ecological conditions and relationships in the project area. I was very careful to cite the sources of the information supporting conclusions contrary to that of the draft EIS. Not one of these expert points of view was incorporated into the final EIS, nor was there any meaningful disclosure of or response to these opposing views, in violation of 40 CFR § 1502.9(b) and § 1503.4(a) and (b). The same is true for the recently released Red Hill Planning Area final EIS and Cottonwood/Golf final EIS.

With Sandra Key taking over as Forest Supervisor, we are hopeful that better days are ahead. Members of Tulare County Audubon Society have met with the new Forest Supervisor,

¹ Even-aged management prescriptions, regardless of their labels, almost always end up as clearcuts on this forest. Whether they are called Regeneration Mosaics or New Forestry With Wildlife Clumps, after site prep burning there's usually nothing or next to nothing left in cut units. Therefore we find it easier and more accurate to call them all clearcuts.

and I was able to have a telephone conversation with her last week to try to establish better communications with her than we were able to have with the previous Supervisor. We will continue these efforts. But in the meantime, the Forest has issued four new timber sale decisions which make a mockery of your philosophy statement and of most of the NEPA regulations in both form and content.

In the interest of avoiding still more appeals and litigation against the Sequoia National Forest, will you please take action to bring its performance into compliance with the law and Forest Service policy? Based upon our and other public comment letters and research publications, as well as the very critical comments submitted by the Environmental Protection Agency, we believe it would be only reasonable to revise the EISs for the Casa-Guard, Red Hill, and Cottonwood/Golf timber sale projects and the EA for the Jack timber sale. New alternatives which are based on sound analysis, the best available scientific research, and your "Stewardship First" principles should be developed, evaluated, and documented appropriately.

We respectfully request that you direct the Sequoia National Forest to rescind its recent project decisions and continue the NEPA processes for these timber sales in accordance with law and "Stewardship First." We would appreciate a response from you at your earliest convenience, at least within ten working days from your receipt of this letter, sent to the address shown below.

Sincerely,

Linda L. Blum

Linda L. Blum
P.O. Box 1749
Quincy CA 95971
Telephone 916-283-1007

cc: Ms. Sandra Key, Sequoia National Forest
Mr. Frank Lewis, Tulare County Audubon Society

1-77
9

**TULARE COUNTY
AUDUBON SOCIETY**

P.O. Box 4402 Visalia, CA 93278-4402

May 6, 1992

Ms. Sandra Key
Forest Supervisor
Sequoia National Forest
900 West Grand Avenue
Porterville, CA 93257-2035

Sent via FAX to (209) 781-4744

CERTIFIED MAIL - R.R.R.
Article No. P 114 931 898

RE: Management of Habitat for Goshawks and Furbearers

Dear Ms. Key:

I am writing on behalf of Tulare County Audubon Society to express our concerns and to ask you to take immediate actions to redress serious shortcomings in the way Sequoia National Forest has been managing its lands with respect to sensitive species, particularly the northern goshawk, Pacific fisher, and pine marten. The National Forest Management Act, Forest Service regulations, and Regional direction all require that habitats for these species be managed to ensure that viable populations are maintained throughout their native ranges. The Mediated Settlement Agreement ("MSA") of the 1988 Forest Plan contained additional provisions for how the Sequoia National Forest would begin to meet its obligations for habitat conservation. Unfortunately, recent evidence has shown that progress toward these goals is not being made.

In January of this year, I began corresponding with Phil Bayles and Jim Tank to find out the status of the goshawk and furbearer networks for the Sequoia. The results of this paper dialogue are contradictory. When considered together with the analyses and conclusions contained in the Casa-Guard, Red Hill, and Cottonwood/Golf timber sales' NEPA documents and decisions, the picture is very disappointing.

Goshawk Habitat Network

On January 27, Mr. Tank sent me excerpts from the 1991 Progress Report which I believe was presented to the Multiple Use Liaison Committee overseeing the implementation of the MSA. The Progress Report stated that an 8,000-acre goshawk network was completed by October 31, 1991, and was to have been forwarded to the Regional Office shortly thereafter. When I made a FOIA request for copies of the goshawk network map and all accompanying documentation, I received a draft map and a letter dated April 7, 1992, which supposedly conveyed the map to the Regional Office, but no additional documentation which explained how the sites were selected, whether they were occupied by goshawk pairs, whether nest sites were confirmed, etc. Then in an April 21, 1992, letter from the Regional Forester, I was informed that there is no correspondence on file at the Region for a Sequoia National Forest goshawk network. His letter did not indicate whether the draft network map had been received, but since the April 7 cover letter wasn't there, I wonder whether Mr. Heebner has sent the map yet, either.

RECEIVED MAY 11 1992

All of the above stands in stark contrast to the representations made to the public in the Casa-Guard, Red Hill, and Cottonwood/Golf EISs, which claim "The Sequoia National Forest Draft Northern Goshawk Network is currently being developed with the help of the Regional Office." (Red Hill Planning Area FEIS, page 1-55 of Appendix F)

The draft network map does not comply with the standards and guidelines of the 1984 Pacific Southwest Regional Guide for density of goshawks within multiple-use management zones. The Regional Guide calls for a distribution "evenly throughout the habitat range with at least one nest per 18 square miles." (Pacific Southwest Regional Guide FEIS, 1984, page 4-25) The Sequoia draft map, by contrast, provides for a territory density of roughly 1/2 to 3/4 nest sites per 18 square miles throughout the suitable timber base. The scientific credibility of the Regional Guide's territory size and vegetative composition requirements are matters open to debate at this point, based on current scientific literature, but that discussion can wait for another day. On the basis of density and distribution alone, the Sequoia's proposed network does not satisfy legal requirements.

Furthermore, the Sequoia National Forest has not provided anything which provides a reasoned explanation for the selection of sites within the network, or which insures that the goshawk population is viable, per the NFMA implementing regulations at 36 C.F.R. § 219.19. Since the viability "insurance policy" does not exist, no current timber sales or other Forest Plan-implementing decisions meet the minimum specific management requirements of 36 C.F.R. §§ 219.27(a)(5) and (6). Project compliance with these provisions, and documentation thereof, are specifically required by the Forest Service Manual Chapter 1920 and Chapter 5 of Forest Service Handbook 1909.12. (See 53 Federal Register 26807, 26836 (July 15, 1988))

It is disappointing, to say the least, that the Sequoia National Forest does not have adequate goshawk management a full decade after the NFMA regulations were instituted, eight years after the Regional Guide issued standards and guidelines, and four years after the Forest Plan was adopted. The MSA at page 59 commits the Forest to submit a proposed network to Region 5 by January 1, 1991, for approval. We are now 17 months overdue, and the Regional Forester says his office doesn't have a thing on file. In our view, the Sequoia National Forest is violating the National Forest Management Act, NFMA implementing regulations, Regional standards and guidelines, the National Environmental Policy Act, the Forest Plan, the Mediated Settlement Agreement, and the Administrative Procedure Act by its current management of goshawk habitat.

The Forest's explanation for the lack of a network throughout the Forest Plan mediation process was that funds to conduct surveys and other work necessary for network development had been unavailable. If this was and is the case, then we request that you exercise your authority under 36 C.F.R. § 219.10(e) to change Forest Plan implementation schedules for timber sales and other habitat-altering activities to prevent further degradation of goshawk habitat until such time as the Forest complies with all applicable laws, rules, and regulations, and until maintenance of a viable population can be ensured.

Furbearer Habitat Management

In many respects the prospects for maintaining viable populations of furbearing species, most notably Pacific fisher and pine marten, are even bleaker than for goshawks. The MSA committed the Sequoia National Forest to identify critical habitat for furbearers in FY 1990 and 1991 in accordance with the Region 5 Draft 1989 Guidelines for Identification of Suitable Furbearer Habitat (or any amendment) and to provide interim protection of this habitat. (MSA page 56) Again, in January Mr. Tank provided the 1991 Progress Report pages which stated,

"Quality habitat for furbearers has been preliminarily identified as required in [MSA] Section E.3.b." My March 26, 1992, FOIA request was answered with the provision of a draft furbearer habitat map which is grossly inadequate to provide for fisher or pine marten habitat requirements and population viability. Mr. Heebner's April 9 letter responding to my FOIA request states that no documentation exists for a furbearer network. Regional Forester Stewart's April 21 letter says, "The map and accompanying documentation of the proposed Sequoia NF furbearer network, including correspondence with the Regional Office, do not exist."

My review of the map leads me to conclude that the MSA's provision to identify habitat in accordance with the draft guidelines has not been fulfilled. I am not referring to just the areas designated in Exhibit H of the MSA, but throughout the Forest. First, neither the Hume Lake nor the Cannell Meadow Ranger Districts have any suitable habitat identified, even though the species are present in each. Second, and critical to assessing the overall situation, the base information layer of the draft furbearer map is of land use allocations from the Forest Plan, rather than of vegetation types. It is impossible to discern from the map whether the roadless areas, research natural areas, and wilderness areas, for example, are suitable or not, and to what degree suitable areas supply all or some life requirements for fisher and pine marten. Third, the distances between the four furbearer areas shown on the map exceed the corridor lengths recommended by the draft Regional guidelines for identifying habitat.

The four furbearer habitat areas on the Forest's draft map are the Peyrone Grove of giant sequoias, which was fragmented by clearcut logging in the mid-1980s; the south side of Parker Peak; Capinero Creek-White River; and Portuguese Peak. All but the last make sense as furbearer sites (for fisher, at least) but they are far, far too small to protect more than a tiny fraction of an animal's home range. The Portuguese Peak location makes less sense; if a fisher has been found there recently, I'd be surprised if it wasn't a displaced soul from the Stormy fire and Deep 8% sale areas, where virgin stands of mixed conifer forest existed prior to being logged in the last two years. The Port sale clearcut-logged at least five units in the Portuguese Peak area in 1990. The other three locations named above have timber sales planned for approval this time next year: the Mule sale at Peyrone, scheduled for April 1993; the Cold sale at Parker Peak, set for May 1993; and the White timber sale on White River, slated for June 1993, according to the current project planning schedule.

While it is clear from just my cursory review that the Sequoia National Forest has not complied with Section E.3.b. of the MSA, major timber sale decisions authorized by your office convey an entirely different impression to other agencies and the general public. For example, the Casa-Guard timber sale EIS claims that a furbearer travel corridor will provide adequate habitat, but as we noted in our comments on the DEIS, the corridor contains only low-quality habitat and is discontinuous, being interrupted at its midpoint by extensive plantations and roads. It is a pathway to nowhere from the furbearers' perspective, as its southern terminus is the 7,500-acre area burned by the Bonita Fire in 1977. The draft furbearer habitat map does not delineate any furbearer habitat on the Kern Plateau.

Furbearers are acknowledged to be present in both the Cottonwood/Golf and Red Hill timber sale areas, but there are no detailed analyses to document the EISs' conclusions, and no provisions for habitat protection. The Cottonwood/Golf DEIS characterized the Breckenridge area as not containing sufficient suitable habitat, but the forest types (as reported in timber strata types) are most likely inaccurate, inasmuch as logging units shown as stratum M4P are projected to yield as much as 37.9 MBF/acre under cutting prescriptions less intense than clearcutting. The Sequoia National Forest is hard pressed to find M4G stands with volumes greater than 26 MBF/acre. Similarly, the Red Hill sale area has both fisher and marten present, the forest there has suitable

habitat characteristics now, but logging and related activities are targeted specifically at significantly reducing habitat suitability.

Thus we have a situation in which the timber sales authorized in the last two weeks will certainly affect these sensitive species. Allowing impacts to occur without ensuring population viability is prohibited by Forest Service directions in the Forest Service Manual and Handbook, as well as by law and regulations. In light of the above, as well as the failure of all three EISs to respond meaningfully to our substantive comments on this and other significant issues, we plan to file administrative appeals on the timber sales in the coming weeks, if necessary.

But we would like to request an alternative, which is that you immediately withdraw the decisions on the Casa-Guard, Red Hill, and Cottonwood/Golf timber sales, and direct your staff to prepare and circulate supplemental EISs which fully comply with NEPA, NFMA, and Forest Service direction, as well as with the MSA's Section E.3.b. The CEQ's NEPA implementation requirements at 40 C.F.R. §§ 1502.1, 1502.8, 1502.22, 1502.24, and 1503.4, along with FSM Chapter 1950 and FSH 1909.15, are worthy of review with your staff as you consider our request.

As with the goshawk habitat issue, we also request that you immediately exercise your authority under 36 C.F.R. § 219.10(e) to temporarily suspend the timber program implementation schedule, on the grounds that funding has not been available to accomplish studies necessary to making informed decisions which fulfill the Forest's legal requirements for fish and wildlife resource protection.

As you are no doubt aware, the Forest's performance with respect to both law and the MSA has been a hot topic of conversation during the last few weeks. The level of public concern and involvement in the timber program is higher than I recall it ever being. Everyone is looking to you, before you've even warmed the seat of your new chair, to get the management of the Sequoia National Forest back on track. We would appreciate a response to the requests we've made here as soon as possible, at least within the next ten days. Please address your response to me, at the address shown below, and I will share it with the chapter leaders.

Sincerely,

Linda L. Blum

Linda L. Blum
P.O. Box 1749
Quincy CA 95971
(916) 283-1007

cc: ✓ Frank Lewis, Tulare County Audubon Society
✓ David Edelson, NRDC
✓ Julie McDonald, SCLDF
✓ Carla Cloer, Kern-Kaweah Chapter, Sierra Club
Gordon Nipp, Kern-Kaweah Chapter, Sierra Club
✓ Mark Cave, Kaweah Flyfishers
✓ Brett Matzke, Kaweah Flyfishers
✓ Joan Reiss, The Wilderness Society
✓ Barb B...
✓ ...
✓ ...
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LINDA L. BLUM
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April 23, 1992

Appeals Staff, U.S. Forest Service
U.S. Department of Agriculture
P.O. Box 96090
Washington, D.C. 20090-6090

RE: Proposed Rule Changes for Appeals of Forest Service Project Decisions

Dear Appeals Staff:

As a U.S. citizen who has been involved in the public participation processes of National Forest System management for the last eight years, I am simultaneously pleased and appalled by the Forest Service's proposal to eliminate administrative appeals of project-level decisions, as published in the Federal Register on March 26, 1992.

I am pleased by the idea of increasing pre-decisional public involvement, including review of NEPA documents prior to decisions being made. In my estimation, greater public participation in the actual planning of projects could benefit everyone interested in the management and use of natural resources on our public lands. Requiring pre-decisional project review and comment could help resolve differences, and thereby speed up the implementation of projects and promote greater certainty for communities and users dependent on National Forest goods and services. If the Forest Service's own experience has shown that pre-decisional comment periods improve decisions and reduce appeals, then the logical course of action would be to adopt the notice and comment requirement nationwide.

But please retain the appeals process. In the context of the National Forest System's land and resource management planning the administrative appeals of project-level decisions, where the irretrievable and often irreversible commitments of our natural resources takes place, have been promised to the public as a final check on agency decisionmaking. The opportunity to appeal site-specific decisions was presented, almost as a sop, to placate the public in order to keep Forest Plans from being appealed. It's not fair to take away appeal rights. Does the Bush Administration have no sense of fair play at all?

Eliminating administrative appeals of project-level decisions will not solve the agency's problem, and in my experience it would only make the problem worse by providing no other recourse than judicial review. The time, money, and energy of both the public and the agency that would be expended in litigation is vastly greater than what currently goes into administrative appeals. As a society, we do not need to add that extra burden to our judicial system.

Local communities, county governments, and the logging and timber companies — the acknowledged beneficiaries of the proposed rule changes — are not the only parties affected by the proposal to expedite project implementation. Whether the timber industry likes it or not — and I live in a timber mill town, so I think I have some idea — the national forests belong to all of us; for a great many people like me, our common ownership of the public lands is the only form of land ownership we will ever attain. We all have a right to expect professional, sound stewardship of our public lands. Our tax dollars support the public land managers, and it already galls a lot of us that we spend so much personal time and money opposing the very people our tax dollars pay. We have a right, as part owners of the land and its resources, to have a say in whether some or all of us, including our children and their children, will get to enjoy our property.

Sometimes the appeals process works; when it does, the Forest Service as a whole is able to improve its performance and its consistency of adherence to agency policy and law. The appeals process provides an opportunity for organizational self-correction and quality control regarding policies, procedures, and sound scientific management of resources. Unfortunately, though, the Forest Service as an agency has not been fulfilling its organizational oversight responsibilities much lately.

Studies by the General Accounting office and others have shown that the overwhelming majority of appeals are not frivolous; nor do they affect more than 5% of the annual timber production from national forest lands. If memory serves, one study conducted on Region One appeals found that, of appeals carried through to court or to the point where the reviewing officer reversed the original decision, only 8% of administrative appeals were found to be without merit. Doing away with the appeals process in order to reduce delays in implementing decisions would be fair and appropriate if administrative appeals were merely stalling tactics without substantive merit. But the fact of the matter is that the line-officer oversight concept is sound; it is merely ineffective at the moment due to political pressures.

Despite claims of expanded notice and opportunity for comment on Forest Service decisions, the new rules' shortened time period of 30 days would greatly impede the public's ability to meaningfully participate in agency decisions. This is true not only because of the nature of mail delivery times in rural areas, but also because we have seen a trend toward compartmentalizing project documentation, incorporating materials by reference - including analyses and specialists' working papers, and otherwise appending project documentation without distributing it to the public. It has become standard policy on some national forests to accept only written requests for such documentation (how does this fit with the government's reduction in paperwork goal?), so the entire 30-day comment period could be consumed by mailings alone.

For example, suppose that Sequoia National Forest mails me a preliminary EA and FONSI; I normally get mail from Porterville 5 days later. I drop everything else I'm doing to read the EA, and late that night I discover that the EA contains only conclusions, that all the data and analyses are incorporated by reference and are on file in a district office in Kernville. The next day I send a letter to the district office, and it arrives 5 working days later, whereupon the district staff people spend two days copying the materials I've requested. Then another 5 days elapses before I receive the stuff. Counting weekends, that's 21-24 days gone by. With another weekend approaching, I'd have about 2 hours and 15 minutes to read, reflect, research, and write comments before I had to rush to the Post Office to get my public participation efforts off in the mail. If, God forbid, there should be a Postal Service holiday, or that certified mail should occasionally take 7 days instead of 5 — which it did two weeks ago — I would have been denied any chance to participate in the Forest Service decision. In sum, it would be a practical impossibility to receive notice of a proposal, obtain the necessary documents, review them, write comments, and have them delivered to the responsible Forest Service official within 30 days.

Contrary to the view expressed in the Federal Register notice, that eliminating administrative appeals would reduce the amount of paper involved and the time it takes to process it, I believe that the Forest Service should expect more paperwork. In the past couple of years in Region Five,

many of our appeals have been answered with a “go away, kid, you bother me” type of response — and sometimes the responses haven’t been even that polite or substantial. So I have been engaged in litigation of timber sale decisions on behalf of grassroots citizens and conservation groups. Bolstered perhaps by the Supreme Court’s opinion in Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 109 S.Ct. 1851 (1989), the Forest Service has retreated from confronting substantive issues head-on in court and has instead tried to defend itself with agency deference and administrative records. But these are only going to be effective for so long; the level of thoughtful consideration given to the issues by the decisionmaker in the Marsh case was unusual, in my experience. Our response to this tactic is to pack administrative records with all the relevant scientific studies, publications, and agency direction statements that we can find.

The National Environmental Policy Act requires the Forest Service to ensure the professional integrity, including scientific integrity, of its environmental analyses for projects, per 40 C.F.R. § 1502.24. We should not have to do the biological and ecological research and literature searches that the Forest Service staffs are charged with under the National Forest Management Act and the National Environmental Policy Act, but that’s the way it’s been going lately. And we’re getting better and faster at it. I recently submitted comments on a timber sale draft EIS that had so many scientific publications attached — mostly Forest Service publications — that it cost me \$18.00 just to mail it! I gladly paid it out of my own pocket in order to make sure that the evidence we may need in court will be before the decisionmaker when the final decision is made.

If the Forest Service wishes to be more efficient in its implementation of projects, permit me to make a few observations. Paperwork and the time it consumes will not be reduced until NEPA compliance is made a higher priority. It has been my experience throughout about a dozen administrative appeals that the district-level project planners have little or no concept of NEPA’s and NFMA’s documentation requirements. Thus it is seldom that the planning record for a project is already assembled in one location, and unnecessary time is spent physically assembling and copying records in order to transmit them to the reviewing officer. This time delay could be avoided.

In addition, the 100-day period allotted to the reviewing officer to act on an administrative appeal has only once been met in my experiences. Why this is the case I do not know. Perhaps better staffing and better staff management would improve the efficiency. But I reiterate that **I do not believe the Forest Service should eliminate its organizational oversight opportunities.** Maybe exercising more control over the outlaw forests and outlaw employees who refuse to learn from past lessons would remedy the situation.

Because I’ve yet to see the agency keep to its prescribed schedules, I believe the proposed 21-day turnaround time (proposed § 217.26) to be totally unrealistic, unless the Forest Service is also planning to exempt itself from the Administrative Procedure Act’s prohibitions of arbitrary and capricious decisions.

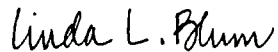
I would also note that the proposed rule changes as they relate to more public involvement and documentation of responses to public comments are already redundant. NEPA requires all final environmental analyses, EAs as well as EISs, to respond in prescribed manners to public comments. Please see 40 C.F.R. §§ 1500.3 and 1503.4. Furthermore, the Forest Service Manual and Handbook 1985 revisions (50 Fed.Reg. 26078, June 24, 1985) repeatedly emphasize the role of sincere, good-faith public involvement in project planning. The Forest Service doesn’t need the proposed regulations in order to work more efficiently and productively; it needs to do a better job of implementing and enforcing the regulations which are currently on the books.

Finally, a little editorializing: If rumors are true that the Bush Administration will next seek to shield the Forest Service’s actions from judicial review as well, I wish that you would assure President Bush, Secretary Madigan, and Chief Robertson that such an attempt will be met with

vigorous opposition by the American people. The U.S. Forest Service does not deal with matters of national security, nor does it have other constitutional grounds for being exempt from public and judicial scrutiny. The idea of having a non-defense, executive branch agency placed beyond the reach of citizens to compel compliance with federal laws is contrary to the principles of our system of government, not to mention downright scary.

Thank you in advance for giving me the opportunity to comment on the proposed rule changes.

Very sincerely,

A handwritten signature in cursive script that reads "Linda L. Blum".

Linda L. Blum

cc: Senator Alan Cranston
Senator John Seymour
Senator John Glenn
Senator Howard Metzenbaum
Congressman John Doolittle
Congressman Mel Levine
Congressman George Miller

TULARE COUNTY AUDUBON SOCIETY

P.O. Box 4402 Visalia, CA 93278-4402

March 30, 1992

Tule River Ranger District
Sequoia National Forest
32588 Highway 190
Springville, CA 93265

CERTIFIED MAIL - R.R.R.
Article No. P 755 278 936

RE: Red Hill Planning Area Draft Environmental Impact Statement

To Whom It May Concern:

In addition to comments which have been submitted by Ms. Carla Cloer regarding the Draft Environmental Impact Statement (DEIS) for the Red Hill Planning Area, the Tulare County Audubon Society wishes to submit the following comments and suggestions.

First, we request that a supplemental DEIS be circulated which contains all the "Working Papers" referenced in Appendix G of the DEIS, so that interested members of the public will have an opportunity to review and comment upon the analyses behind the conclusions presented in the Red Hill DEIS. We maintain that the EIS as currently presented violates the CEQ implementing guidelines for NEPA because the "evidence that the agency has made the necessary environmental analyses" (40 CFR § 1502.1) is missing from the impact statement. 40 CFR § 1502.21 permits Federal agencies to incorporate materials into an EIS, but not if public review is thereby impeded; the incorporated material's content must also be briefly described. Referencing documents that contain the data and analyses which support conclusions made in the DEIS, and housing these documents at the district office where they are readily available only to local residents, impairs our ability to obtain and review them.

The greatest single shortcoming of the Red Hill Planning Area DEIS is its failure to adequately consider the unique and irreplaceable value of the Slate Mountain Roadless Area and associated forests as a biologically intact ecosystem for mature- and old-growth-dependent species of wildlife. The Slate Mountain area appears to serve a critical function as a biological corridor between the Golden Trout Wilderness/Moses Mountain Roadless Area to the north and the Greenhorn Mountains to the south. In fact, the Slate Mountain area is the only intact large habitat block which is interior to the Sequoia National Forest; wilderness areas which also function as biological reserves are all located on the periphery of the Forest.

That the Slate Mountain area is critical to biodiversity in the southern Sierra is due to a combination of natural and human factors. The conifer forest zone is at most only 7 miles wide at this part of the Western Divide. The undisturbed width is at most only 4 miles, owing to intensive timber cutting to the northeast and east (from the Junction Compartment and extending through the Peppermint Creek area) and on the south, starting at the Peyrone Grove of giant sequoias and stretching to the Redwood Meadow Grove. The Red Hill Planning Area is necessary to maintain

landscape connectivity between the remaining stands of intact old-growth forest habitat. We are including with these comments a computer-generated map of the area, obtained from the Sierran Biodiversity project's Geographic Information System; it displays old-growth forest stands shown on 1990 Landsat imagery, the extent of plantations resulting from clearcutting, and the locations of giant sequoia groves as determined by the Forest Service and the Save the Redwoods League. The approximate boundaries of the Red Hill Planning Area have been sketched onto the map.

Throughout the Forest Plan mediation process in 1989 and 1990, as well as in public meetings, representatives of Tulare County Audubon Society have expressed their concerns about the availability and connectivity of old-growth habitats on the Tule River Ranger District. The maintenance of suitable habitat characteristics for spotted owls, goshawks, cavity-nesting birds and animals, and furbearing mammals (particularly Pacific fisher and pine marten) has been especially stressed. Throughout this period of time, the U.S. Forest Service has been promising to develop and implement habitat networks for goshawks and furbearers, but nothing in the DEIS reflects progress toward this goal. Recent scientific literature, including that generated by Region 5 of the Forest Service, is not utilized properly in assessing the suitability of the Red Hill Planning Area or the larger Slate Mountain area for furbearers; the question of preserving future options by setting aside habitat blocks and biological corridors is nowhere addressed, and needs to be.

The Red Hill DEIS, because it represents the first entry into the Slate Mountain Roadless Area, needs to evaluate the impacts of the proposed action and all reasonably foreseeable actions (including at a minimum the Black Mountain 2 Timber Sale, Bench Timber Sale, Mule Timber Sale, and Peppermint Mountain Resort) on the value and function of the area as a biological corridor. That the Forest Service is obligated to do so has already been settled by the U.S. Ninth Circuit Court in Marble Mountain Audubon Society v. Rice (914 F.2d 179, 32 ERC 1249, 21 Env'tl. L. Rep. 20,023 (9th Cir. (Cal.), Sept. 13, 1990)). The Sequoia National Forest is also committed to performing this analysis by the 1990 Mediated Settlement Agreement on the Forest Plan (see pages 73-74 of the Settlement Agreement).

The biological corridor concept comes from the field of conservation biology and involves landscape-scale habitat reserves:

There are several types of "corridors." Different corridor types operate at different landscape scales and/or serve different functions. The corridors which are the subject of the Grider Decision are "biological corridors." These are different, for example, from "wildlife corridors." Wildlife corridors need allow only for travel between habitat blocks and thus may be quite narrow. Biological corridors must provide for biodiversity, that is a linkage which allows interaction of species, habitats and genetic material over time. A continuum of ecosystem function is required for such a corridor. They must also be able to accommodate large scale natural disturbance events (e.g. fire). All these factors point toward large (wide) corridors. Whole drainages or systems of drainages and ridge systems are needed to perform biological corridor functions. (Memo from Felice Pace, dated October 24, 1990, to "Interested Parties re: The Grider Decision (Marble Mountain Audubon v. Rice): Applicability of "biological corridors" study requirements in other forests/areas.")

We are submitting several recent research publications along with this letter to provide a sampling of the state of current scientific knowledge on biodiversity issues.

The DEIS's analysis of the status of and project impacts to furbearer habitat, in particular, is inadequate and flawed. The DEIS states that "Current snag densities within the analysis area are estimated at 4.7 snags per acre" (DEIS page 4-9) and that trees considered to be at high risk of dying within the next several years would be removed in the proposed project, at the rate of 5-10 trees per acre (DEIS page 4-8). Implementing this action would decrease the snag and snag

recruitment densities below the levels specified in the "Region 5 Draft Interim Guidelines for Identification of Suitable Furbearer Habitat" (April 25, 1990, page 6), which specify that high-quality habitat parameters for fisher include at least 2 resting/denning snags (minimum 44" d.b.h.); 4-5 snags greater than 20" d.b.h. for foraging use; and live tree snag replacements which number at least 6 per acre greater than 44" d.b.h. and 12-15 per acre greater than 20" d.b.h.

Tulare County Audubon is disappointed by the dearth of furbearer census and habitat use information in the DEIS, and by its failure to consider future management options. We request a fuller, more reasoned explanation of alternatives and management decisions in the FEIS and in any supplemental DEISs which may be prepared.

Similarly, the DEIS's handling of spotted owl habitat considerations is flawed. Removing anything from suitable spotted owl habitat at this time is directly contrary to current Region 5 policy and direction aimed at maintaining future options for spotted owl conservation. The preferred alternative's proposal to extract 6 million board feet of timber from 900 (or 1200? the Summary's Table 2 (page S-4) contradicts the rest of the DEIS) acres of forest classified as suitable for use by spotted owls would be a direct violation of the Region's directive to permit habitat modification if, and only if, each owl use area would have 2,500 acres of suitable habitat remaining after the proposed action. According to Tables 4.1 through 4.6 in DEIS Appendix B, none of the owl use areas come close to meeting this criterion. Only one of the eight owl pairs in the analysis area is known to be reproducing at this time. Current expert speculation on low reproductive rates includes concerns about reduced prey populations; removal of the dead and dying component of the ecosystem would directly affect prey habitat availability and therefore the prey populations themselves. Until more information is known about the environmental reasons why so little owl reproduction is taking place, altering the habitat is neither wise nor justified.

We would state for the record that our information about the work of the California Spotted Owl Assessment Team indicates that, as for the northern spotted owl in the Pacific Northwest, the SOHA system of management has been thoroughly discredited as a means of ensuring population viability, which is required by Federal law and Forest Service regulations. Indeed, there is as yet no long-term strategy accepted by wildlife experts as offering a moderate to high probability of ensuring species viability. Altering the Red Hill area's habitat in the light of this uncertainty threatens to jeopardize the California spotted owl.

Finally, we wonder how the proposed harvest of timber, particularly group sanitation cuts, will affect the susceptibility of sugar pine to white pine blister rust infestations. The DEIS is silent on this issue. Two sugar pine/blister rust papers are also included here.

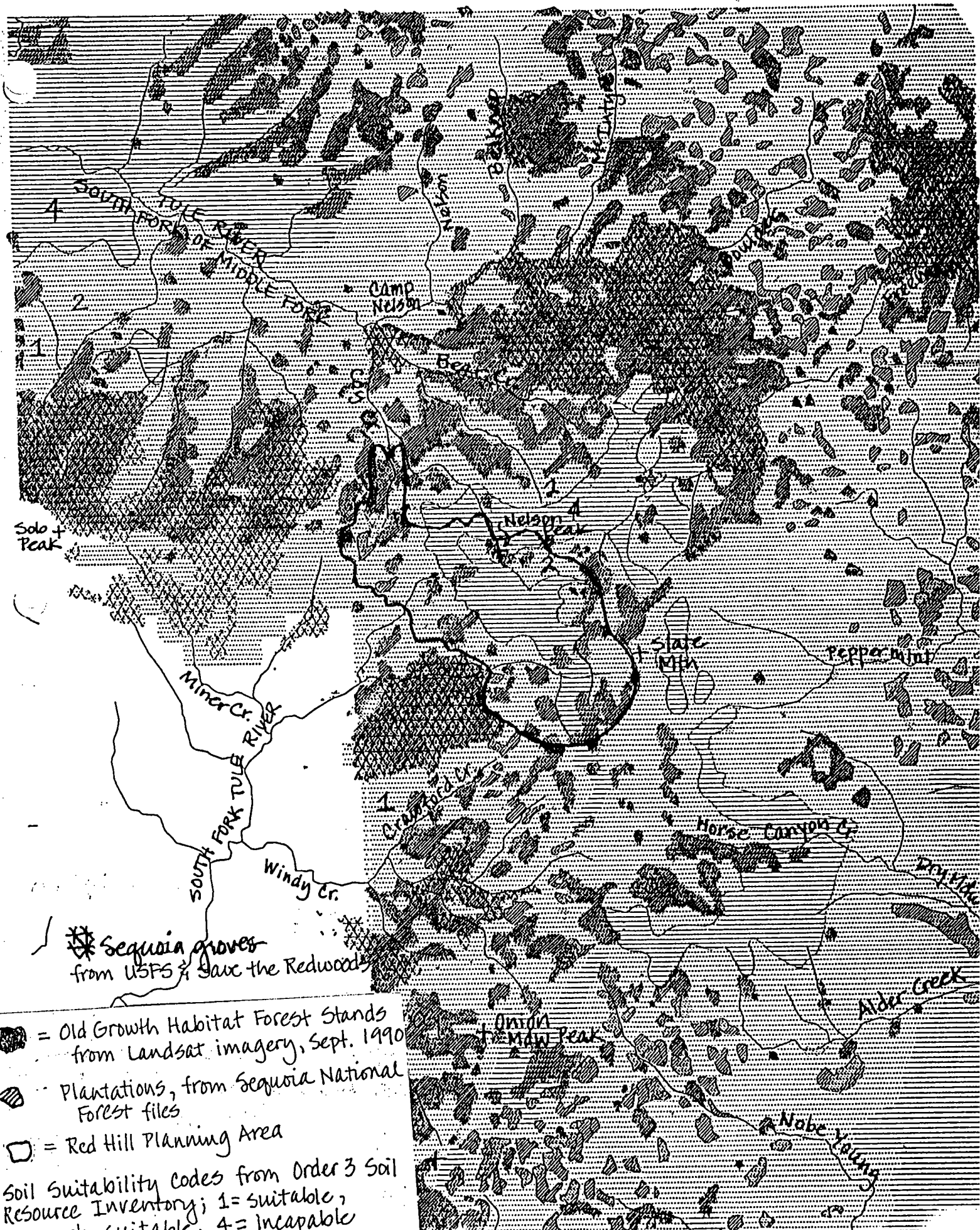
We have filed a FOIA request to try to obtain several of the working papers for the Red Hill DEIS; when these have been reviewed, we may have more comments to make. We would appreciate the opportunity to discuss our concerns in person with the project planning staff if you so desire. Please send a copy of all future NEPA documents and decisions to the address shown below.

Respectfully submitted,

/s/

Linda L. Blum
P.O. Box 1749
Quincy, CA 95971

OLD GROWTH FOREST STANDS AND PLANTATIONS IN THE SLATE MOUNTAIN REGION OF SEQUOIA NATIONAL FOREST – Sierran Biodiversity Project, 1992



TULARE COUNTY AUDUBON SOCIETY

P.O. Box 4402 Visalia, CA 93278-4402

March 31, 1992

Tule River Ranger District
Sequoia National Forest
32588 Highway 190
Springville, CA 93265

CERTIFIED MAIL - R.R.R.
Article No. P 755 278 937

RE: Red Hill Planning Area Draft Environmental Impact Statement

To Whom It May Concern:

Yesterday a comment letter and accompanying materials were submitted as part of the public comment period for the Red Hill Planning Area DEIS. Technical difficulties in this office (primarily a reluctant copying machine) prevented me from being able to include all the documents that I wished to enclose. I am writing today to submit those materials, to provide a complete list of the documents submitted yesterday and today, and to correct a couple of statements made in yesterday's letter. In addition, there are several comments which were inadvertently omitted from the previous letter, a testimony to how flustered a person can get when the machines one relies upon don't cooperate.

Documents Included With Comments

We would prefer, for the sake of brevity and to reduce the amount of paper used, to incorporate public documents by reference, but the Forest Service's internal rules are inconsistent and sometimes misleading on this point. The Forest Service can incorporate materials by reference under specific circumstances (40 CFR § 1502.21); the public, however, does not appear to enjoy the same privilege. Recent legal proceedings on other projects have shown us that the Forest Service's primary defense of its decisions is to attempt to limit judicial review to the administrative record. Furthermore, the proposed changes in administrative appeals rules which were supposedly published in the Federal Register last week may limit our ability to add to the administrative record at a future date. We therefore believe it is necessary to provide copies of the scientific publications and other documents pertinent to this project in order to have them included in the administrative record.

Among the publications enclosed with these comments are several papers dealing with the effects of forest fragmentation on vertebrates, and the selection and use of snags by cavity-nesting birds. They are included to assist the project planning staff in evaluating whether the proposed timber sale will meet not only the agency's guidelines but also the biological requirements of sensitive and cavity-nesting species of wildlife. It is our understanding that the Forest Service guidelines exist in order to fulfill the National Forest Management Act's mandate to preserve and protect biological diversity; and that significant new information exists which calls into the question the effectiveness of existing guidelines to satisfy legal requirements.

The list of documents accompanying Tulare County Audubon's comments should therefore include the following:

- Bull, E.L. 1987. Ecology of the pileated woodpecker in northeastern Oregon. *J. Wildl. Manage.* 51(2): 472-481.
- Cascade Holistic Economic Consultants. 1989. Management of sugar pine as influenced by white pine blister rust infestations in the mixed conifer forests of California. Eugene, Oregon. 15 pp.
- Cunningham, J.B., R.P. Balda, and W.S. Gaud. 1980. Selection and use of snags by secondary cavity-nesting birds of the ponderosa pine forest. Fort Collins: USDA Forest Service. Res. Paper RM-222. 15 pp.
- Kinloch, B.B., Jr. and D. Dulitz. 1990. White pine blister rust at Mountain Home Demonstration State Forest: a case study of the epidemic and prospects for genetic control. Res. Paper PSW-204. Berkeley, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 7 p.
- Map of Old Growth Forest Stands and Plantations in the Slate Mountain Region of Sequoia National Forest. Sierran Biodiversity Project. 1992. (attached to March 30 letter)
- Marble Mountain Audubon Society, et al., v. Rice. 1990. Opinion of United States Court of Appeals for the Ninth Circuit.
- Noss, R.F. 1991. Protecting habitats and biological diversity: guidelines for regional reserve systems. National Audubon Society. Draft report. 71 pp. and appendices.
- Raphaël, M.G. and M. White. 1986. Use of snags by cavity-nesting birds in the Sierra Nevada. *Wildl. Monogr.* 86: 1-66.
- Rosenberg, K.V. and M.G. Raphael. (date?) Effects of forest fragmentation on vertebrates in Douglas-fir forests.
- Sierra Nevada Group. 1989. Maintaining the ancient forest community on the Sequoia National Forest. Mother Lode Chapter, Sierra Club. 8 pp.
- . 1988. Maintaining Sierran fisher population viability. Sierran Biodiversity Project Paper No. 1. Mother Lode Chapter, Sierra Club. 15 pp.
- USDA Forest Service. 1990. Mediated settlement agreement of the Sequoia National Forest Land and Resource Management Plan. Sequoia National Forest, Porterville, CA. Pp. 55-59, 73-74, and 130-138.
- USDA Forest Service. 1990. Region 5 furbearer management - preliminary draft for comment; interim guidelines for identification of suitable furbearer habitat (draft). April 25, 1990. 23 pp.
- USDA Forest Service. 1992. Sequoia National Forest project planning schedule, 1/1/92 - 3/31/92. Sequoia National Forest, Porterville, CA. 2nd through 5th pages, unnumbered.

Corrections to Comment Letter of March 30, 1992

In the first sentence of the third paragraph on the first page, I mistakenly characterized the Slate Mountain Roadless Area and associated forests as the only biologically intact ecosystem. That entire sentence should read: "The greatest single shortcoming of the Red Hill Planning Area DEIS is its failure to adequately consider the unique and irreplaceable value of the Slate Mountain Roadless Area and associated forests as a biologically intact ecosystem for mature- and old-growth-dependent species of wildlife." The purpose of this statement was not to belittle the ecological importance of other areas of the Forest, but to draw attention to the fact that due to its size, its location relative to other undisturbed blocks of habitat, and its ecological complexity, the Slate Mountain region plays a vital ecological function. The value of that function needs to be fully and fairly addressed prior to the host of timber sales and other activities that are being planned for the near future.

The greatest threat to the preservation of the Slate Mountain region's ecological values comes from habitat alterations due to human activities. According to one expert in the field of conservation biology,

"anthropogenic habitat alteration remains the greatest of all threats to terrestrial and aquatic biodiversity. The effect of habitat alteration, generally speaking, is to create conditions unlike those under which many species native to an area evolved. Whereas some species thrive under the new conditions (we call them weeds), other species are not so adaptable. Some of the most severe habitat alteration, such as the replacement of complex old-growth forests by simplified tree farms, is occurring on lands managed by federal agencies. . . . Systems of interlinked nature reserves and adjacent multiple-use lands managed in an ecologically intelligent manner offer the best chance to protect sensitive species and intact ecosystems." (Noss 1991:2)

In order to illustrate the kinds of activities which threaten the biodiversity of the project area and the entire Slate Mountain region, on page 2 of the March 30 letter I listed four projects occurring in or around the Slate Mountain Roadless Area which must be included in the required cumulative effects analysis for a first entry into a roadless area. After rechecking the Sequoia National Forest Project Planning Schedule for 1/1/92 - 3/31/92, it is clear that other projects need to be added to that list, either because they directly affect the Slate Mountain area or because they will affect the ability to maintain viable populations of native vertebrate species within the next decade. They are as follows:

- Black Mountain 2 Timber Sale (Coffee Compartment)
- McIntyre Heli & Mahogany Timber Sales (Nelson Compartment)
- Bench Timber Sale (Peppermint Compartment)
- Tie Helicopter Timber Sale (Pyles Compartment)
- Crest Timber Sale (Wishon Compartment)
- Clover Timber Sale & Multi-Resource Projects (Bear & Speas Compartments)
- Mule Timber Sale (Crawford Compartment)
- Counter & Alder Timber Sales (Table & Nobe Compartments)
- Holey Dome Salvage Sale

The legal descriptions for project locations, scheduled dates, and sizes of these projects are shown on the project planning schedule pages which are enclosed. The Ranger 13% timber sale, the Needles 2 timber sale, and the planned Peppermint Mountain Resort also need to be included in the assessment of impacts.

Additional Comments

On pages 73-74 and 130-138 of the Mediated Settlement Agreement, Sequoia National Forest committed itself to a series of specific inventories and cumulative effects analyses that were to be

included in this EIS. The DEIS as it currently exists fails to satisfy many of these requirements. Additional commitments to "evaluate habitats within the project area in the context of the distribution of the species within the Forest" (Mediated Settlement Agreement, page 56) have not yet been met for furbearers. Nor is there any indication in the DEIS that the project area (including the entire roadless area) has been surveyed for goshawk nests, as required by the Mediated Settlement Agreement on page 59.

Although Tulare County Audubon Society is not a signatory party to the Mediated Settlement Agreement, we point out these obligations to reinforce the Forest Service's awareness of them, and to remind the agency that it is legally vulnerable if the settlement provisions are not faithfully upheld.

In addition to addressing cumulative effects of the next decade's projects within and around the roadless area, the promised inventories of wildlife habitats and species' populations must be performed in a scientifically valid manner for the full Slate Mountain Roadless Area. The baseline data that would be obtained would prove invaluable in fulfilling the Forest's legal mandates to monitor the effects of its management activities not only here, but elsewhere along the Great Western Divide as well. This opportunity to study near-naturally occurring population densities, and to use that information as a basis for evaluating responses to land-altering activities, should not be foregone if Sequoia National Forest is to be known as an agency of professional and scientific integrity. Surveys conducted to date and reported in the DEIS, including for furbearers and spotted owls, do not cover the entire analysis area and, in the case of the owl surveys, do not conform to Regional protocols because coverage was incomplete (DEIS Appendix B, section B).

To try to bring all these thoughts together, Tulare County Audubon's position is that the DEIS is correct in concluding that Alternative 1 ("no action") will "benefit those species associated with mature, late stage" forests (DEIS page 4-8), but that the magnitude of the benefits has been greatly undervalued in the impact statement. In and of itself, the ecological value of leaving the Slate Mountain region in its present condition is enormous. But taking into account the extensive habitat alterations caused by intensive logging in adjacent portions of the Forest, Slate Mountain's ecological values overwhelm its value for timber yield.

We contend that the DEIS's two action alternatives would have an adverse effect on the Red Hill giant sequoia grove. Helicopter landing #3 is to be constructed adjacent to, and uphill from, the Red Hill Grove (Maps 2-1 and 2-2, DEIS pages 2-3 and 2-6, respectively; please compare with the Sierran Biodiversity Project map attached to TCAS's dated March 30) and can be reasonably expected to alter the surface and subsurface water flows affecting the grove.

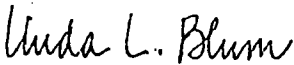
In the DEIS's sections on air quality and timber/vegetation, one very significant factor affecting the health of the forest in the Tule River area is omitted. Ozone, acid smog, and other components of air pollution in the San Joaquin Valley are having a significant adverse effect on pine species, causing needle yellowing and drop, and adding stress which makes the trees even more susceptible to insect and drought damage. Any ground-disturbing activity, including the felling of trees that are later yarded by helicopter, adds stress to surrounding trees. We are aware that the U.S. Forest Service is participating with the National Park Service and other scientists in studies of the effects of air pollutants on forest trees in the Sierra Nevada. We request that the FEIS contain a discussion of the state of current knowledge and an analysis of the potential cumulative effects to the remaining forest trees. From the air, a "bathtub ring" of dead trees can now be seen across the Tule River drainages, which corresponds to the upper level to which the "tule smog" rises out of the Valley each day. We suspect that the large amount of salvage logging which has occurred in the Middle Fork of the Tule River in recent years has compounded the multitude of stresses to living trees, and has set up a vicious cycle of ongoing mortality there. We do not believe it is in the forest's best interest to repeat the mistake in the Red Hill area.

The DEIS concludes on page 3-16 that most of the planning area's soils are capable and suitable, but does not provide the "reasoned explanation" necessary to support the conclusion. The Sierran Biodiversity Project map attached to our March 30 letter includes a data layer from the Soil Conservation Service/U.S. Forest Service Order 3 Soil Resource Inventory; according to the inventory, all soils within the Red Hill Planning Area are either poorly suited or incapable of commercial timber production. In the FEIS, please provide the data and explanation to support the classification of soils as capable and suitable.

We submit that at least one very significant irreversible and irretrievable commitment of resources has been omitted from the list on DEIS page 4-24: that the Red Hill timber sale's logging of trees from steep and rocky areas poorly suited or incapable of commercial timber production represents a loss of forest for the rest of our lifetimes, and perhaps for many generations.

We apologize for being unable to provide the enclosed documents and the additional information contained in this letter in the March 30 comment letter. We request that the information submitted here be included in the remainder of the NEPA process for this project. Three draft environmental impact statements for major projects were released by Sequoia National Forest for public review and comments last month, and we have made a genuine, good-faith effort to respond fully and with specific information to each of them, because we are convinced that the NEPA process can work to assure better land management decisions. We also believe that better decisions will provide greater benefits to the public and better agency stewardship over the lands and resources which are held in the public trust.

Respectfully submitted,



Linda L. Blum
P.O. Box 1749
Quincy, CA 95971
Telephone (916) 283-1007

cc: Ms. Sandra Key, Forest Supervisor
Frank Lewis, TCAS

Katie Linda Blum sent this to
George Miller's office in March '92.

FAX TO: Mr. Jack Kapuscinski
Interior & Insular Affairs Committee and Office of Indian Affairs
U.S. House of Representatives
Longworth Office Building, Room 1522
Washington, D.C. 20515-6201

FAX No.: (202) 226-0522

FROM: Linda L. Blum
P.O. Box 1749
Quincy, CA 95971
(916) 283-1007

FAX No.: (916) 283- 4626 (local office supply store; add "ATTN: L. Blum")

COPY

March 10, 1992

Dear Mr. Kapuscinski:

The following 14 pages make up a set of comments, plus exhibits, to be submitted during the public comment period on the Draft EIS for the Casa-Guard timber sale on Sequoia National Forest, Tulare County, California. I believe that the first 5 or 6 pages will provide you with a taste of the substantive issues present in this timber sale and many others on Sequoia National Forest; if this document will help you provide examples of the land management problems present on our national forests, please feel free to distribute it.

Regarding the issues of reforestation, inventory, and soil capability determinations, I will see what I put together for you in the next week. Carla Cloer and Charlene Little have probably told you many of the horror stories already. One point I'd make right now, though, is that the only report of plantation growth measurements we've ever seen for Sequoia NF was done in 1987, and showed that on average the observed growth was less than 66% of the expected (FORPLAN) growth rate. The standard deviations of measurements of tree height and bole diameter, if they had been calculated, would have been very small values. What this means to me is that the growth rates are uniformly significantly smaller than hoped for. I'll be trying to locate the documentation for this in the next few days.

I thank you very much for your interest and efforts on behalf of our public lands. I will be available at the phone number shown above Tuesday afternoon, Wednesday, and Friday of next week if you have any questions.

Sincerely,

Linda Blum

Linda Blum

COPY

**Comments on Casa-Guard Timber Sale DEIS
Cannell Meadow Ranger District
Sequoia National Forest
1992**

DESCRIPTION OF THE AFFECTED ENVIRONMENT

From the information contained throughout the Draft Environmental Impact Statement ("DEIS"), the environmental quality of the Casa-Guard timber sale area is severely affected already. The overall impression conveyed by the DEIS is of a heavily cutover forest that is no longer capable of supporting the full complement of wildlife species that are native to the project area. The forest is interspersed with meadows that are overgrazed, severely damaged, and which "exhibit a static to declining trend" (DEIS page 3-9). The meadows themselves are threatened because water tables apparently have been and are falling in every watershed.

Important fisheries exist in the project area's streams, but the fish populations are everywhere described as being limited by low summer water flows, warm water temperatures in summer, and sedimentation which is degrading and destroying fish habitat. Roads, trails, livestock grazing, and ground-disturbing logging activities are all identified as producing direct and/or indirect adverse impacts to riparian and aquatic ecosystems. As the DEIS states on page 3-5, "The potential effect of timber harvesting on fisheries relates to the loss of vegetation and ground cover. The loss of vegetation and ground cover can affect streamflow, stream water temperature, and the erosion/sedimentation rates." The cause-and-effect relationships between timber production and degradation of the quality of the aquatic environment desperately need to be addressed and fairly and fully analyzed before additional damage occurs.

Timber harvesting activities have occurred in the project area since 1961 (DEIS page 3-31). For all of those 31 years, the Forest Service was supposed to have been enforcing the provisions of the Multiple-Use Sustained-Yield Act of 1960. Yet the DEIS admits that up to 50% of the entire timber inventory has now been "removed" and that "all of the tractor operable land has been partially harvested at least once" (Ibid.). Has the level of timber extraction to date been consistent with sustained-yield, multiple-use requirements? The answer appears to be a resounding "no," unless growing conditions permit a 60-year timber rotation -- which is impossible in these soil and climatic conditions -- and unless other resource values and uses have been unimpaired.

The DEIS is inadequate in its levels and amounts of detail to provide an accurate description of the affected environment. Therefore we referred to data contained in the earlier Environmental Assessment for the 1989 Casa-Guard decision to supplement the information in the current DEIS. Specifically we consulted the "Casa-Guard Timber Sale Stratum Summary" at page 1G of Appendix G to the 1989 EA (attached). The paragraphs below describe what we found and the conclusions we feel are justified at this point in our review of the health of the forest and aquatic ecosystems within the project area.

Forest Ecosystem Conditions

The mixed conifer forest type occurs on 3,340 acres of the 13,944-acre area analyzed in 1989. The status of this forest type is that it has been logged or lost to fire to such an extent that at most only 4.5% of the original forest remains (150 acres M4G out of 3,340 acres all "M" strata). Out of all stands remaining that are dominated by large sawtimber-sized or larger trees, 93.4% of the project area's forest has been logged heavily enough that the forest canopy has been reduced below 40% closure -- in other words, it is no longer a closed canopy forest. While the 2,185 acres of M4P stands may contain "old growth" trees, they no longer contain the other structural attributes necessary to qualify as "old-growth habitat." Only 75 acres of medium-sized sawtimber, closed canopy forest remain (M3G stands); if they are added to the M4G acreage, then 6.7% of the original closed canopy forest is left.

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CASA-GUARD TIMBER SALE
STRATUM SUMMARY

STRATUM	TOTAL ACRES	AVE. STRATUM VOL./ACRE MBF	REGULATION CLASS						TOTAL VOLUME MBF
			1	2	3	4	5	6	
			ACRES	VOL. MBF	ACRES	VOL. MBF	ACRES	VOL. MBF	
CAPABLE AND SUITABLE FOREST LAND									
PL*	176	0	108	0	68	0	0	0	0
PLU	476	0	476	0	0	0	0	0	0
PLS	241	0	241	0	0	0	0	0	0
P2X	145	0	145	0	0	0	0	0	0
P3X	121	10.0	63	630	0	0	58	580	1,210
P4X	1,795	15.0	1,795	26,925	0	0	0	0	26,925
M2X	70	0	70	0	0	0	0	0	0
M3P	860	18.8	465	8,742	115	2,162	280	5,264	16,168
M3G	75	23.0	37	851	0	0	38	874	1,725
M4P	2,185	20.0	512	10,240	1,501	30,020	172	3,440	43,700
M4G	150	26.0	150	3,900	0	0	0	0	3,900
R3P	643	19.0	585	11,115	0	0	58	1,102	12,217
R3G	519	47.0	519	24,393	0	0	0	0	24,393
R4P	2,014	21.0	1,579	33,159	210	4,410	225	4,725	42,294
R4G	277	26.0	258	6,708	0	0	19	494	7,202
LPP	1,431	13.0	607	7,891	84	1,092	740	9,620	18,603
Sub-Total	11,178		7,610	134,554	1,978	37,684	1,590	26,099	198,337

OTHER NOT CAPABLE OR NOT SUITABLE STRATUM

.GX	610
N/C	1,056
Rocky/Steep	1,100
Sub-total	2,766

TOTAL	13,944	7,610	134,554	1,978	37,684	1,590	26,099	198,337
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The red fir forest type occurs on 3,453 of the 13,944 acres examined in 1989. This forest type has not been logged quite as heavily as the mixed conifer type: 277 acres (14%) of all large timber class red fir forest still has a canopy closure greater than 39%. The Jeffrey pine forest type covers 2,061 acres and 87% of it is in the large sawtimber classification, but canopy closure information is not available in either the DEIS or the earlier EA.

Is 4.5% or even 6.7% enough to maintain a healthy mixed conifer forest ecosystem? Or, if the red fir and mixed conifer forest types are combined, is 14% (961 acres) of continuous canopy forest sufficient to support a functioning ecosystem in a 6,793-acre forest environment? The 1988 Sequoia National Forest Land and Resource Management Plan ("Forest Plan" or "Plan") set a standard requiring that 5% of each seral stage of each forest type be present at all times. This number repeats the Regional Guide direction, but there is no documented scientific basis for it. Does it meet the underlying objective of maintaining biological diversity? U.S. Forest Service procedures for complying with the National Forest Management Act of 1976 contain mechanisms for evaluating management's achievement of overall agency goals; they are embodied in the Forest monitoring requirements and are designed to provide feedback on the effects of various land management activities.

To measure the Forest's accomplishment of wildlife goals, Management Indicator Species (MIS) are supposed to act as barometers for wildlife communities. The following are the Forest Plan's MIS for forest ecosystems and information from the DEIS on their status in the analysis area:

Mule deer - Because of its association with early successional stages in feeding requirements, the mule deer is the indicator. The DEIS states that both the Kern and Monache deer herds inhabit the Casa-Guard area for migration, summer range, and fawning, but information critical to making an informed decision about the effects of the proposed project is missing.

The following data are needed to make a determination of herd conditions and trends:

- What are the population status and trends for each herd?
- Are the herds increasing or decreasing in population?
- Is there excessive mortality?
- What factors are perceived to limit deer numbers?
- What is the availability of thermal cover within the project area, to provide relief from summer heat and prevent heat stress?
- How important to herd survival is the Fish Creek migration corridor?

The DEIS appears to grossly undercount the amount of deer foraging habitat available; all of the timber size class "4" stands, particularly the "4P" stands, are probably used in foraging, particularly in hot weather. The "4P" stands, however, probably do not contain the structural and microclimate characteristics necessary to be usable for thermal cover. Due to the extensive logging, only 961 acres of all forest types still has a canopy closure of 40% or greater, per the timber stratum data. Until the EIS addresses the condition and trends of the deer herds, it will be impossible to know whether 961 acres of forest cover is sufficient. All action alternatives in the DEIS propose to log the entirety of the Fish Creek migration corridor.

Pileated woodpecker - This species was identified in the Forest Plan to indicate whether the standards and guidelines for snags and downed large woody material are adequate and/or are being implemented properly. No information on this MIS is contained in the DEIS.

Spotted owl - The spotted owl is associated with late successional wildlife communities. Almost all of the project area no longer contains any suitable habitat for this MIS. The DEIS states that the project area itself "contains only 144 acres of foraging habitat and 147 acres of nesting habitat for a total of 291 acres. It contains pockets of mature trees, but the stands are usually open and poorly stocked." (DEIS page 3-16) Although a single owl was located in the project area in 1989 and a daylight follow-up visit identified a roosting site, none of the project alternatives provide for roostsite protection. Apparently no spotted owls were found in the project area in 1991. What does it indicate about forest management effectiveness when the management indicators can no longer survive in the managed area? We believe it means that the Forest Service's management activities are not meeting their own goals and objectives.

Goshawk - The northern goshawk is another species representing animals associated with mature and overmature forest stands. Survey data imply that one individual or a pair of goshawks live in the vicinity of the Casa-Guard project, but apparently no nests or birds have been observed in the project area itself. The 1989 Biological Evaluation for this sale stated that "Goshawks are believed to be limited by nest site and prey availability." As with the spotted owl, it appears that the Casa-Guard project area has already been overlogged to such an extent that the indicator species cannot survive there.

Species considered "sensitive" to management activities also once occurred in the project area. All of them now require special conservation measures to support their life requirements. The Pacific fisher, a furbearing mammal, prefers mixed conifer old-growth habitat. One was recorded near Osa Meadow in 1957, and again in 1991, according to the DEIS. Fisher are known to be highly territorial, so much so that experts would assume a sighting denotes a fisher in its home range. The DEIS, however, concludes that the current fisher observations are of transient animals. The pine marten is a furbearer that tends to occupy both mixed conifer and red fir forests, as long as they are dense, multi-storied stands with abundant large downed woody material. Only one pine marten sighting is known to have occurred within recent memory in the Casa-Guard area. The Kern Plateau Slender Salamander was found thinly but widely distributed throughout the Kern Plateau in 1979, including at Osa Meadow. This species is dependent on moist areas, such as seeps and springs. Recent surveys in the project area have failed to find any. The current condition of sale area seeps and springs is not discussed in terms of habitat availability and suitability.

Riparian and Aquatic Ecosystem Conditions

One of the central environmental issues of the Casa-Guard timber sale project is its potential to irretrievably harm the fishery resources of this portion of the Kern Plateau. Fish Creek, a major tributary of the South Fork of the Kern River, is habitat for the South Fork golden trout, while Osa and Beach Creeks and its tributaries are thought to contain pure strains of Kern River rainbow trout.

The Forest Plan identifies rainbow trout as the management indicator for riparian and aquatic ecosystems. The Fish Creek population exhibits a skewed age class distribution and early mortality which is attributed to increased sediment flows. The status of the Osa and Beach Creek fish populations are not characterized in the DEIS, but there is visible habitat destruction in the form of pools filling with sand and peak flows dislodging debris jams. Stretches of Beach Creek went dry last summer, isolating fish in pools and flowing sections.

Every resource which has a bearing on the health of fisheries in the Fish Creek and Rattlesnake Creek watersheds -- the low summer flows (and we note that one fish-containing stream dried up last year but had fish surviving in pools), warm summer temperatures, sediment flows from trails, logging roads, and meadow headcuts -- seems to have been impacted by recent and ongoing uses to such an extent that the viability of the fisheries is in doubt.

Four of the five sale area tributaries to Fish Creek have intermittent flows now. The DEIS acknowledges that past logging, roads, trails, and livestock grazing have been and still are contributing above-normal sediment loads to the main stem of Fish Creek (DEIS page 3-5). Sufficient additional sedimentation is caused by human activities that fishery conditions are actively degrading: pools are filling up with sediment, both reducing and harming habitats necessary for fish survival against predators and, most importantly, against warm water temperatures in summer. More than half the land areas of the Dead Dog, Telephone Meadow, Lower Telephone Meadow, and Blackrock Creeks are slated for logging and other ground-disturbing activities under every action alternative in this DEIS.

As noted above, the area's wet meadow ecosystems are degrading because of lowering water tables. Although the causes of this undesirable situation are unconfirmed and subject to debate among experts, a clear effect is the meadows are being invaded by lodgepole pine, a species that can tolerate relatively wetter soils than most pines. Once established, lodgepole is thought to exacerbate the groundwater decline by drying and encroaching farther into the meadows.

The DEIS states that virtually all annual precipitation in this area occurs in the form of snow. Extensive field research has been published on the effects of logging intensities on the rate and timing of snowmelt. Given the low water-holding capacities of most of the area's soils, the low stream flows and warm water temperatures in summer, and the extensive logging history of the area, it is natural to wonder whether past management activities have altered the hydrological regime of the area. The fact that peak runoff flows are now large enough to dislodge the natural and beneficial woody debris structures of creeks, together with the observed lowering of the water tables, suggests that such a change has, in fact, been taking place in the project area.

There is a second measure of riparian and aquatic ecosystem health besides the management indicator species: the Cumulative Watershed Effects (CWE) analysis. The methodology used in the CWE analysis has not been clearly explained in the DEIS. From the information presented, it is impossible to understand the extremely low "Past ERA" values (also referred to as "ERAs Used" here) reported for 1991 in Table 3.8 on DEIS page 3-29. The 1991 values are compared to 1989 and 1990 values, which were obtained from the 1989 Casa-Guard EA and from the documentation of "interim timber sale" CWE reviews undertaken for the Mediated Settlement Agreement in 1990, in the table below.

The subwatersheds with double-asterisks (**) in the table are those that were concluded to be approaching the point of irreversible negative impacts by watershed experts in 1990. They are displayed graphically by a gray pattern screen overlaid on a map of cutting units for Alternative 4 on the following page. The only project alternative in the DEIS which defers ground-disturbing activities in these drainages is the "no action" alternative.

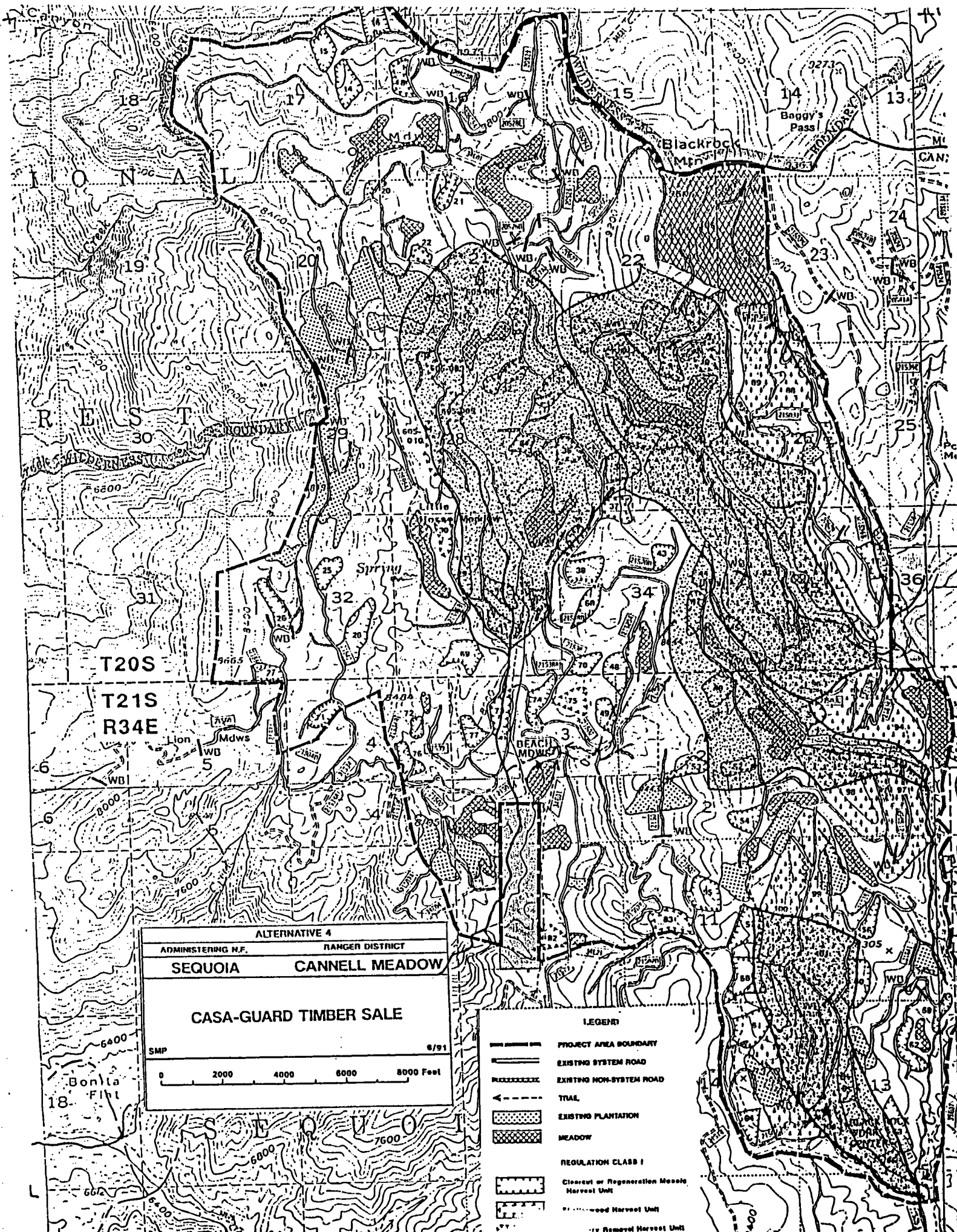
Subwatershed	Acres	1989 TOC (ERAs)	1990 TOC (ERAs)	DEIS TOC (ERAs)	1989 ERAs Used	1990 ERAs Used	DEIS ERAs Used
Upper Osa	2,477	248	248	99.1	112	128	49.1
Lion	2,202	231	231	88.1	93	86	16.4
Kissack Cabin	443	42	42	22.2	26	31	3.9
Littlehorse	797	80	80	31.9	24	23	3.5
Upper Beach	1,308	137	137	52.3	62	**87	8.1
Cannelosa	724	72	72	36.2	43	63	5.7
East Beach	405	45	45	20.3	23	34	4.3
Lower Beach	561	56	56	28.1	22	16	5.0
Beach Loop	1,445	145	145	72.3	98	75	10.1
Blackrock	491	59	59	24.6	32	**51	4.0
Lower Telephone Meadow	573	69	69	28.7	34	51	3.2
Telephone Meadow	530	64	64	26.5	21	**55	3.0
Dead Dog	1,307	144	144	65.4	71	**130	8.0
Upper Fish	1,235	124	124	49.4	72	73	15.1

CONSISTENCY OF PROJECT WITH FOREST STANDARDS AND GUIDELINES

Whether the Casa-Guard timber sale can be carried out without violating Plan Standards and Guidelines is the most serious question raised by the DEIS. The Forest Plan contains Standards and Guidelines that impose an affirmative obligation on the Sequoia National Forest to improve and enhance the conditions of Forest fisheries. A project which degrades fish habitat conditions even further than they have been cannot also be improving the fisheries, and must therefore violate the Standards and Guidelines. Projects which implement a Forest Plan must comply with Standards and Guidelines.

We specifically request that the FEIS explicitly and fairly evaluate how well each alternative meets the following Forest Plan Standards and Guidelines:

"Maintain habitat to insure all native fish, wildlife, and plant species will have adequate population levels and distribution to provide for their continued existence throughout their current range." [Forest Plan, page 4-27]



ALTERNATIVE 4	
ADMINISTERING N.F.	RANGER DISTRICT
SEQUOIA	CANNEL MEADOW
CASA-GUARD TIMBER SALE	
SMP	8/91
0 2000 4000 6000 8000 Feet	

- LEGEND
- PROJECT AREA BOUNDARY
 - EXISTING SYSTEM ROAD
 - EXISTING NON-SYSTEM ROAD
 - TRAIL
 - EXISTING PLANTATION
 - MEADOW
 - REGULATION CLASS I
 - Clearcut or Regeneration Mosaic Harvest Unit
 - Partial Wood Harvest Unit
 - General Harvest Unit

"Protect fishery streams by specifying minimum flows necessary to maintain fisheries habitat and allowing removal of no more than 50 percent of the flow at any time." [Forest Plan, page 4-28]

"Restore and enhance fisheries habitat through implementation of 'Rise to the Future' (an action plan for the National Forest fisheries program)." [Ibid.]

COMPLIANCE WITH SETTLEMENT OBLIGATIONS

As discussed in the DEIS, Forest Alliance and Tulare County Audubon Society filed a lawsuit (Case No. CV-F-90-564) in U.S. District Court against the Sequoia National Forest's 1989 Decision Notice, Finding of No Significant Impact, and Environmental Assessment for the Casa-Guard Timber Sale. The settlement terms described on page 1-4 of the DEIS are consistent with our understanding of the agreement, but the DEIS does not fulfill the Forest Service's commitment to conduct and disclose cumulative effects analyses at the geographic scope necessary to determine whether any of the action alternatives can be supported by reasonable explanations of the facts.

The Sequoia National Forest knows from previous appeals as well as the litigation that some members of the public are deeply concerned about the larger watershed and landscape effects of this project, especially when considered cumulatively with other timber sales (Pow, Dark, and Paloma sales completed within the last three years in the Fish Creek and Rattlesnake drainages; Jack, Fish, Danner, and Burnt timber sales being planned for the near future in the same drainages -- please see "Cannell Meadow Ranger District Actual and Proposed Timber Sales, 1989-1992" and "Cannell Meadow Ranger District Timber Sale Planning Map, FY 92-96," attached)

Where in this DEIS are the analyses and conclusions regarding off-site, cumulative effects of the Casa-Guard project on fisheries? On recreational uses of fisheries and trails? On habitat availability and connectivity for old-growth-dependent and mature forest species?

If two major tributaries to Rattlesnake Creek (Lion and Beach), both of which are acknowledged to influence the condition of fish habitat downstream, suffer from low summer water flows and warm summer water temperatures, what is the status of the fishery in the main stem of Rattlesnake Creek itself? Have its cold water sources, such as seeps and springs, been impaired? If so, where has this occurred? Did Lion Creek formerly support a fish population? If so, what habitat restoration actions would be necessary to return the stream to a condition capable of supporting a fishery?

What will the cumulative effects be on the main stem of Fish Creek from this project when added to the sediment flows from the Pow, Fish, Jack, and Burnt sales? In light of the uncertainties that seem to exist, a worst-case scenario needs to be developed that analyzes impacts downstream, including meadows and stringer meadows, of what watershed experts refer to as "sediment slugs" moving down Fish Creek. What could happen to the Rodeo Flat area? Will fish be able to survive long enough to breed at all? Please address these questions in the FEIS.

The DEIS also does not contain a discussion of cumulative landscape-scale effects to old-growth and mature forest species of terrestrial wildlife, even though there is an implication that such analyses have been performed (DEIS page 3-29). We believe that omitting such discussions violates the lawsuit settlement.

The furbearer habitat corridor that would be established under Alternative 3 is not described sufficiently for an informed reader to determine whether it will be adequate in terms of location, width, habitat content, or relationship to the rest of the furbearer habitat network.

Please answer the following questions in the FEIS:

- What timber types are present and how are they distributed throughout the corridor?
(A map of this information would be helpful.)

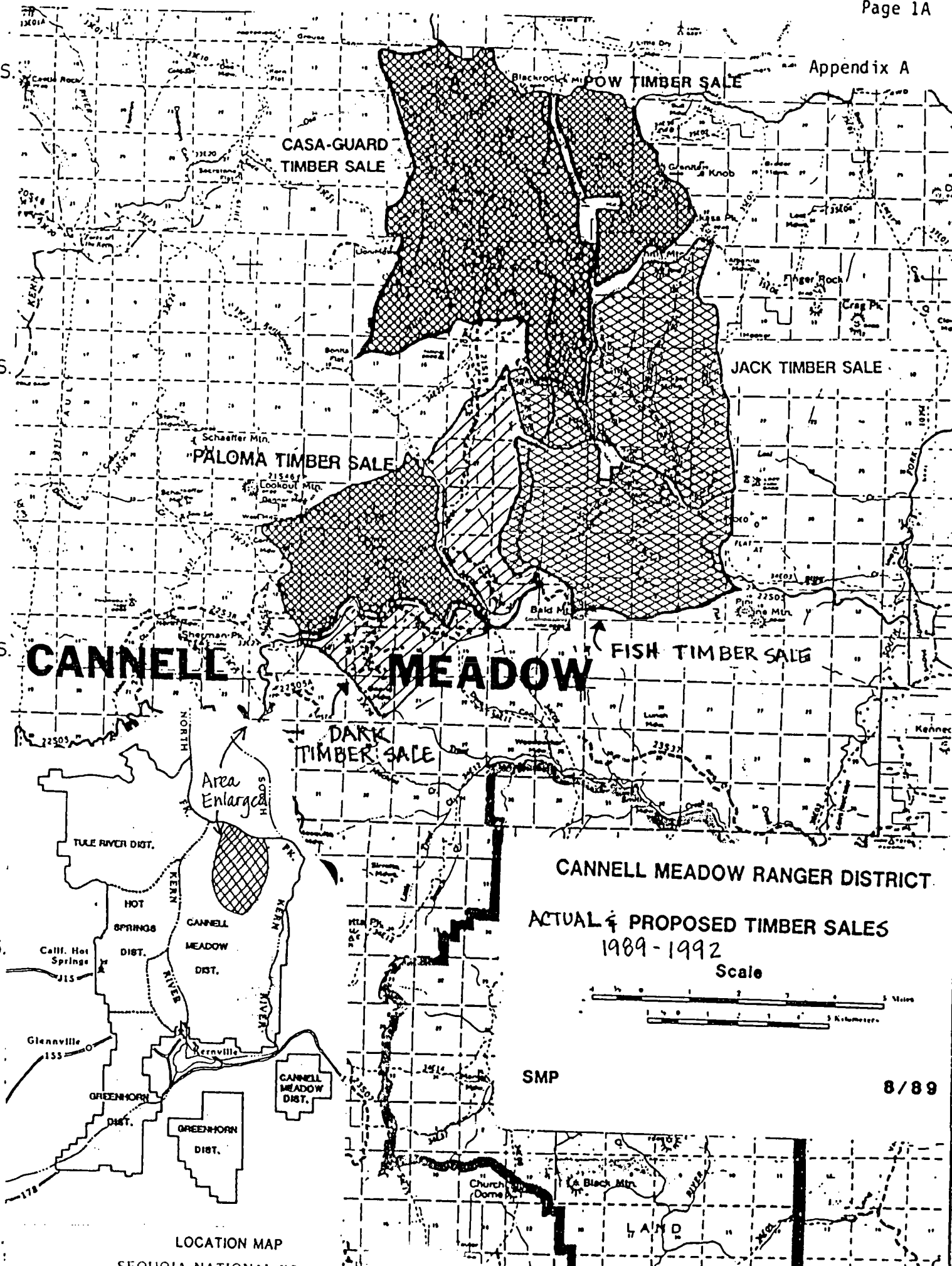
T. 20 S.

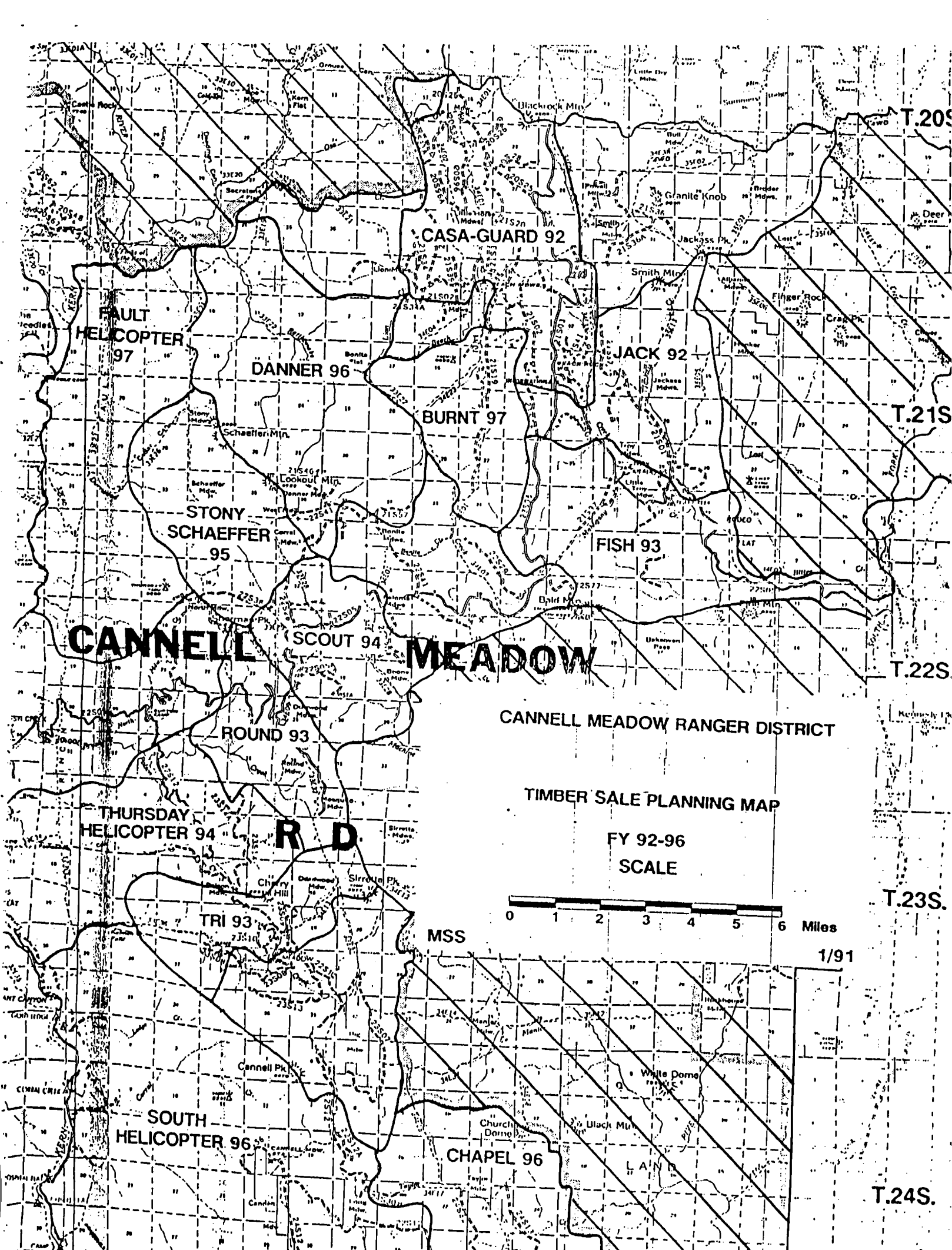
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T. 22 S.

T. 23 S.

T. 24 S.





- How does this corridor and the surrounding network components comply with current Regional direction concerning furbearer habitat conservation?
- How well is this corridor expected to function when several critical habitat characteristics are known to be unsuitable for use by furbearer species?
- In particular, the density of roads in the saddle between the Upper Beach and Osa Creek watersheds, and at the southern end of the corridor, appears to be very high. How many road miles per square mile of corridor are there?
- What is the vertical diversity of the forest through the corridor?
- Does the corridor meet the Regional directions for travel corridor canopy closure? If so, how many acres (approximately) fall within the high, moderate, and low capability criteria for travel corridors?
- How well will the corridor facilitate fisher movements when there is a half-mile-long gap in sections 21 and 28 of R34E, T20S, comprised of plantations, roads, and proposed additional logging?
- How will Alternatives 2, 4, and 5 comply with Regional direction for furbearers?

Scientific information on habitat characteristics for Pacific fisher suggest that this proposed corridor will not function adequately to meet the management objective of the Region, which is "to maintain and enhance [furbearer] populations." Adequate habitat spacing distances are apparently undetermined as yet for low-capability areas, but at least one expert emphasizes that "the greater the length of the corridor the wider it should be, and the percent of canopy closure should increase as distance increases." (Region 5 Furbearer Management - Interim Guidelines for Identification of Suitable Furbearer Habitat, April 25, 1990) The same expert has stated that anything greater than 8 miles apart in habitat spacing should be considered unavailable. (Ibid.) We note that the corridor length within the Casa-Guard sale area is approximately six miles, and that it terminates at its southern end in 7,586-acre Bonita Fire area which destroyed a substantial amount of forest in 1977. That area is now described as being covered by snags and brush fields (DEIS page 3-6).

Forest stands containing old-growth habitat characteristics have been mapped from September 1990 Landsat imagery as part of the Sierran Biodiversity Project being conducted by Steve and Eric Beckwith of North San Juan, California. Considerable ground-truthing has been done to validate the accuracy of their mapping procedures. Their maps show only two stands of old-growth habitat remaining within the Casa-Guard sale area; one of these appears to be unit 36, which is scheduled to be logged under an even-aged prescription in all action alternatives except Alternative 5. In the FEIS please provide the data, the analysis of that data, and a reasoned explanation of how conclusions are reached concerning old-growth habitat availability and connectivity, and how spotted owls, goshawks, and other species dependent on old-growth and closed-canopy forests are expected to be affected across the entire non-wilderness portion of the northern Kern Plateau.

Until all of the above issues are addressed in detail, the Casa-Guard EIS will not be in compliance with the terms and conditions set forth in the settlement of the previous lawsuit.

INTERNAL CONSISTENCY OF THE DEIS

The descriptions of alternatives at various places within the DEIS contradict each other. E.g., the Summary section at the front of the DEIS characterizes the alternatives on pages S-4 and S-5 as follows:

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Sale Volume	0 MMBF	23.0 MMBF	27.4 MMBF	25.9 MMBF	13.8 MMBF
Acres Logged	0	1,354	1,507	1,428	852
New Road Miles	0	0.3	0.3	0.3	0.3
Road Reconstruction Miles		5.6	5.3	5.7	4.4

But an entirely different set of numbers for road reconstruction are given on page S-12 and for all aspects of the project alternatives on page 2-14:

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Sale Volume	0 MMBF	18.8 MMBF	21.0 MMBF	23.4 MMBF	12.7 MMBF
Acres Logged	0	1,085	1,174	1,319	806
New Road Miles	0	0.1	0.1	0.1	0.1
Road Reconstruction Miles		5.2	4.7	5.3	4.4

Which set of figures is correct? Do the maps of timber sale unit locations and prescriptions reflect the larger or smaller set of alternatives? How can members of the public meaningfully comment on a set of alternatives when the DEIS contradicts itself in basic project descriptions?

We wonder why outdated Riparian and Wetlands Standards and Guidelines (4/89) are invoked for BMP 2-13 (DEIS Appendix page D-8).

We also wonder why the Forest Hydrologist submitted the Cottonwood and Golf timber sales' "Best Management Practice Implementation for Water Quality Protection" list for the Casa-Guard project, as shown in DEIS Appendix D. We wonder whether this was a simple substitution error of one list for another (the initials "CG" could apply to both projects, after all) or whether the slipup lay in failing to change project names within the text. We sincerely hope it was the former type of error, since the geological and topographical features of Breckenridge Mountain (the site of the Golf and Cottonwood sales) are very different from the Kern Plateau, and therefore management practices would obviously need to be tailored to the specific sites. Many members of the public have been skeptical for some time about the Forest Service's claim that BMPs were prescribed after site-specific inspection and analysis; the repeated references to the Cottonwood and Golf project on pages Appendix D-9 through D-11 tend to confirm suspicions that the applications of BMPs are boilerplate exercises not taken seriously by the Forest Service. We suggest that the Forest hydrologist and other Forest staff proofread their boilerplates more thoroughly in the future.

There are also unexplained differences in projected harvest volumes for twelve cutting units, depending on alternative but not upon the prescription (DEIS Appendix A). The same number of acres are slated to be logged the same way, but the estimated timber volume yields are different. Please explain these differences in the FEIS for the following units:

Stand No.	Rx	Alt. 2	Alt. 3	Alt. 4	Alt. 5
11	CC	214	268	268	268
21	SW	219	274	274	274
25	RM	243	221	243	243
40	RM	150	n/a	188	n/a
41	RM	180	225	225	n/a
46	RM	347	434	434	n/a
52	RM	247	309	309	n/a
55	RM	364	455	455	n/a
59	RM	133	166	166	166
67	RM	119	149	149	n/a
74	CC	224	280	280	280
83	SW	155	194	194	194

Inconsistencies abound in the discussions and conclusions reached concerning the health of area streams:

- Native fish populations in Fish Creek are said to be in equilibrium with the current habitat conditions, even though "few fish apparently live long enough to spawn more than one or two years" (DEIS page 3-5); such a skewed age class structure does not sound like a healthy or desirable "equilibrium."

- Fish Creek is described on DEIS page 3-4 as consisting of three channel types, none of whose locations are identified; but by process of elimination, the "A" type designation appears to apply to the non-meadow portions of the streamreach. The "A" type sections are said to be evidencing very little impact from any management activity, with abundant riparian vegetation and excellent streambank stability (DEIS pages 3-4 and 3-5). At the same time, though, Fish Creek is listed as an entry on the Watershed Improvement Needs Inventory (WINI) because

"[b]etween Smith Meadow and Blackrock Station [approximately 3 stream miles] trail 34E33 crosses the creek about 15 times. These crossings are contributing deposits of silt and causing unstable banks. This is also causing damage to fisheries habitat by creating point bar enlargement, lateral scour, and mass wasting downstream" (DEIS page 3-26 through 3-27),

and filling of pools by sediment generated by roads and management activities (i.e., logging) is continuing to reduce fish habitat availability (DEIS page 3-5).

Please discuss in the FEIS what the various channel types (A, B and C) are and their significance in terms of analyzing environmental impacts. Overall, is Fish Creek showing adverse effects from past and current "management activities"? If the B-type channels are predominant (DEIS page 3-4), are the management effects upon fisheries described on page 3-5 of the DEIS being used properly as feedback to the Forest Service management team in the decision-making process? Based upon the magnitude of the action alternatives' project descriptions, we question whether any logging in the Fish Creek drainage is appropriate at this time.

SCOPE OF ALTERNATIVES

No action alternative was formulated to meet the objectives of both the settlement of the lawsuit against the original Casa-Guard project as well as the Mediated Settlement Agreement on the Forest Plan. Alternative 3 is purported to satisfy the litigation settlement by designating a potential furbearer travel corridor, while Alternative 5 is represented as being meant to comply with the Mediated Settlement Agreement. In our opinion neither alternative comes close to satisfying the terms of either agreement. But since the Sequoia National Forest is obligated through contractual agreements to do both, we suggest that an action alternative which fulfills both agreements be developed and analyzed in a supplemental DEIS and released for public review and comment. Of the range of alternatives examined in the DEIS, only the "no action" alternative (Alternative 1) complies with either the lawsuit settlement or the Mediated Settlement Agreement.

ANALYSIS OF ALTERNATIVES

A fair and reasonable analysis of the "no action" alternative was not performed for the DEIS. All the indications from streams and fish and wildlife conditions are that logging and livestock grazing activities have degraded the land so much that logging to the extent proposed by any action alternatives cannot occur without violating Forest Plan standards and guidelines, Regional directions, Forest Service regulations, and Federal laws. Thus, a tradeoff must be made between the Forest Plan's timber production objectives and compliance with legal mandates.

The DEIS, however, considers only the timber objectives -- and the fact that the "no action" alternative would not meet them -- rather than looking at the entire array of Forest Plan goals and objectives. We believe that if all factors were evaluated objectively and fairly, the analysis would show that Forest Plan goals for fish and wildlife, recreation, water quality, and several other resources would be better met by not implementing the Casa-Guard timber sale.

To facilitate comparisons between alternatives in the FEIS, please rate the different alternatives according to their abilities to meet Forest Plan goals and objectives for each major resource group (cultural resources, fisheries, fuels/fire management, livestock grazing, recreation, timber, watershed, wildlife, etc.). A table or chart displaying this information graphically would be helpful. We predict that, with the exception of timber production and short-term socioeconomics, the "no-action" alternative will score higher overall than any other alternative.

If the commercial timber production objective is nevertheless judged to have an importance overriding all other Forest Plan goals and objectives, please provide the reasoning and justification for making that decision in the FEIS.

COMPLIANCE WITH NEPA

NEPA implementing guidelines are being violated by the manner in which the full analyses of project impacts upon various resources are withheld from the public. Since the "working papers" are not published in the DEIS but are said to "contain the full analysis from which each corresponding section of the DEIS is taken" (DEIS page 1-6), should we assume that the working papers are incorporated by reference into the EIS as NEPA documents? If not, then the DEIS is deficient because it does not provide sufficient technical data and reasoned explanations of analyses and conclusions for many aspects of the affected environment, or of reasonable alternatives. If these working papers are considered to be incorporated by reference, then they must be readily available to members of the public; a better solution would be to simply include them in the EIS.

We believe that NEPA is also being violated by the way in which major programmatic and policy changes are being instituted without NEPA review. The Casa-Guard sale will implement Forest-wide decisions concerning CWE methodology and sensitive species habitat allocations which have not been made subject to public review and comment. The establishment of a habitat network for goshawks (e.g., see DEIS page 4-25) and for furbearers (in Alternative 3 only) are "major Federal actions" and "significant actions" within the meaning of NEPA because by dedicating certain lands to management prescriptions for these species, other lands are being "freed" for virtually one use only: commercial timber production. From the information contained in the DEIS, we cannot discern the overall, landscape effects of the furbearer and goshawk networks, but we question the scientific basis and wisdom of the limited portions of the networks that are presented. Similarly, it is obvious that dramatic changes have been made in the CWE methodology used to evaluate watershed conditions. The Forest's CWE methodology was not yet developed and so not explained in the Forest Plan in 1988; these new modifications, whatever they are, are also being unlawfully shielded from expert and public scrutiny.

WATERSHED IMPROVEMENT NEEDS PROJECTS

While restoration and rehabilitation projects are commendable, the lack of funding commitments to carry out the projects is distressing. Since the Fish Creek WINI project described on DEIS pages 3-26 & -27 is obviously necessitated by recreational use, we suggest that the Forest look to recreational budget sources, such as OHV "green sticker" funds, to implement the restoration measures.

We object to the proposal, if that's what it is, to harvest lodgepole in six meadows as identified on page 3-27. All of the meadows involved are described elsewhere in the DEIS as suffering from headcutting and other forms of riparian and wetland degradation. Releasing additional water rapidly to the meadow systems by logging the lodgepole will only exacerbate the watershed problems. We request that at least one alternative be developed which analyzes the impacts of performing the meadow restoration/stabilization first, waiting until the remedial efforts take effect and down the lodgepole, then logging some (but not all). Great grey owls are known to use lodgepole pines in and around meadow edges as hunting perches; the dead and downed wood lying in the meadows serves as habitat for their prey species.

Respectfully submitted,

Linda L. Blum

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Katie McGinty
Al Gore's office

"Sierra in Peril"

Dear Katie,

It was a great pleasure talking to you today. Enclosed is Tom's article - a series of 5 weeks in the Sacramento Bee. Rumor has it the timber industry tried hard to get him & his staff fired, but instead he was awarded a Pulitzer Prize.

I put Knudson's tel number on the article if you need him. Good luck & call us anytime.

Sincerely Jill (DeLaney)

Jim DeLaney
at

MICHAEL B. JACKSON

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MAJESTY AND TRAGEDY:

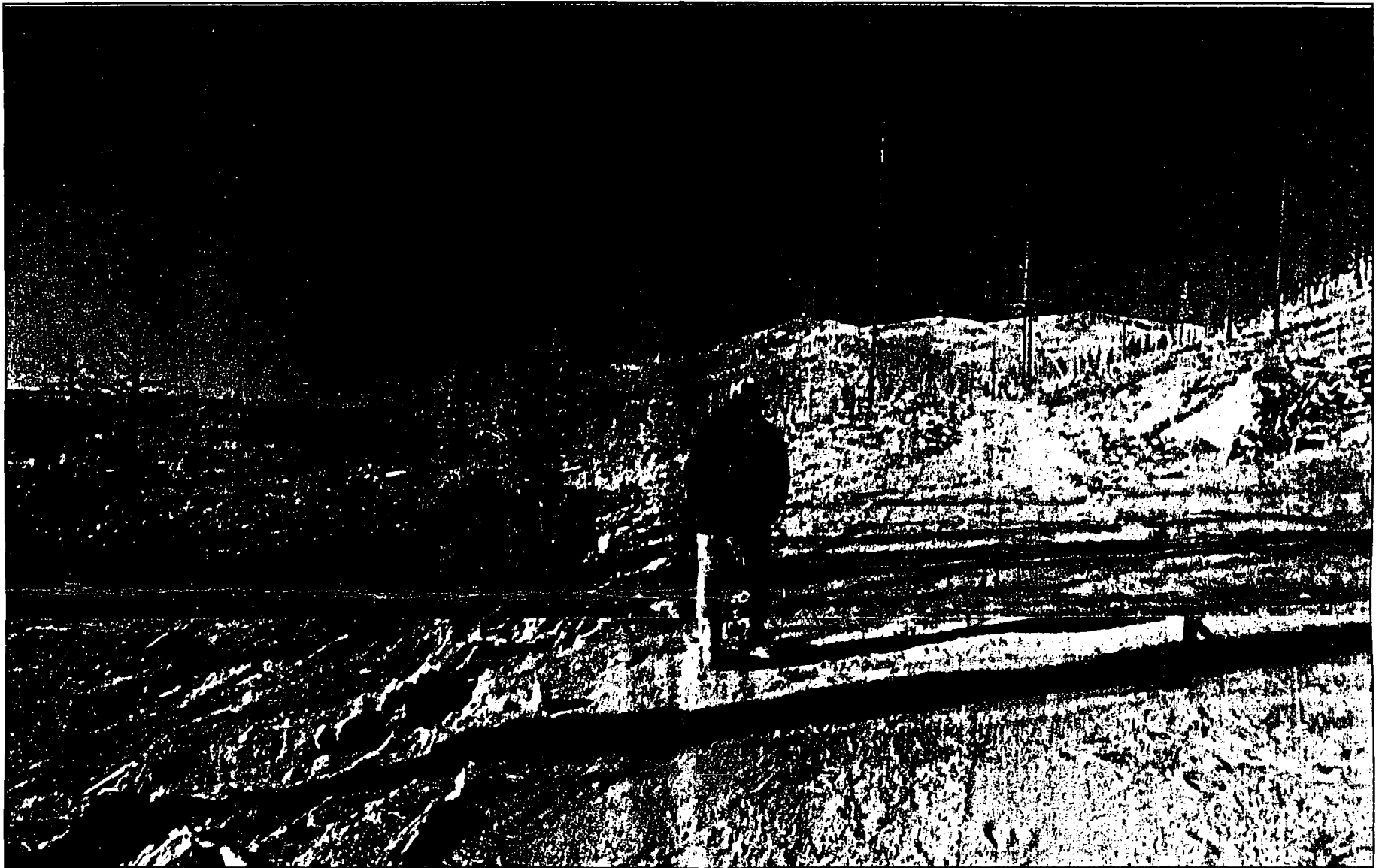
THE SIERRA IN PERIL



Even the summit of the Sierra may not be safe from the ravages of man. Mount Whitney is the sharp-ridged peak in the background.

Bee photos by Jay Mather

'We are wont to whittle away at our giants. I fear the Sierra awaits a similar fate.'



Intensive logging followed by a heavy thunderstorm turned a beautiful forest near Last Chance Creek, Plumas County, into an ecological moonscape.

State's citadel of stone, wind is under siege

916-582-0814 (w) or 916-587-8475 (h)

Stories by Tom Knudson

Bee Sierra Bureau

© 1991 The Sacramento Bee

John Muir said it best. The Sierra Nevada, the naturalist wrote a century ago, "seems to me above all others the Range of Light, the most divinely beautiful of all the mountain chains I have ever seen."

Remember those words. Savor them like old wine. Share them with young children. For Muir's words no longer hold true.

Today, California's Sierra Nevada — one of the world's great mountain ranges — is

suffering a slow death.

Almost everywhere there are problems: polluted air, dying forests, poisoned rivers, vanishing wildlife, eroding soil and rapid-fire development. Even Muir's holy ground, Yosemite National Park, is hurting. Much of its forest has been damaged by ozone.

Remarkably, the problems have drawn little attention, masked in part by the enormity of the range. The Sierra Nevada, after all, stretches for 430 sky-scraping miles along the eastern edge of California, spanning 18 counties, nine national forests, a half-dozen climatic zones and three national parks.

At first glance, these mountains seem

invincible. Up close, it's another story. Just as Jonathan Swift's Lilliputians subdued Gulliver, so, too, are we bringing down a giant.

The vulnerability of this majestic mountain range was the central finding in an eight-month investigation by The Bee, involving more than 200 interviews, 10,000 miles of travel and the examination of a small mountain of government reports, scientific studies and other documents.

There are no official estimates of overall environmental damage to the Sierra Nevada for one simple reason: No government agency, university or environmental group has taken an exhaustive look at the entire range.

The Bee's investigation, though, uncovered plenty of reasons for concern. Across the range, one can find an assortment of unsettling scenes, including heavily logged forests, barren, eroding soil, silt-choked streams and scenic vistas fouled by air pollution.

The investigation also found that, in many cases, it is we Californians who are to blame.

Wary of our cities, we are spilling into the Sierra in record numbers. The mountains, already suffering from logging, mining, dam building and other activities, must

Continued on next page, 2

ABOUT THIS REPORT

The Sierra Nevada stands as California's eastern sentinel, a towering, 430-mile range that is as synonymous with the Golden State as Hollywood or the Golden Gate Bridge.

Although the mountains that naturalist John Muir

Since the series appeared June 9-13, key federal and state officials have called for sweeping environmental reforms for the range. California Resources Secretary Douglas Wheeler plans to convene a "Sierra summit" this fall, and U.S. Rep. Mel Levine, D-Santa Monica, said he plans legislation to ensure greater protection for the southern Sierra Nevada, including its majestic giant sequoia forest.

INSIDE

The Air

Throughout much of the Sierra Nevada, the "air the angels breathe" is fouled by a not-so-heavenly cloud of contaminants — ozone, sulfur dioxide, polycyclic

The Soil

Along the back roads of the Sierra Nevada is a battered and bleeding land, places where trees, grass and other vegetation have been peeled away and soil is washing into mountain streams at staggering rates. The problem draws little attention, though,

'Invincible' range faces core threat

Continued from page 1

now bear new burdens: shopping malls, traffic jams, ozone, wood smoke and resort hotels.

And government, with a few exceptions, is doing little to make things better. Lack of money and manpower is a familiar refrain. That's the good news. The bad news is that federal land-management policies — particularly for logging, livestock grazing and mining — are actually hastening the destruction.

Nor is science a panacea. Scientific research in the mountains is expensive, and funding is scarce. Science, by its nature, is often selective — singling out one problem, but overlooking the larger whole. The more that scientists study the Sierra, the more questions they have. Studies beget more studies. Meanwhile, the mountains suffer.

Solutions are elusive, roadblocks numerous. The Sierra's enormous distances, convoluted geography and jigsaw pattern of land ownership make conventional land management difficult, if not impossible. Many remedies have been discussed — such as setting aside more land for wildlife, building fewer houses, cutting back on logging, creating a Sierra Nevada commission or even a new "Range of Light" national park. But change in the mountains is an uphill struggle.

Today, the Sierra is dominated by controversy. From Camp Nelson to Quincy, Lone Pine to Nevada City, people are fighting over the future of this range. At the center of the controversy stands the largest landowner in the Sierra, one that has cut vast stands of forests, caused massive soil erosion and destroyed many sparkling streams. That landowner is the U.S. Forest Service.

At risk, ultimately, is more than a mountain range. At risk is one of the world's great outdoor meccas, a citadel of stone and wind, a storehouse of wonder. "A huge granite mountain cannot be denied," photographer Ansel Adams once said. "It speaks in silence to the very core of your being."

A land of many gifts

The Sierra has long been a land of superlatives — home of the largest living things on earth, giant sequoia trees; 95 of the 100 tallest mountains in California, including the tallest in the nation outside Alaska, Mount Whitney; and the 10th-deepest body of fresh water on the planet, Lake Tahoe.

Even the names of its places are fantastic: Sky Parlor Meadow, Pulpit Rock, Hell-for-Sure Pass, Siberian Outpost, Silver Spray Falls, Castle Rock Spire, Sawtooth Ridge, Cloud Canyon, Thousand Island Lake, Hawks Head Notch and so on.

Its enormity is daunting. Stretching from the Mojave Desert to Mount Lassen, the Sierra heaves and buckles across 15.5 million acres — enough real estate to cover more than half of Pennsylvania. But even more surprising is who owns all that territory: About 70 percent of it is public land, deeded to the citizens of the United States.

Only 10 percent of the range, though, is protected by Yosemite, Sequoia and Kings Canyon national parks. The remainder is divided up roughly along these lines: 52 percent U.S. Forest Service; 30 percent private; 7 percent U.S. Bureau of Land Management; and 1 percent state, county and municipal.

It is a land of many gifts — emerald forests, sapphire lakes, snow-clad peaks, satin sunsets and stars that swing like lanterns in the night. But its greatest gift is locked up in the dance of clouds and wind, the clash of winter storm and cold, unyielding stone — the miracle of mountain water.

Roughly six of every 10 gallons of fresh water used in California come from the Sierra Nevada. Without its cloud-stopping, moisture-wringing peaks, the most productive farmland in America — the Central Valley — would be desert. Without the Sierra, much of California would die of thirst.

The Sierra, too, is the birthplace of an idea, one put forth in 1892 to mark the formation of a small group of wilderness enthusiasts:

"To enlist the support and cooperation of the people and the government in preserving the forests and other natural features of the Sierra Nevada."

Nearly a century later, that group has become one of the most influential conservation groups in the world: the Sierra Club. But even the mighty Sierra Club has not stopped destruction of its namesake mountains. And there is controversy over that, too.

These days, the Sierra Nevada remains a magnet for accolades, a place where phrases like majestic, breathtaking and awe-inspiring are much in use, often for good reason.

But in recent years, another mountain dialect has begun to emerge, one marked not by lofty sounding adjectives, but by a tone of trouble and concern. Today, dark clouds are gathering over Muir's Range of Light — a paradise in peril.

As Douglas Bradley, editor of a recent collection of scientific articles about the Sierra, put it:

"We are wont to whittle away at our giants,



Bee/Jay Mather

The spine of the Sierra — the "Range of Light" — looking south from the southeastern end of Yosemite National Park.

such as buffalo or elephants or the seven seas, until they are depleted. I fear often that the Sierra awaits a similar fate."

Clear cut, then disaster

Traveling in a car at 60 mph, the foothills of the northern Sierra are a kaleidoscope of green and brown and blue. One thing, though, is clear: The land is rich, thanks to good soil, generous rainfall and a forgiving altitude.

Trees grow large here, very large. Step out of the car north of New Bullards Bar Reservoir in Yuba County and you can find some real museum pieces — Douglas fir, ponderosa pine and sugar pine, straight as a ruler, wide as a horse.

Nearby, on a steep ridge above Mill Creek, a logging company went to work in 1990, toppling trees for a prominent landowner, the Tahoe National Forest.

The Tahoe National Forest, however, did not want just a few trees removed. It wanted the entire area leveled.

The agency knew the clear cut would be controversial, but it was confident. After all, it had assembled a thick document — known as an environmental assessment — analyzing the impact of logging on everything from water quality to wildlife habitat.

A clear cut, the national forest concluded, would be good for the economy and the land. According to national forest staff, logging would improve bald eagle habitat, promote "visual diversity," even enhance recreation.

Still, there were concerns: Slopes were steep, soil was prone to erosion and Mill Creek — a clear, cold trout stream — tumbled through the area. Nonetheless, then-forest supervisor Geri Bergen decided clear cutting would have "no significant impact."

"All practicable means to avoid or minimize environmental harm have been adopted," she wrote in a document obtained by The Bee through the U.S. Freedom of Information Act. "Soil and water resources will be protected."

That is not how things turned out. Today, the area is an open wound: a stump-scarred wasteland of barren slopes and eroding soil. Downhill, Mill Creek is clogged with mud, and the trout are gone.

At the headquarters for the Tahoe National Forest, confidence has turned to embarrassment. "It has been painful for us," resource

officer Jeanne Masquelier said. "There was a lot of blood shed over this."

"I'll stick my neck out — I think we were in too big of a hurry. We were in a hurry to meet our annual timber quota. We pushed too hard. There were too many risks."

Mill Creek is not an isolated incident. It is, in fact, a kind of mirror — a reflection of the damage taking place throughout the forests of the Sierra, on public and private land.

"These kinds of things happen all the time," said Robert Holland, a plant ecologist who recently left the California Department of Fish and Game to work on a book. "I'm appalled, but not at all surprised."

A forest under assault

The destruction of any forest is controversial. But the Sierra forest — known around the world for the diversity, size and grandeur of its trees — is much more than just another forest.

"I cannot pretend to account for the extreme magnificence of the Sierra forest," said Asa Gray, the distinguished 19th century botanist, in a lecture at Harvard University in 1878.

"Evidently, there is something wonderfully favorable to the development of trees, especially coniferous trees. And it is not easy to determine what it can be."

Today, this storybook forest is under assault. Consider:

■ Throughout the range, a record 6 billion board-feet of timber, enough to build more than half a million homes, are dead or dying, and no one is sure why. Drought, bark beetles, air pollution and fire suppression are suspects, but the mystery is far from solved.

■ While the forest suffers, the chain saws whine. Trees are being logged from some parts of the Sierra faster than nature can restore them — and in ways that are transforming the region's renowned mixed-conifer forest into a single-species tree farm.

■ In the Sierra, unlike northwest California, most trees are falling on public land under the eye of the U.S. Forest Service. And the cut on public land is growing — up from 549 million board-feet in 1980 to more than 1 billion board-feet in 1988.

Concern is growing — inside the Forest Service and out — that this government-sanctioned logging may be stealing the glory from the Sierra forest once and for all.

"The biggest threat to the Sierra Nevada is the United States Forest Service," said David Brower, executive director of the Sierra Club from 1952 to 1969 and one of the nation's most well-known conservationists.

"The clear cuts we used to complain about were in the Pacific Northwest," said Brower, 78. "Now, if you fly over the Sierra, you see clear cuts all over."

But the Forest Service's top official in California said the agency is changing, from a timber-dominated institution to one that will care for the entire forest.

"We are really at a crossroads," said Ron Stewart, regional forester for Region 5, which includes California and Hawaii.

"We've got a history. And we see over the past couple of years, and in the next couple, rapid changes going on in the direction and aspects of our mission."

Last year, the agency issued a kind of manifesto — an "environmental agenda" it said would usher in a new Forest Service dedicated to safeguarding diversity, enhancing recreation and doing less clear cutting.

"There is some very good research that's coming out almost daily that says we need to look at the total ecosystem, that we ought to be more careful in the way we conduct our timber harvest activities," said David Jay, a deputy regional forester.

But even Forest Service employees wonder if the agency can really change.

"I hear a lot of good verbiage," said Ron Medel, a fisheries biologist with the Tahoe National Forest. "But is it translating to change down on the land? No."

"The Forest Service revolves around timber," said Steve Brougher, a wilderness supervisor for the Stanislaus National Forest. "I haven't seen anything that would indicate a change of substance — anything really visionary."

Most Americans associate the Forest Service with its cuddly mascot, Smokey the Bear. But over the past four decades, the Forest Service, the nation's largest fire-fighting agency, also has become one of the nation's biggest timber barons.

And for good reason: That's what Congress tells it to do. Today, pressure to meet annual timber targets set by Congress is an enormous driving force within the Forest Service — one that affects everything from who gets a good pay raise to which stand of Sierra forest will fall next.

"We have a whole generation of managers who were raised on getting the cut out," said resource officer Masquelier. "They get graded on it. When our forest supervisor gets his yearly review, it's a big-ticket item — 'Did you meet the timber targets?'"

"I have wildlife targets, too, and fish targets. And nobody ever once reviews — when I get graded — whether I meet my fish and wildlife targets. I think that's indicative of the double standard."

There are even troubling suggestions that pressure to cut trees has corrupted the agency's own decision-making process, including the environmental assessments — or EAs — prepared before logging.

"A lot of the time our EAs have been written to support a decision that's already been made: to go ahead with a timber sale," said Dean Carrier, who recently retired from the Forest Service after 23 years as a biologist.

"And that prostitutes the whole process. And it makes me madder than hell."

For the Forest Service, these are times of trouble, torment and — maybe — transition. "It's going to be a difficult next couple of years," Masquelier said.

"We're saying we're going to manage for ecosystems, for many values. At the same time, we've got people who have worked here for 20 or 30 years who want to meet their targets."

"We still get questioned very heavily about meeting our timber targets."

But Ed Whitmore, chief of timber planning for the Forest Service in California, said that is changing.

"We've got to quit thinking of timber sales as timber sales," Whitmore said. "Rather than timber being the driving, primary force, let's do our planning so we encompass all the values on a piece of land."

"And then, what is surplus, we sell. The timber is the result, not the objective."

But don't expect change overnight.

"It's going to take time to get the old tapes changed in people's brains," Masquelier said. "And beyond that, it's got to come from the leaders — the line officers and forest supervisors. They have to walk what they talk."

But trees are only one part of the Sierra puzzle. When a forest falls, damage can ricochet through the mountains. Again, Muir said it best:

"When we try to pick out anything by itself," he wrote in "My First Summer in the Sierra," "we find that it is bound fast to everything else in the universe."

Sierra's eroding soil

One of the biggest concerns lies underfoot: the erosion of mountain soil.

Soil is a fundamental building block of all life, but logging and other activities are flushing it out of the Sierra at catastrophic rates.

In the Plumas National Forest, for example, a single storm last year washed nearly a quarter-million tons of soil from a heavily logged region near Last Chance Creek. Today, the area is more scar tissue than forest, a moonscape of gullies and barren ground that will take centuries to heal.

The rate of erosion was staggering — more than 3,000 times higher than normal, according to an internal Forest Service report obtained through the U.S. Freedom of Information Act.

"The consequences of the storm were very dramatic and, unfortunately, very damaging," the report said. "Further accelerated erosion can be expected from this area in the future. Chances for seedling survival and long-term site productivity have been adversely affected on several hundred acres."

"With that kind of soil loss, they're not harvesting trees — they're mining them," said Clyde Wahrhaftig, professor emeritus of geology at the University of California, Berkeley, and a former member of the California Board of Forestry.

Of special concern is what Sierra historian Francis Farquhar called "the crowning glory" of the Sierra Nevada: cold, clear mountain water. Across much of the range, incidents like the one along Last Chance Creek are turning clear-as-glass Sierra streams to sloppy brown gruel, causing serious damage to aquatic life and fouling reservoirs and hydroelectric facilities with mud and debris.

On the north fork of the Feather River, for example, Pacific Gas and Electric Co.'s Rock Creek hydroelectric facility is drowning in mud. Behind the dam, mud is stacked up under water more than 70 feet deep, the result of 40 years of logging, livestock grazing and road building, much of it in the Plumas National Forest.

"There's definitely a problem everywhere we look," said Larry Harrison, a project manager for the utility's hydro-generation department.

"Every reservoir everywhere is filling up. It's just a matter of how much space there is — and how long it's going to take."

A mountain range left barren by soil erosion is no place for wildlife, either. Already, many species of wildlife are fading from the Sierra — for many reasons. But one common thread is mankind.

"The need to act is urgent," said a 1990 report by the California Policy Seminar, a joint group of state and University of California officials. "If we do not take remedial actions, it is likely that within decades — not centuries — the habitat destruction we are causing will lead to a massive wave of extinctions."

"We are at a crossroads," said Susan Sand-

Continued on facing page, 3

THE SERIES

TODAY: California's Sierra Nevada — one of the world's great mountain ranges — is suffering a slow death.

Almost everywhere you look there are problems: polluted air, dying forests, poisoned rivers, vanishing wildlife, eroding soil and rapid-fire development. Even naturalist John Muir's holy ground, Yosemite National Park, is hurting.

The vulnerability was documented in an eight-month investigation by The Bee, involving more than 200 interviews, 10,000 miles of travel and the examination of a

small mountain of documents.

There are no official estimates of overall environmental damage to the Sierra Nevada for one simple reason: No government agency, university or environmental group has taken an exhaustive look at the entire range.

The Bee's investigation, though, uncovered plenty of reasons for concern. Across the range, one can find an assortment of unsettling scenes, including heavily logged forests, barren, eroding soil, silt-choked streams and scenic vistas fouled by air pollution.

MONDAY: Throughout much of the Sierra Nevada, the "air the angels breathe" is fouled by a not-so-heavenly cloud of contaminants — ozone, sulfur dioxide, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen oxide, particulates and other chemicals.

Few parts of the range have been spared. During the summer, west-facing foothills and canyons are immersed in great ashen clouds of pollution. In the winter, once sparkling skies are smudged with yellow, brown and gray — the signature of too many woodstoves, automobiles and people in the mountains.

TUESDAY: The Sierra Nevada forest is dying. Logging is the most visible and controversial agent at work in the Sierra. But air pollution, drought and insects are inflicting great damage, too. And there is one other problem — more subtle than the rest — causing enormous harm: fire suppression.

Like soldiers in a siege, Sierra trees are falling — and falling fast. The battlegrounds are many: North Mountain, Duncan Canyon, Black Mountain, Red Clover Creek. In its toughest hour, the Sierra Nevada forest can find little mercy.

WEDNESDAY: Along the back roads of the Sierra Nevada is a battered and bleeding land, places where trees, grass and other vegetation have been peeled away and soil is washing into mountain streams at staggering rates.

The problem draws little attention, though, partly because gullies — unlike spotted owls — are not very glamorous. The Bee's investigation found that damage to soil and streams is perhaps the most serious and overlooked problem in the Sierra Nevada, one that threatens the essence of the range and the lifeblood of California — mountain watersheds.

THURSDAY: The Sierra Nevada, one of the world's great mountain ranges, is slowly dying — and no one seems able to help it.

Once majestic skies are filled with pollution. An emerald forest is sick and brown. Soil is washing away. Streams are lined with mud. People are moving in — and wildlife is moving out.

Today, though, things are starting to change. Concern is growing, rumbling like a summer thunderstorm along the Sierra crest. You can hear it in mountain towns from Quincy to Camp Nelson, over campfires along the John Muir Trail, even in some quarters of the U.S. Forest Service.

Map symbols key

- Lakes
- Rivers
- Specific mountain peaks
- County borders
- Pollution from Central Valley and Bay Area
- Wood smoke pollution
- Mercury contamination found in fish tissue
- Mercury contamination found in sediment
- Ozone damage
- Poor visibility
- Areas of desertification
- Threatened deer herds
- Logging damage

North fork Feather River

More than 7 million cubic yards of sediment are backed up behind PG&E's Rock Creek and Cresta hydroelectric facilities. Major sources include logging, livestock grazing, road building and abandoned mines in the Plumas National Forest.

Butte and Yuba counties

In Yuba County, essentially all winter-range habitat for mule deer is zoned into five-acre parcels. In Butte County, mule deer are also being squeezed out. Since the 1960s, the Bucks Mountain herd has declined by more than half, largely because of encroachment of habitat.

Slate Creek

Abandoned mines, some more than a century old, belch pollution into the watershed, including iron oxide, sulfuric acid and sediment. Aquatic habitat has been severely damaged — and trout are scarce.

New Bullards Bar Reservoir and Mill Creek

Clear cutting in the Tahoe National Forest in 1990 caused serious soil erosion and damage to aquatic habitat. Some of the damage could take more than a century to heal.

Yuba River

Mercury from abandoned mines has accumulated in fish tissue at levels the Food and Drug Administration considers unsafe for human health.

Folsom Lake

Concern about soil erosion has prompted the U.S. Bureau of Reclamation to undertake a major study this spring to see how much sediment has accumulated here.

Lower American River

Mercury has accumulated in fish tissue at levels considered unhealthy for aquatic life by the National Academy of Sciences.

Stanislaus National Forest

Catastrophic forest fires, a result of years of fire suppression, have led to severe soil damage and erosion.

Yosemite National Park

More than half of all Jeffrey and ponderosa pines sampled in 1986 showed signs of ozone injury. The source of the ozone: cars and trucks in the Great Central Valley and San Francisco Bay Area.

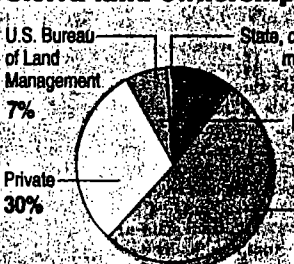
Madera and Fresno counties

Rapid growth in the foothill region is causing serious declines in mule deer populations. Since 1950, the North Kings deer herd has dropped from 17,000 animals to 1,900.

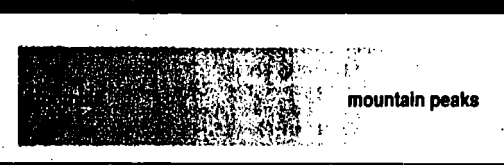
Sequoia National Park

Air pollution is raising havoc with the park's ecosystem — and spoiling once-crystal views. Damage to trees from ozone has been found in nearly all regions of the park. During the summer, great ashen clouds of pollution envelope the park in a gauze-like haze.

Sierra land ownership



Elevation key



The Sierra Nevada: A treasure in trouble

Celebrated for its towering peaks, majestic forests and matchless grandeur, the Sierra Nevada is a symbol of wilderness around the world. Today this mountain sanctuary is in peril. Forests are mysteriously dying. Soil is eroding at staggering rates. Wildlife is disappearing, streams are running brown with mud, large stands of timber are being clear cut and — in some places — mountains are turning to desert. Ozone is hurting trees from Sequoia National Park to Lake Tahoe. Winter skies are smudged with the sickly blue-gray haze of wood smoke pollution. Shown here is a sampling of some of the threats to the Sierra Nevada.

Last Chance Creek

Salvage logging in the Plumas National Forest has led to catastrophic soil erosion and damage that will take centuries to heal. In 1990, one heavily logged area lost nearly a quarter-million tons of topsoil during a single storm.

Sierra Valley

Decades of logging and livestock grazing have caused serious damage to thousands of acres. In some places, once-forested land has given way to sagebrush — no longer forest, but desert.

Truckee

Pollution from woodstoves, cars and trucks hangs like a curtain in the winter sky, fouling views and causing concerns about respiratory diseases, cancer and other health problems. Residential, commercial and ski area development continue to destroy prime mule deer habitat.

Blue Canyon

Summer ozone levels are frequently higher than downtown Sacramento. Mule deer numbers have dropped more than 60 percent since 1960, because of road building, logging, reservoir construction and other factors.

Lake Tahoe

Nearly one-quarter of 1,550 pine trees sampled in 1987 showed signs of ozone damage. Urbanization has eliminated about 75 percent of the basin's marshes, 50 percent of its meadows — and caused a steady decline in the clarity of the lake itself.

Mono Lake

The diversion of water to Los Angeles has caused serious damage to aquatic and terrestrial ecosystems. In addition, wind blowing over exposed areas of lake bed has given rise to enormous dust storms containing sand, salt and toxic chemicals.

Mammoth Lakes

The level of respirable — or inhaleable — dust from woodstoves routinely exceeds state health standards in the winter. Last year, the town imposed a mandatory ban on wood burning on days when air quality is bad.

Owens Lake

Heavy winds whip up enormous dust storms containing some of the highest levels of dust ever recorded in North America. The source of the dust: Owens Lake's vast lake bed, dried up by water diversions to Los Angeles.

Sequoia National Forest

Logging in giant sequoia groves in the early to mid-1980s stirred enormous controversy. Elsewhere, logging, livestock grazing and road building have caused serious soil erosion and water quality degradation. Seedlings are dying by the thousands, victims of sunstroke, thirst, lack of nutrients and the intrusion of brush. In some places, once-forested land is giving way to desert.

Continued from previous page, 2

ers, a wildlife biologist and leading authority on one of the mountain's most threatened birds, the willow flycatcher.

"The demands on the Sierra are more than the mountains can give."

Even the familiar mule deer is suffering heavy losses — its habitat picked apart by logging, road building and urban development. In fast-growing Fresno County, for example, mule deer numbers along the north fork of the Kings River have dropped from 17,000 in 1950 to around 1,900 today, due largely to habitat loss.

"When we lose land to a subdivision, we lose it forever," said Terry Mansfield, a wildlife manager for the California Department of Fish and Game.

"People complain about deer being in their back yard eating their roses, when, in fact, the people are in the deer's back yard, too."

While the problems in the Sierra grow, so, too, do the numbers of people. Years ago, most people came to the mountains to visit. Today, they are coming to live.

The numbers are startling: Six of the 10 fastest-growing counties in California are Sierra Nevada counties, according to the 1990 U.S. Census. Three of those counties — Nevada, Amador and Calaveras — grew by

more than 50 percent.

"We've got to come up with an answer to growth, and I wish I had one," Brower said. "Ansel Adams came as close as anyone years ago when he said, 'When the theater is sold out, you don't sell lap space.'"

"Well, this state is sold out — and we're selling lap space. And when that happens, the mountains are bound to suffer, too."

Smog invades the mountains

People also are bringing a problem that potentially is more serious than all the rest: air pollution.

Today, the Sierra Nevada — known widely for its brilliant blue skies and telescopic views — is fouled at times by some of the dirtiest air in California.

Consider this: In July 1989, Ash Mountain in Sequoia National Park recorded a higher monthly average ozone level than any air-quality monitoring station in the Los Angeles area. Ozone — born in the clash of smog and sunlight — is a major suspect in the massive tree die-off sweeping through the Sierra.

"You can go pretty much anywhere in the park and find trees with ozone injury," said Diane Ewell, an air-quality specialist at Sequoia.

On winter days, pollution from wood smoke fills mountain skies in Truckee, Mammoth Lakes and elsewhere with a sickly blue-gray haze containing toxic compounds known to cause cancer.

"It's very striking," said Russell Roberts, air pollution control officer of the Northern Sierra Air Quality Management District. "You start with this brilliant white filter and at the end of 24 hours, it's black. And it smells like wood smoke. And everything on that filter you are breathing into your lungs."

Fifty years ago, you could stand atop Moro Rock in Sequoia National Park and see 100 miles. Today, summer skies are so fouled by nitrogen oxide, sulfur dioxide, particulates and other chemicals that you are lucky to see five miles.

"If you were to put a pad of paper up there on Moro Rock and ask, 'How's the air today?' the answer would be universal: It stinks," said Tom Nichols, an environmental specialist at Sequoia.

The Sierra's air quality woes, in fact, are more troublesome and more serious than the more widely known air pollution problems in Grand Canyon National Park.

"Grand Canyon actually has a little cleaner problem," Nichols said. "A lot of their particulate matter comes from power plants. So they have a chance to get some bag on those

stacks and clean up the air.

"Here, there's no single thing — like a smokestack — we can point to. We're stuck with a regional problem almost entirely. And therefore, we've got a tougher road ahead of us."

In the face of such enormous problems, one might expect to find a flurry of government action — or at least strong words of concern. Instead, one finds mostly inaction.

"When you go to any agency, you get the litany of, 'Yeah, we know it's happening. But we don't have the time and we don't have the staff,'" said Michael Jackson, an attorney for Friends of Plumas Wilderness in Quincy.

"The frustrating thing about watching the Sierra die is that there is the knowledge and desire that it not happen. But the problem is there is no one responsible."

"When my grandchildren's grandchildren come before whoever's in charge at that time and ask where it went, they're going to say there was no one responsible. It disappeared because nobody was responsible."

This five-part series was written and reported by Tom Knudson of The Bee's Sierra Bureau in Truckee, with assistance from Sacramento-based staff writers Lorena Natt and Ricci Graham, and staff research librarian Pete Basofin.

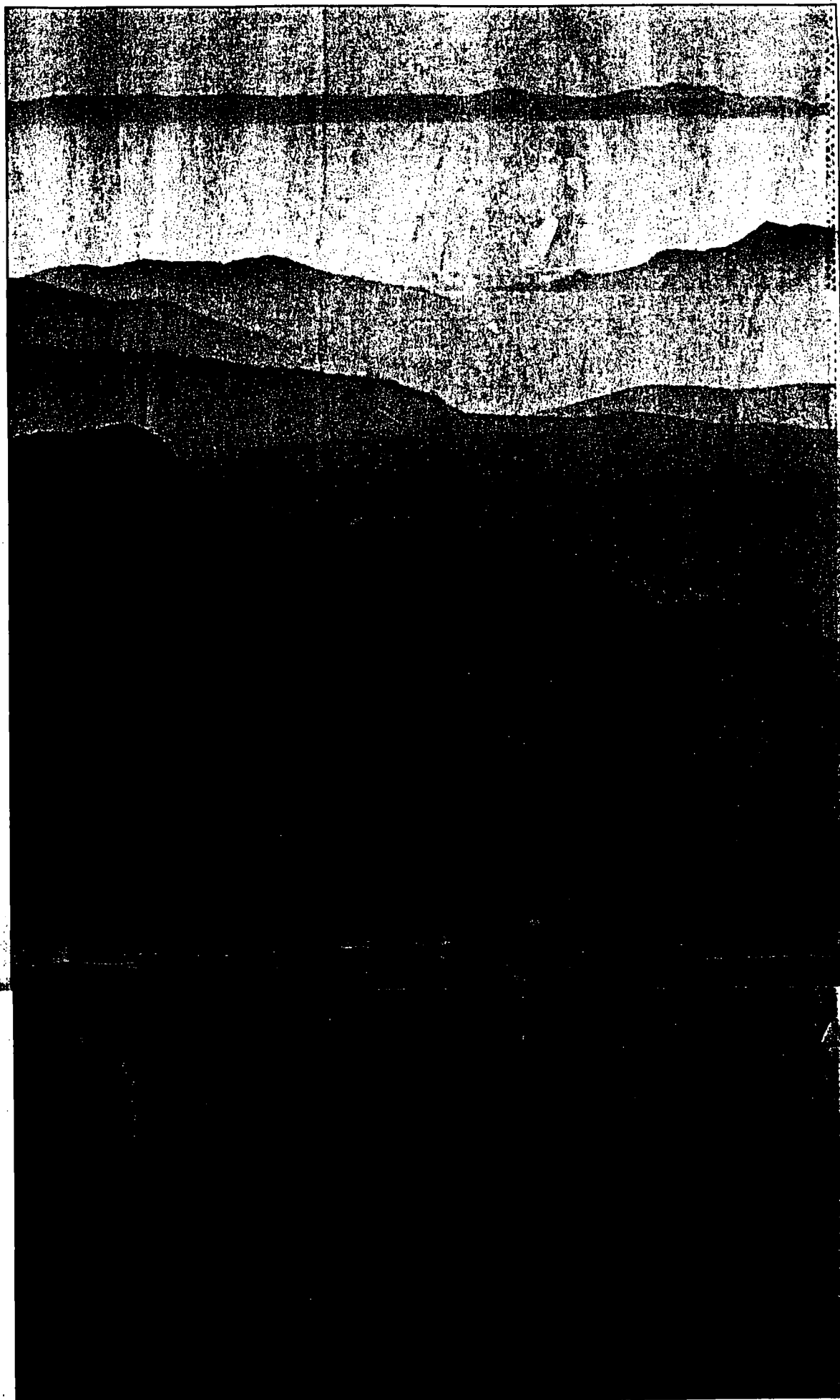
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- U.S. Bureau of Land Management, (916) 985-4474.
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MAJESTY AND TRAGEDY THE SIERRA IN PERIL



A view from Sequoia National Park on a clear day, left, contrasts sharply with a view from Yosemite National Park, below, on a day when a dense layer of smog is visible. As the air warms during the day, much of the polluted air mass rises from the Central Valley into the mountains.



AIR

Once-crystal Sierra sky is choked by pollutants

Second of five parts

"The air up there in the clouds (at Lake Tahoe) is very pure and fine, bracing and delicious. And why shouldn't it be? It is the same the angels breathe."
— Mark Twain, from "Roughing It," published in 1872

By Tom Knudson
Bee Sierra Bureau

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LAKE TAHOE — Thirty-three years ago, amateur photographer Jim Hildinger set out on a mission: to capture on film the majesty of this world famous mountain lake.

In the process, he also documented a disaster.

"You notice it particularly with the color slides," said Hildinger, owner of Angora Lakes Resort near Echo Pass. "The ones from the '50s are just crystal clear. You can pick out individual trees across the lake. You can't do that anymore."

"There was a time when a hazy day was rare. And it's quite the reverse now. To those of us who knew what it used to be like, it's a disaster."

Sadly, Lake Tahoe is not alone.

Throughout much of the Sierra Nevada, the "air the angels breathe" is fouled by a not-so-heavenly cloud of contaminants — ozone, sulfur dioxide, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen oxide, particulates and other chemicals.

Few parts of the range have been spared. During the summer, west-facing foothills and canyons are immersed in great ashen clouds of pollution that blow in from the Central Valley and the San Francisco Bay Area.

DAY 2

Monday, June 10, 1991

In the winter, once-sparkling skies are smudged with yellow, brown and gray — the signature of too many woodstoves, automobiles and people in the mountains.

For years, the problem drew little attention, in part because the Sierra Nevada, by its very nature, seemed somehow above it all. The Sierra, after all, has long been known for its cobalt blue skies and clean mountain air — a place so luminous, so bathed in brilliance that John Muir called it the Range of Light.

But in recent years, as California's population has swollen, a much different picture has emerged.

Today, scientists come to the Range of Light not to study its clean air, but to investigate its airborne poisons. Warning signs are numerous: Forests are dying, amphibians are disappearing and world class views are a memory.

In Sequoia National Park, the situation is so serious that scientists worry the park's ecosystem may one day be shaped not by natural forces, but by air pollution. Ultimately, scientists say, the entire Sierra Nevada — including its forests, wildlife and water — may wither beneath a pall of poisons.

"Important resources such as watershed quality, recreational amenity, wildlife habitat and overall ecological stability are at risk," said a 1987 California Air Resources Board report on ozone.

Tracking the problem has been anything but simple.

The Sierra Nevada is large and the number of air-quality monitoring stations is small. The composition and concentration of pollutants change from season to season — and from watershed to watershed. And with California cities mired in dirty air, money for solving air pollution problems in rural mountain regions is hard to come by.

Ozone, a city-born pollutant formed when automobile exhaust clashes with sunlight, is perhaps the most serious threat in the Sierra Nevada. Today, scientific studies show that state and federal ozone standards, set largely to protect human health, do not begin to



Smoke puffs out of a chimney in Quincy. Wood smoke has become a major pollutant in the Sierra.

protect Sierra forests.

"Right here, we have recorded the highest 24-hour ozone level of any unit in the national park system," said David Parsons, research scientist at Sequoia National Park. "And I find that frightening."

On winter days, some of the dirtiest air in California can be found in Sierra communities such as Mammoth Lakes and Truckee, where pollution from wood smoke routinely exceeds state health standards and may pose a threat of cancer.

"It's very striking," said Russell Roberts, air pollution control officer of the Northern Sierra Air Quality Management District. "You start with this brilliant white filter and at the end of 24 hours, it's black. And it smells like wood smoke. And everything on that filter you are breathing into your lungs."

In the lonely country around Owens Lake, where large areas of lake bed have dried up because water has been diverted to Los Angeles, heavy winds whip up enormous toxic dust storms of sulfur, mercury, arsenic and lead. The concentrations of dust are among the highest ever recorded in North America.

"If this was happening in an industrial area, gas masks would be required," said Thomas Gill, an earth scientist with the Crocker Nuclear Laboratory's air-quality group at the University of California, Davis.

Scientists have known for years that mountains are not immune to air pollution. Earlier this century, sulfur dioxide from copper smelters in Montana and British Columbia defoliated large stands of forest. As recently as 1952, emissions from an aluminum ore plant in Washington killed and injured trees across a 50-square-mile area.

But concern about air pollution in the Sierra Nevada is much more recent. The first cluster of scientific papers on the subject appeared in the 1970s, followed by a cloudburst of articles, presentations and proceedings in the 1980s.

Today, scientists are beginning to sort out a mystery. And like any good thriller, this one is marked more by questions than answers.

"There are large gaps in understanding (how) forests respond to pollutants," wrote the editors of "The Effects of Air Pollution on Western Forest," a collection of scientific papers presented at an Anaheim symposium in 1989.

"Air-quality data for forested areas are limited. Long-term measurements of forest growth and conditions are even rarer."

In the Sierra, scientists often have had to play catch-up. Despite steady population growth at Lake Tahoe, the first formal study of its ozone problem did not take place until 1987, and was not published until 1989. Even today, scientists have yet to study ozone across the entire Tahoe basin.

"We have conventionally put our air-quality monitoring efforts into urban

areas," said Donald Peterson, author of a 1988 study on ozone and forests for the California Air Resources Board. "So we have a very poor understanding of what the air quality in a lot of these mountain areas actually is."

"One problem is the complexity and variety of mountain topography. Because of the extreme variability in mountain terrain, you also get extreme differences in air quality over very small areas."

Add to that a host of other factors known to harm forests — including drought, insects, road salt, soil erosion and fire — and you get a first-class scientific jigsaw puzzle.

"These are still evolving areas of science," said Thomas Cahill, professor of physics and head of the air-quality group at the Crocker Nuclear Laboratory. "We all know little pieces. But none of us knows everything. That's the key."

Solutions are elusive, caught up in a web of politics, economics, science and the relentless swell of humanity moving to California. Throughout the Sierra Nevada — and the West — a sense of urgency is building.

As the American Forestry Association put it in a December 1987 white paper on forests and air pollution:

"The quest among some policy-makers for complete understanding and a magically irrefutable scientific explanation of the problem — undertaken as a substitute for additional pollution controls — is shortsighted and foolhardy."

Nowhere is the urgency greater than in the southern Sierra Nevada, where scientists fear everything from giant sequoia trees to tiny foothill yellow-legged frogs may be suffering the effects of air pollution.

To understand the problem, though, one must first turn not to the mountains, but to the source of the dirty air — the San Joaquin Valley.

Once a rural backwater, this southern half of California's Great Central Valley is now one of the state's fastest growing — and most

polluted — regions.

Every summer morning, the pageant of pollution begins. Cars, trucks, power plants, tractors and industries from Sacramento to Bakersfield all do their part, filling the sky with a foglike layer of sulfur dioxide, organic acids, nitrogen oxide, ozone and other compounds so thick it dims the sun.

To make matters worse, the valley also acts as a sump, a receiving station for air pollution blown in from the San Francisco Bay Area. Hemmed in by mountains on three sides, this enormous cloud of poisons swirls slowly about, growing dirtier as it bakes in the torrid valley sun.

Then, like clockwork, the cloud rises each day, creeping up the Sierra slopes to the east. Hour by hour, the pollution thickens, effectively fumigating a large band of forest from Bakersfield to Lake Tahoe, including three national parks.

"It's potentially an even greater problem than Southern California," said Paul Miller, a U.S. Forest Service plant pathologist and a leading authority on air pollution in California forests. "The air exchange in the San Joaquin Valley is much more sluggish."

Farther north, the Sacramento Valley is not much better. From Castle Peak at Donner Pass, the ugly scrawl of smog is etched across the valley on summer days, a reddish-brown to yellow-gray cloud that seems to rise like a tide and slosh against the granite mantle of the Sierra.

In the winter, the mountains produce plenty of pollution themselves, as woodstoves from Quincy to Lake Tahoe, Mammoth Lakes to Walker Pass belch out tons of foul-smelling and hazardous smoke, filling crystal skies with a cardboard-colored haze.

In the San Joaquin Valley, the stain of pollution is everywhere. Stand along Mountain View Avenue in Fresno County and you can no longer see the mountains, at least not in the summer. The whole valley seems lost in a gray, smoky haze that drifts, inexorably, toward the mountains.

Or stand atop the giant dome of Moro

Rock in Sequoia National Park where, historically, tourists have raved about the views: To the east, the jagged, knifelike Great Western Divide; to the west, a carpet of forest stretching to the valley, and beyond, the pencil-line scrawl of the Coast Range, some 100 miles distant.

Today, Moro Rock is enveloped in a veil of pollution that has stolen the telescopic views and replaced them with a lens of frosted glass. These days, you are lucky to see five miles down the canyon.

"You just have to wonder what it does to the trees and the wildlife," said Stephanie Henrietta, one of many tourists squinting through the haze at Moro Rock last fall.

"It's too bad," she said. "I grew up in the San Fernando Valley, near Los Angeles, but there's no way to get away from it now. There's no place to go."

A short distance down the trail stands a park display, the kind normally used to describe plants, animals, hiking trails and so forth. The subject of this display, however, is air pollution.

"Air pollution obscures our views, impairs human health, damages forest trees and acidifies our waters," the display says. "If not controlled, it will change these forests in ways we do not yet understand."

Ten years ago, Germany woke up to such a nightmare: Norway spruce, Scotch pine and silver fir were suffering extensive damage. Parts of the Black Forest turned brown. In Germany, one word has come to define the disaster: *Waldsterben* — forest death.

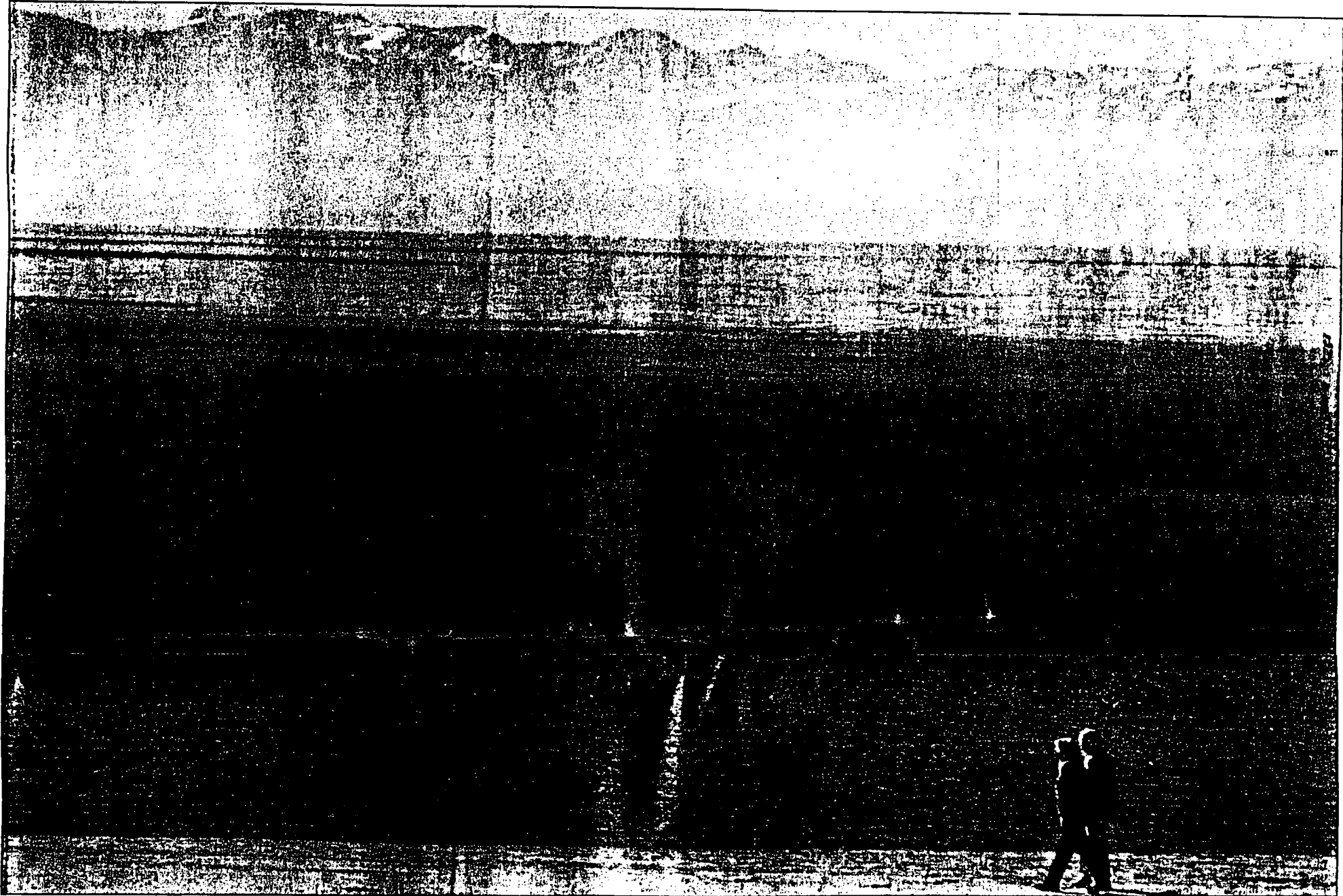
Today, the Sierra Nevada has its own *Waldsterben*. Up and down the range, trees are dying in record numbers. In some areas, one of three trees is dead. The U.S. Forest Service said there are estimates that the Sierra is checkered with a record 6 billion or more board-feet of dead or dying timber, enough to build more than a half-million homes.

Continued on facing page, 5



MaryAnn Rankin and Trent Procter of the U.S. Forest Service, far left, examine chambers, designed to fumigate branches with various levels of ozone, on giant sequoias in Sequoia National Park. The pair are standing atop a 102-foot-high scaffolding. At left, Diane Ewell, an air-quality specialist at Sequoia, examines pine tree needles for evidence of ozone damage.

Bee photographs by Jay Mather



Continued from previous page, 4

No one knows what is killing the trees. Traditionally, the Forest Service has pointed to drought and bark beetles. But in the Sierra Nevada, as in Europe, many people are looking to the sky for answers.

The most likely suspect is ozone — a stepchild of California's love affair with the automobile. Born in the clash of sunlight and auto fumes, ozone travels in bad company, the same pack of dirty air that lifts out of the Central Valley toward the mountains every summer morning.

Ozone's harmful effects are well known: It attacks the respiratory system, especially in unhealthy people. But even healthy people can be stricken with nausea, headaches and fits of coughing.

Ozone's effect on forests is no less kind. Absorbed through pine needles, ozone starts a chemical chain reaction that starves the tree of nutrients. First, needles begin to die. That, in turn, cuts back on photosynthesis — the process by which trees convert sunlight to energy and synthesize nutrients. Later, root growth is restricted. Ultimately, the tree may die.

Today, scientists can identify ozone damage — transparent yellow blotches on pine needles — in forests throughout much of the Sierra.

"The most severe damage is on our western slopes, those closest to the San Joaquin Valley," said Diane Ewell, an air quality specialist at Sequoia National Park. "But you can go pretty much anywhere in the park and find trees with ozone injury."

Even Yosemite National Park has been hurt. A 1986 study found that 58 percent of Jeffrey and ponderosa pines sampled in Yosemite showed signs of ozone injury — and that the symptoms were getting worse. Farther north, ozone's impact lessens but remains significant. The 1987 Lake Tahoe study, for example, found that of 1,150 pines sampled, nearly one-quarter "had ozone injury."

And that brings up an even bigger source of concern: California's ozone standard, set to protect human health, is not protecting trees. At Lake Tahoe, ozone levels in 1987 did not exceed the state health standard of 90 parts per billion — yet the forest still suffered.

"On the face of it, those ozone levels wouldn't be considered to be violating the state health standard," said Cahill of the

Crocker Nuclear Laboratory. "But they're certainly trashing the trees."

Another complicating factor: Ozone does not seem to kill trees directly, merely weaken them. It may, in effect, open the door to other unfriendly forces, such as drought and bark beetles.

"The bark beetle is an effect, not a cause," Cahill said. "A good growing tree can handle bark beetles perfectly well. It pushes through enough sap to drown them. But as it is stressed by drought, as it is stressed by ozone, its ability to outgrow its problems becomes less and less."

Unlike many air pollutants, ozone remains a kind of mystery, acting in curious ways that seem to put the Sierra Nevada at special risk.

For one thing, although ozone is conceived primarily in urban areas, its concentrations at high elevations often exceed those found in cities.

At Blue Canyon, for example, a rugged spot in the Sierra Nevada about 70 miles northeast of Sacramento, ozone concentrations are frequently higher than downtown Sacramento — sometimes three to four times higher.

"All day long, pollutants push out of the city," Cahill said. "But ozone is a secondary pollutant, one that takes time — and heat and sunlight — to form. Ozone really forms more downwind of urban areas."

And therein lies an irony of no small consequence: Sunlight, one of the very forces that has made the Sierra Nevada famous, is today turning it toxic. Sunlight, it seems, is no longer a simple blessing. Today, it is a blessing and a curse.

And once the sun goes down, ozone plays another cruel trick: It does not diminish nearly as much as it does in cities, where the same compounds that create ozone during the day — primarily nitrogen oxide — destroy it at night.

Cahill discovered that firsthand recently at Sequoia National Park. At night, two monitoring stations inside the park, at Ash Mountain and Giant Forest, recorded ozone levels about three times higher than in the valley. "That data was a stunner," Cahill said. "A lot of people looked at it and said, 'Oh, my God.'"

"If you look at the data, you see that daytime levels at Giant Forest, at 6,000 feet above sea level, are almost exactly what they are at Visalia on the valley floor, almost at sea level. But night-time levels at Giant

Forest are much higher.

"That means that when trees start opening their stomata (tiny openings in needles) at night and pulling in a lot of gases, they're pulling in a lot of ozone, too."

"To me, that's a great big red flag waving in the wind, especially when you can see ozone damage in almost 100 percent of the Jeffrey pine at the 6,000-foot level in Sequoia National Park."

Ultimately, though, scientists are worried about more than the yellowing of pines. They are concerned that ozone pollution could begin a series of long-term, catastrophic ecological changes in the Sierra. Already, such changes — including soil erosion, increased fire damage and the proliferation of brush — have been noted in one of the world's most heavily ozone-damaged regions: the San Bernardino Mountains east of Los Angeles.

At Sequoia National Park, environmental specialist Tom Nichols talked recently about those concerns:

"There's no question that continual fumigation of a species with ozone, even at relatively low concentrations, will put pressure on certain sensitive trees."

"Trees are just like people. There will be certain trees within a species that will get the fallout first — the most sensitive individuals."

"So as you begin to see air pollution affecting all the park species, and individuals within a species, you begin to see a park which is effectively shaped by air pollution, by society."

"And that means we deflect further and further from the target we should be shooting for: which is a pristine, wild, natural park."

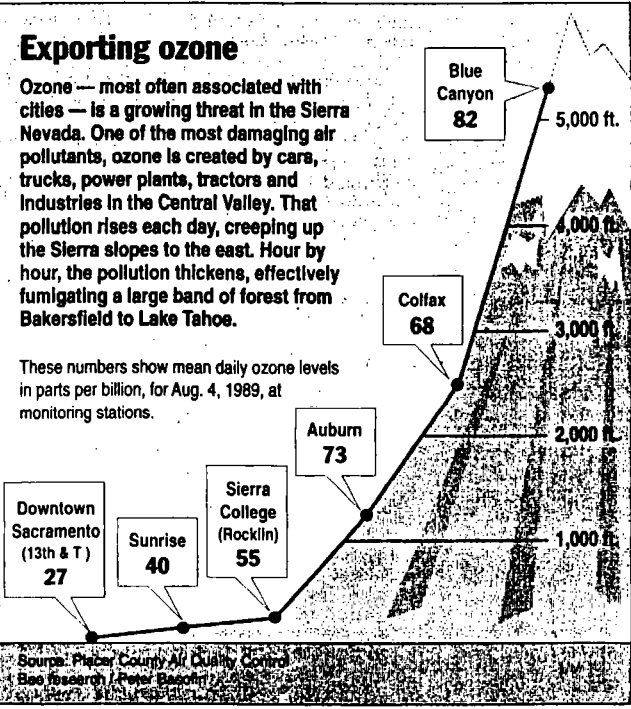
A major concern, Nichols said, is the health of one of the park's great sentinels — the largest living things on Earth — giant sequoia trees.

"Right now, it appears that ambient ozone levels are not hurting giant sequoia seedlings. But a 1989 study showed that seedlings exposed to slightly higher ozone levels, in a fumigation chamber, did show some damage," Nichols said.

"That means that if air pollution gets worse, because of growth, it just might begin to tip the balance away from giant sequoia regeneration. And that would have profound effects on the park and could affect the entire forest structure."

From the north shore, Lake Tahoe's south shore is barely visible in late February because of automobile exhaust and smoke from woodstoves. The air is fouled by polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen oxide, particulates and other chemicals.

'Air pollution obscures our views, impairs human health, damages forest trees and acidifies our waters. If not controlled, it will change these forests in ways we do not yet understand.'
 — display in Sequoia National Park



Comfy woodstove fires bring cloud of ill health

By Tom Knudson
Bee Sierra Bureau

TRUCKEE — As a real estate agent, Lois Nisporic has heard a lot of talk about the joys of mountain life — the spectacular scenery, the clean air and so on.

The other day in Reno, she heard a different story.

"I had met this woman," Nisporic said. "When I told her I was from Truckee, she said, 'Truckee! I hate to go through that town in the winter — the smell from the woodstoves just knocks you out.'"

Truckee, a picturesque mountain town that clings to the east side of Donner Pass about 100 miles northeast of Sacramento, is hardly unusual. Today, air pollution from woodstoves is fouling mountain skies from one end of the Sierra Nevada to the other.

At Mammoth Lakes, about 160 miles southeast of Sacramento, the glorious eastern wall of the Sierra is no longer so glorious, obscured by a foul-smelling layer of wood smoke. Step outdoors in Quincy, Nevada City or South Lake Tahoe on a winter morning, take a deep breath — and gag.

The problem is more than an inconvenience and a stain on the majesty of the Sierra. Today, many officials believe wood smoke is bringing a cloud of ill health to the mountains.

"The old statement that wood smoke is

good smoke isn't really true," said Thomas Cahill, head of the Crocker Nuclear Laboratory's air quality group at the University of California, Davis.

"You're looking at some mild carcinogens — cancer-causing chemicals — in enormous quantities. You've got to be concerned about the health effects."

Clearing the air is not going to be simple. Few things are more sacrosanct in the mountains than a cozy wood fire on a cold winter night. Some towns, though, have started to take action. Mammoth Lakes, for example, now bans wood burning when air quality is poor. But other communities, such as Truckee, have done little or nothing.

"Basically, the majority of days we sample in the winter in Truckee are violations of the state health standard," said Russell Roberts, air pollution control officer for the Northern Sierra Air Quality Management District.

"And it's not a borderline situation. In December, Truckee had a reading of 112 micrograms per cubic meter. That's more than twice the state standard."

Scientists have yet to pursue actual field work that might link wood smoke to a rise in respiratory disease in the mountains. In fact, scientific knowledge about wood smoke in general is limited, in part because government agencies and universities tend to worry more about urban air pollution.

Today, though, mountain skies often are filthier than city skies. Consider:

- Levels of benzo(a)pyrene — a cancer-causing compound found in wood smoke, automobile exhaust and elsewhere — are 25 times higher in Mammoth Lakes in the winter than along the freeways of suburban Los Angeles, according to a California Air Resources Board study.
- The amount of respirable dust — dust so small you breathe it into your lungs — in mountain towns routinely exceeds the state health standard of 50 micrograms per cubic meter, often by two to three times. In February 1990, Truckee and Mammoth Lakes had higher average respirable dust levels than Los Angeles or Sacramento. Most of the dust comes from wood smoke.

"It's very striking," Roberts said. "You start with this brilliant white filter and at the end of 24 hours, it's black. And it smells like wood smoke. And everything on that filter you are breathing into your lungs."

The list of pollutants in wood smoke is long and worrisome. It includes carbon monoxide, benzene, dioxin, formaldehyde, arsenic, sulfur dioxide and a complex family of chemicals called PAHs — short for polycyclic aromatic hydrocarbons — many of which are carcinogens.

On top of that you have billions of airborne dust particles, ranging from visible chunks of ash to microscopic specks of dust.

"The smallest particles are the biggest threat," said Bill Sessa, a spokesman for the Air Resources Board. "We're talking about particles smaller in diameter by several times than a human hair — small enough they can bypass your body's natural filtering system and cause problems deep in the lung."

"In many cases, these small particles are carriers for other compounds, the PAHs and things like benzene and dioxin."

Just how concerned should one be?

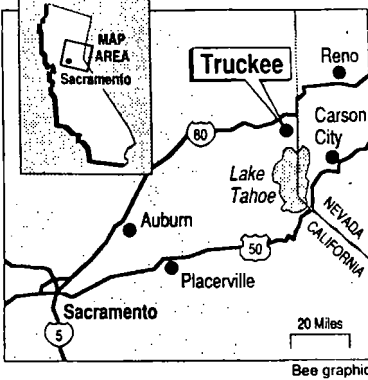
"If you live in one of these mountain areas, it makes sense to try to avoid being exposed," Sessa said.

"Anytime anyone is exposed to these pollutants above the health standard, there is ample reason for concern. But the people we are most concerned about are those who have existing respiratory problems and heart disease — and young children and the elderly."

In October 1989, the air resources board approved a list of suggested reforms, from requiring more efficient woodstoves in new homes to establishing voluntary no-burn days when air quality is poor.

In December, Mammoth Lakes went a step further, adopting a mandatory ban on wood burning when air quality is bad.

"Most people agreed we have an air quality problem," said William Taylor, associate planner for Mammoth Lakes. "You can see it



and you can smell it. And they were willing to cooperate."

In Truckee, progress has been slower.

"What I hear is an unwillingness, a nervousness to proceed until the technical facts are in," said Roberts of the Northern Sierra air quality district. "There are demands we do more monitoring. The fact is people are voting with their woodstoves. Very clearly, they want to burn wood. How we deal with that desire and solve the air quality problem at the same time is going to be a very difficult proposition."

Mountain lake turns to desert

Winds stir raging dust storms

By Tom Knudson
Bee Sierra Bureau

OWENS LAKE, Inyo Co. — Imagine a great silver lake, thick clouds of waterfowl and mountains hung like curtains on an indigo sky.

That is how settlers described this place, as a lonely Eden hitched to the dry southeast flank of the Sierra Nevada.

"Ducks were by the square mile, millions of them," said one resident around the turn of the century. "When they rose in flight, the roar of their wings could be heard 10 miles away."

These days, Owens Lake remains a special place — special, that is, for toxicologists, air pollution control officers, epidemiologists and cardiopulmonary specialists.

Today, Owens Lake is one of North America's great environmental calamities.

Here's what has happened: Over the past 70 years, water diverted to Los Angeles has left large portions of Owens Lake dry, exposing its highly mineralized lake bed. During the fall, late winter and spring, heavy winds rip through the area, kicking up enormous, blinding — and toxic — dust storms.

"These storms can be some of the worst in North America," said Thomas Gill, an earth scientist with the Crocker Nuclear Laboratory's air quality group at the University of California, Davis. "A number of them have resulted in dust concentrations of the highest level ever recorded in California."

The numbers are startling. During one intense storm in February 1989, the concentration of dust was measured at 1,861 micrograms per cubic meter — 37 times higher than the California health standard of 50 micrograms per cubic meter.

"That was the highest concentration that's been measured in the country," said Duane Ono, a deputy air pollution control officer with the Great Basin Unified Air Pollution Control District, which includes Owens Lake.

Most heavily affected is the tiny Owens Lake community of Keeler, population about 100. But nearby Ridgecrest, which has about 30,000 people and Lone Pine, which has about 2,000, are also plagued by Owens Lake dust.

"It's definitely a problem. It's one of the biggest problems we have," Ono said.

High dust concentrations, however, are only part of the problem. The nature of the dust itself is an even bigger concern.

"You could almost call it a witches' brew," Gill said. "We've seen unsafe levels of sulfur and we've found traces of selenium, arsenic, lead, mercury and salt."

"Mind you, we've only found trace amounts of some of these elements, but even a trace amount of arsenic can be dangerous. Various studies have shown it can cause cancer in humans."

Nature, it seems, is angry here, acting in ways that seem more fitting for the world of science fiction — like something out of Frank Herbert's "Dune." Here on Earth, the Dust Bowl comes to mind. Like Oklahoma during the 1930s, Owens Lake is a prisoner of dust, a hostage to the wind.

"The populace complains of coughing, sneezing and irritation of the eyes," said a report from the China Lake Naval Weapons Center, about 50 miles south of Owens Lake.

"Psychological problems emerge as some people become apprehensive because of difficulty in breathing. People become annoyed and anxious. Cats behave aberrantly."

The storms are large enough to be tracked by satellite. Some have been observed high above the Sierra, spiraling toward the San Joaquin Valley and Los Angeles. Some have even shut down operations at China Lake and Edwards Air Force Base.

"In a series of storms in 1985, dust — washed from the air by rain — fell as far south as Orange County, where it became a veritable mudfall, damaging paint and wax on vehicles and causing alarm to the public," the China Lake report said. "The major television networks announced that it was a fall of acid rain!"

"The lake bed is actually growing its own dust," Ono said. "There's the alkali and salt just below the surface. And when they come to the surface, it forms these fine crystals."

"So when the wind and the sand start to blow, you get these horrendous dust storms with whitout conditions."

Even dust specialists are impressed.

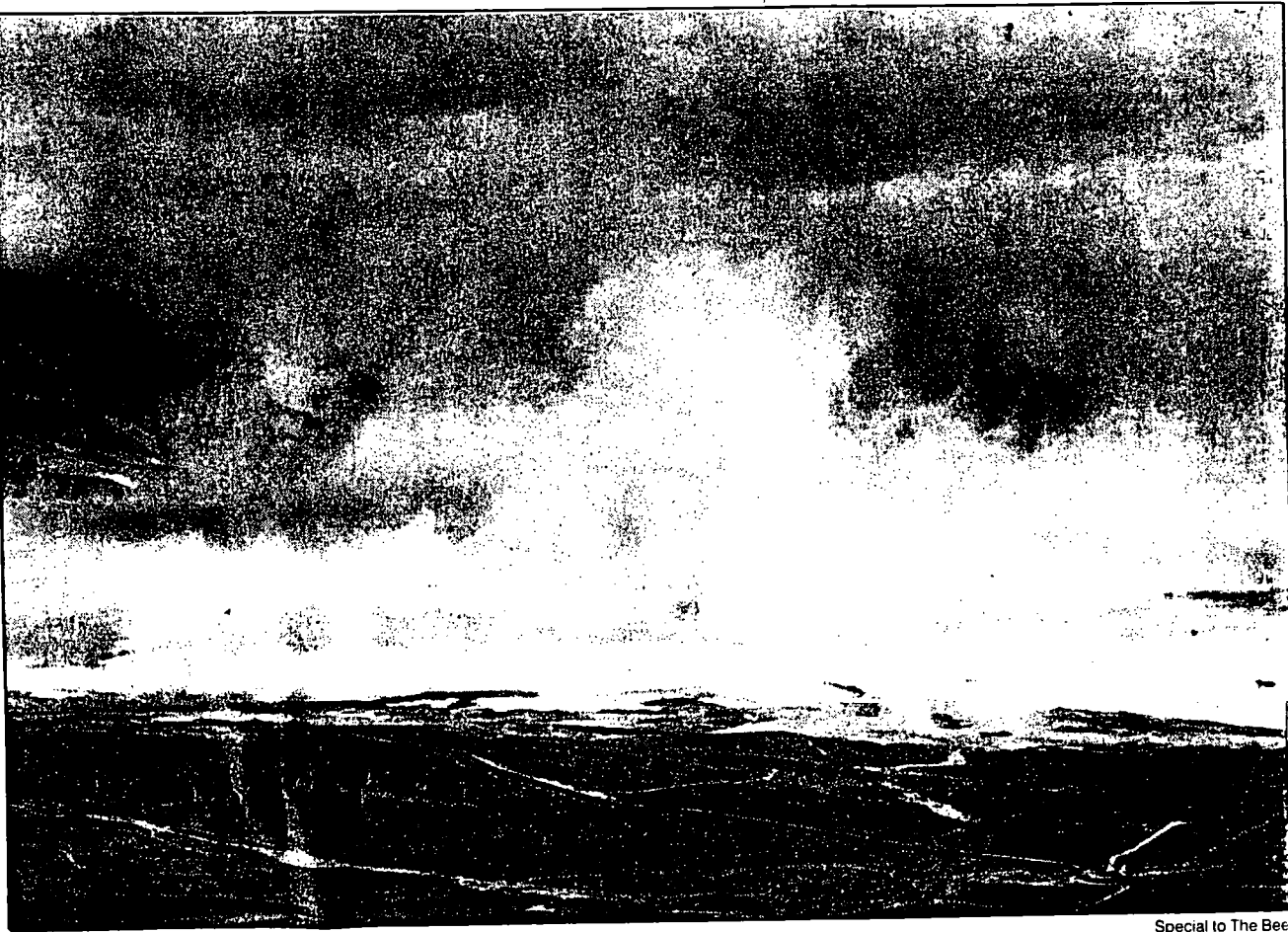
"The Sahara is the biggest source of dust in the world, but on a per-square-foot basis, I suspect Owens Lake is just as good," said Dale Gillette, a scientist with the air resources laboratory at the National Atmospheric and Oceanic Administration in Boulder, Colo.

"There's a lot of vulnerable soil. And secondly, there are tremendously high winds. Places like White Sands, New Mexico, or the Great Plains during the Dust Bowl of the 1930s — maybe those places on occasion would be stronger. But on a year-to-year basis, Owens Lake is probably the champion."

small mountain of documents.

There are no official estimates of overall environmental damage to the Sierra Nevada for one simple reason: No government agency, university or environmental group has taken an exhaustive look at the entire range.

The Bee's investigation, though, uncovered plenty of reasons for concern. Across the range, one can find an assortment of unsettling scenes, including heavily logged forests, barren, eroding soil, silt-choked streams and scenic vistas fouled by air pollution.



A toxic dust storm sweeps across Owens Lake. The dust has been found to include sulfur, selenium, arsenic, lead, mercury and salt.

Bill Cox, director of technical services for the Great Basin air pollution control district, described his run-in with one of Owens Lake's monster dust storms:

"It was a massive storm, the largest we've ever seen for total suspended particulates. I actually drove out to turn on the sampler — so I was there when it started."

"Visibility was down to maybe one foot. When I got out to change a filter, breathing was difficult. And the dust was irritating. It was like somebody taking salt and throwing it into your eyes — if you can imagine that."

"It excites you. It gets you into a very tense, kind of irritable mood. It's not only the dust, but there's a lot of static electricity, too."

The storms can last anywhere from a few hours to two or three days. But their impact on the landscape may be far more long-ranging.

"After these storms, the mountains look like they've been hit by a snowstorm," Cox said. "There's an eighth-inch of light powder over the entire area. That powder is salt. And it's a pretty safe bet that the salt is going into the ecosystem."

Concern is also growing for Owens Lake's twin to the north — Mono Lake — the largest natural saline body of water in California and one recognized worldwide for its bio-

logical abundance and eerie mineral deposits, or tufa formations.

Much like it did at Owens Lake, Los Angeles has dried up large portions of Mono Lake. And while a court order preventing further diversions was recently extended, Mono Lake continues to suffer.

One highly visible sign of trouble is a storm cloud of salt, sand and toxic chemicals that builds over Mono Lake during periods of high winds.

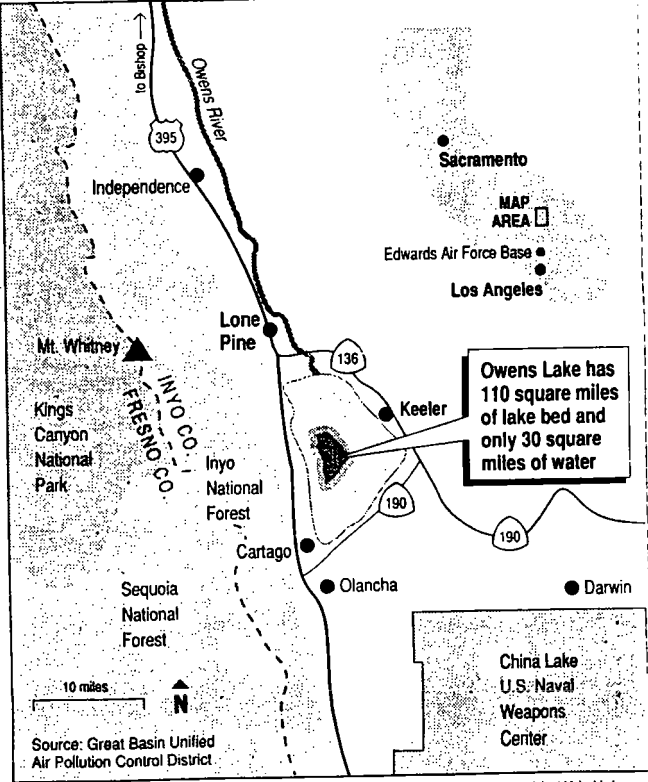
The dust storms "affect vegetation, tufa formations, wildlife and human activities," said a 1987 National Academy of Sciences report on Mono Lake. "Much more research is needed on all of these problems."

The same is true at Owens Lake, where scientists still are struggling to answer many key questions: How does the dust affect human health? How does it change the chemistry of desert soil? And how can it be controlled?

From this great tragedy, they hope to glean great lessons.

"Owens Lake is a wonderful natural laboratory, a classic example of desertification," Gillette said. "After all, it used to be a lake. And now it's a desert."

"It gives us some idea of what can happen when you're doing things like logging or grazing," he said. "It's an extreme example, but often we learn from studying the extreme — rather than something in between."



Bee graphic / Kris Holman

THE SERIES

SUNDAY: California's Sierra Nevada — one of the world's great mountain ranges — is suffering a slow death.

Almost everywhere you look there are problems: polluted air, dying forests, poisoned rivers, vanishing wildlife, eroding soil and rapid-fire development. Even naturalist John Muir's holy ground, Yosemite National Park, is hurting.

The vulnerability was documented in an eight-month investigation by The Bee, involving more than 200 interviews, 10,000 miles of travel and the examination of a

TODAY: Throughout much of the Sierra Nevada, the "air the angels breathe" is fouled by a not-so-heavenly cloud of contaminants — ozone, sulfur dioxide, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen oxide, particulates and other chemicals.

Few parts of the range have been spared. During the summer, west-facing foothills and canyons are immersed in great ashen clouds of pollution. In the winter, once sparkling skies are smudged with yellow, brown and gray — the signature of too many woodstoves, automobiles and people in the mountains.

TUESDAY: The Sierra Nevada forest is dying. Logging is the most visible and controversial agent at work in the Sierra. But air pollution, drought and insects are inflicting great damage, too. And there is one other problem — more subtle than the rest — causing enormous harm: fire suppression.

Like soldiers in a siege, Sierra trees are falling — and falling fast. The battlegrounds are many: North Mountain, Duncan Canyon, Black Mountain, Red Clover Creek. In its toughest hour, the Sierra Nevada forest can find little mercy.

WEDNESDAY: Along the back roads of the Sierra Nevada is a battered and bleeding land, places where trees, grass and other vegetation have been peeled away and soil is washing into mountain streams at staggering rates.

The problem draws little attention, though, partly because gullies — unlike spotted owls — are not very glamorous. The Bee's investigation found that damage to soil and streams is perhaps the most serious and overlooked problem in the Sierra Nevada, one that threatens the essence of the range and the lifeblood of California — mountain watersheds.

THURSDAY: The Sierra Nevada, one of the world's great mountain ranges, is slowly dying — and no one seems able to help it.

Once majestic skies are filled with pollution. An emerald forest is sick and brown. Soil is washing away. Streams are lined with mud. People are moving in — and wildlife is moving out.

Today, though, things are starting to change. Concern is growing, rumbling like a summer thunderstorm along the Sierra crest. You can hear it in mountain towns from Quincy to Camp Nelson, over campfires along the John Muir Trail, even in some quarters of the U.S. Forest Service.

As habitat vanishes, so does wildlife

By Tom Knudson
Bee Sierra Bureau

NEVADA CITY — Every autumn, the ritual begins. Somewhere in the high country, a deer takes a step, then another and another.

Soon, mule deer throughout the Sierra Nevada are on the move, drifting downhill, where instinct tells them they will find food, safety and shelter.

These days they are more likely to find trouble.

"We get calls about deer caught in rope swings, deer injured on fences, deer limping around subdivisions," said Jeff Finn, a California Department of Fish and Game biologist.

"Some people want us to round them up and take them away," he said. "We can't do that. There's no place to take them."

Finn's story is not unusual. Throughout the Sierra — a land once rich in wildlife — mule deer and many other creatures are being pushed, shoved, squeezed and subdivided into oblivion.

The story is a familiar one: The grizzly bear — whose figure adorns the California state flag — was exterminated from the Sierra long ago. Within the past decade, the California condor also vanished from the mountains. Today only a handful survive, all in captivity.

These days, a much broader range of wildlife is in danger. The common loon no longer nests in the high country. The wolverine is so rare few people ever see one. The willow flycatcher is disappearing. The great gray owl is almost gone. And the foothill yellow-legged frog — common until recently — is extinct in the southern Sierra.

"The need to act is urgent," said a 1990 California Policy Seminar report on biodiversity in California. The report, assembled by a joint group of state and University of California officials, went on to say:

"If we do not take remedial actions, it is likely that within decades — not centuries — the habitat destruction we are causing will lead to a massive wave of extinctions."

Each species has its own sad story of decline. But most have one thing in common: They are imperiled by mankind.

"Every time I go into the mountains, it's like writing an obituary for wildlife," said Susan Sanders, a wildlife biologist and private consultant based in Woodland.

"When you talk about development in the mountains, there is almost never anything good happening to wildlife. Wildlife always loses out."

California has seen this kind of thing before. Since the 19th century, the state has lost 80 percent of its coastal wetlands, 94 percent of its interior wetlands and 99 percent of its valley grasslands. Now the push is on in the Sierra.

■ In Yuba County, nearly all winter range for mule deer has been zoned for residential development. Already, deer have disappeared from many parts of the county.

■ In Fresno County, the North Kings deer herd has dropped from 17,000 animals in 1950 to around 1,900 today — due largely to the destruction of winter range by development, roads and reservoirs.

■ Throughout the Sierra, more than 2,000 miles of trout streams have been damaged by livestock grazing, water projects and mining.

Often, government is itself an enemy of wildlife. In recent years, county governments have paid more attention to the needs of developers than wildlife. At the federal level, the Forest Service traditionally has put far more resources toward harvesting timber than protecting fish and wildlife, but top officials now say that is changing.

Science has not led the way, either. Across the range, data about wildlife — especially non-game species — is often scarce. And the studies that do exist tend to be highly technical and of little interest to the public.

As biologist Dean Carrier put it in a paper published by the Western Section of the Wildlife Society:

"We currently know the mean deviation of the eggshell thickness of each species, the organochlorine levels in the kidney fat of western kestrels and other life history data, ad infinitum."

"What we are deficient in," said Carrier, who recently retired from

Sierra's vanishing wildlife

Foothill yellow-legged frog



Gray, brown, reddish or olive above, often spotted with yellow on underside of hind legs onto lower abdomen
SIZE: 1.5 - 2.5 inches
HABITAT: Rivers and streams of woodland, chaparral and forest
STATUS IN SIERRA: Extinct in southern Sierra

Today, another Sierra amphibian — the mountain yellow-legged frog — may be in trouble. "It's an animal that occurs in virtually every fishless pond in the high Sierra, from Tahoe to Sequoia," Graber said. "There are already a large number of bodies of water where we don't find it."

The foothill yellow-legged frog is now officially extinct in Sequoia — the first recorded extinction of a vertebrate animal since the grizzly bear disappeared in 1922.

The cause of the frog's demise remains uncertain, but one leading suspect is air pollution.

"Mysterious things are happening to frogs — they're disappearing all over the world," said Graber. "And we really don't know why."

Common loon

In 1974, Richard Stallcup saw something remarkable: a pair of common loons nesting at Twin Lakes in the eastern Sierra.

No one has seen such a thing since.

"They were so beautiful," said Stallcup, an amateur

naturalist. "Their calls were so haunting — they chilled your

soul."

Known widely

as a bird of the

arctic wilderness,

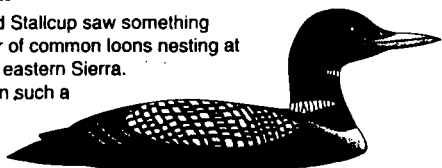
the common loon still passes through the Sierra on its annual migrations. But it no longer nests here.

"Loons, in particular, seem to be very susceptible to human disturbance — things like motorboats, even backpackers," said Paul Kelly, a non-game biologist with the California Department of Fish and Game.

"They will abandon their nests when they are disturbed."

And therein may lie a warning.

"The loss of the loon," said Kelly, "is an indication that some fairly subtle changes took place 10 to 20 years ago that may foretell more dramatic changes to come for the Sierra."



In summer, it makes raspy calls, heard yodeling and at night a ho-ho-ho sound
SIZE: 28 - 36 inches
HABITAT: Conifer lakes, tundra ponds (summer); open lakes, bays, etc.
STATUS IN SIERRA: No longer breeds in Sierra

The Sierra Nevada is no longer a refuge for wildlife. Throughout the range, logging, road building, urban development, water impoundment projects, air pollution and tourism are exacting a heavy toll on mountain wildlife. The common loon no longer nests in the mountains. Nor does the harlequin duck. The great gray owl is hanging on — but barely. And the foothill yellow-legged frog already is gone.

Here's how some people describe the situation:

Harlequin duck

Ted Beedy was excited.

There, bobbing on the south fork of the Merced River, was one of the rarest birds in the Sierra: a harlequin duck. Then, a few seconds later, the bird was gone.

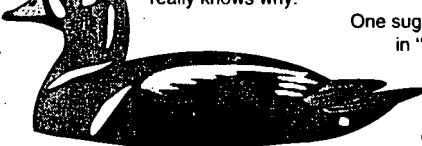
That was in 1977 — and no one apparently has seen one since. At least not in the Sierra.

"It was so unusual I went back to look the next day," said Beedy, an ornithologist and author of "Discovering Sierra Birds."

"But I never did see her again."

Named for Shakespeare's brightly colored clowns, the harlequin duck used to nest in the central Sierra and is still spotted occasionally along the California coast.

"They just kind of winked out," said Beedy. "Nobody really knows why."



Slate colored with chestnut sides and odd sized white patches and spots
SIZE: 18 inches
HABITAT: Turbulent mountain streams in summer; rocky coastal water in winter
STATUS IN SIERRA: Not seen since 1977

One suggestion was put forth in "Birds of Special Concern in California," a publication of the California Department of Fish and Game: "Human disturbance along streams used for breeding and perhaps damming of rivers seem to be the only plausible reasons for the decline."

Great gray owl

Every summer, Jon Winter makes a trip to the Sierra Nevada to see an old friend — the great gray owl.

"I've never got over the reverence I have for that bird," said Winter, who has studied the owl since 1968. "I'm still awestruck — I really am."

Once, the majestic great gray owl drifted like a shadow over much of the Sierra. Today, logging and livestock grazing on national forests have forced it into a great retreat.

These days, only about 50 owls remain — about half of them in Yosemite National Park — making it the rarest owl in the mountains.

"I think the initial losses probably came from cutting down old snags with timber sales," said Winter, a senior wildlife biologist for a Bay Area consulting firm. "That's probably what eliminated the nest sites."

"The thing I think that's affecting them now is grazing."

"The owl feeds almost entirely in meadows. But when you graze a meadow down to the point where there's no cover, the owls' prey — the little meadow mice — will leave."

"There's no reason why the rest of the Sierra shouldn't support them," he said. "But it's going to take many, many years — and it will happen only if we don't do any more damage to our forests and meadows."

Source: Tom Knudson/Bee Sierra Bureau, The Audubon Society Master Guide to Birding, Peterson Field Guides: Western Birds, Reptiles and Amphibians



Largest of all owls, it has very large round facial disks, yellow eyes and white "bow tie" on throat
SIZE: 24 - 33 inches
HABITAT: Dense conifer forests, adjacent meadows and bogs
STATUS IN SIERRA: Endangered

the Forest Service, "is the translation of biological information into management actions that may allow fish and wildlife to coexist with other resource uses."

"We are failing to bridge the gap between technology and reality."

Still, there is hope.

Today, wildlife management is changing. Twenty years ago, it focused mostly on hunting and fishing. Now, the focal lens is widening. New concepts such as biodiversity and wildlife "corridors" are beginning to emerge, offering one of the last chances to save Sierra wildlife.

But to date, success stories are rare. Much more common are tales of habitat — and wildlife — lost.

A bulldozer chugged and snorted through the mountain meadow east of Fresno in 1987 — ripping up clump after clump of willow trees to make more pasture for cattle.

Today, the cows are happy but the willow flycatcher — one of the rarest birds in the mountains — is gone from the meadow.

"It pulled the heart out of me," said Bradley Valentine, a biologist who

arrived at Dinkey Meadows one day after the bulldozer's march.

Once common throughout much of the state, the willow flycatcher has nearly vanished as its nesting grounds — streams and meadows — have been converted to other uses. Today, only about 200 nesting pairs remain, all in the Sierra.

Last year, the California Department of Fish and Game warned that the end may be near: It declared the willow flycatcher an endangered species in California.

"These meadows are the last remnants of habitat keeping the bird alive," Valentine said.

Such stories can be found throughout the Sierra, where ranchers' livestock are wallowing into streams and meadows, upsetting mountain ecosystems, causing serious soil erosion and hurting everything from aquatic insects to rainbow trout.

It is one of the oldest problems in the mountains, one that naturalist John Muir himself was deeply concerned about. "It is almost impossible to conceive of a devastation more universal than is produced by sheep," he wrote in 1873.

"Soil is cut up and beaten to loose dust and every herbaceous plant is killed. Trees and bushes escape, but they appear to stand in a desert very different from the forest floor. Nineteen-tenths of the whole surface of the Sierra has been swept up by the scourge. It demands legislative interference."

The government almost invites abuse. The prices it charges for livestock grazing — 39 cents a month for a sheep and \$1.95 a month for a cow — are low. The cost of controlling livestock with fences is high.

"It's almost a crime," said Lyle Steffen, a U.S. Soil Conservation Service geologist. "Once the trees along the bank are gone, the creek starts to erode and widen and deepen, causing a lot of other problems."

In the Plumas National Forest, cattle often wander outside their allotted territory, causing enormous damage. In 1990, building contractor Loren Kingdon spotted cows in the Plumas in February, long after the grazing season was over.

"They abuse the land when they're left that late," he said. "It's hard on the riparian areas, and everything

else."

The next day he called the Forest Service. "I thought I was doing someone a favor," he said. "But they said, 'Well, it's not our problem, it's the permittee's problem.'"

"There were cows up there again this past Christmas. This kind of thing goes on all the time."

Two years ago, the Department of Fish and Game's Finn stood before a group of homeowners at Lake of the Pines, a Sierra subdivision in Nevada County.

The homeowners were upset. Mule deer were trampling through yards, gobbling up gardens, even bounding across porches. The solution, they said, was to round up the deer and haul them away.

Finn did not have good news. "I told them the problem was theirs," he said, "and that maybe they shouldn't have put the subdivision there. There were over 200 people who wanted my head because we wouldn't do anything."

Today, the mule deer, one of the most familiar animals in the West, is in trouble. Across the Sierra, popula-

tions are tumbling, and one reason is places like Lake of the Pines.

Scientists call the problem loss of habitat — too many highways, shopping malls, power lines, reservoirs, ski areas, subdivisions — in short, too many people.

As Finn said: "Mule deer are really tied to their migration corridors. A doe will go to the same place every summer to have her fawn and she will go to the same place every winter. Absolutely. There is no variation."

"Now, if an animal has winter and summer range but has no way to get to and fro, it's in deep trouble. And that happens very often."

"Nevada County is a great example. Most of the west end of the county has been subdivided to the extent that you can't retain significant animal movement. Most of it has been lost. It's beyond restoration."

Too often, Finn sees deer in trouble. "There are highways. There's harassment by dogs. There's mechanical injury from fences, drainage canals. You name it, deer die in it."

Other factors are at work, too, including government mismanagement, according to a recent U.S. General Accounting Office report.

The March 1991 report sharply criticized the U.S. Forest Service for putting a higher priority on timber harvesting than wildlife.

"Wildlife protection and enhancement receives only a small percentage of available staffing and funding," the GAO report said. "In recent years, wildlife programs have received between 3 percent and 7 percent of Forest Service funding, compared with up to 37 percent for timber programs."

"No single reason fully explains the limited attention. A key factor, however, centers around traditional agency consumptive uses of land."

The report took aim at another key issue: a basic lack of information about wildlife on national forest lands. "This limitation," the GAO said, prevents Forest Service managers from making "an overall judgment on the health of wildlife."

But David Jay, a deputy regional forester for the Forest Service in California, disagrees.

"Wildlife has not caught the short shrift. Wildlife values and habitat will continue to improve."

"Over the past 15 years, we've had a major infusion of dollars. The staffing of wildlife and fisheries biologists has grown by several hundred percent. So we have much better data."

The GAO also noted the Forest Service is undergoing a process of change. But it added: "More experience is needed to determine how successful this effort will be."

Today, an idea has emerged that may help recapture some of the lost glory: the wildlife corridor.

At its simplest, a wildlife corridor is a pathway for animals — patches of forest, meadow and river valley strung together like pearls on a string, giving wildlife room to move.

It is also a new concept and one that runs against the grain of traditional wildlife biology.

"Biologists have always tended to look for the prime places — where there are lots of species and it's real nice — and say 'This is what we want to save,'" said biologist Carrier.

"But now, with urbanization, we may find that we've got to maintain a corridor between the northern and southern Sierra. And that corridor may go right through some grubby old digger pine — lousy stuff that's a dime a dozen everywhere else. ... And that's going to be difficult because how do you get somebody to contribute money for an old piece of digger pine?"

Another problem: Politics.

"It's so political it's ridiculous," Finn said. "Money drives this stuff. That's a cold, hard fact."

In the central Sierra, Finn has seen development march through the foothills with little regard for wildlife.

"I think that in any area where people want to live, it's only a matter of time before the developers win," he said.

"Once habitat is gone, it's gone forever," said Ray Butler, chairman of the Nevada County Fish and Wildlife Commission. "If you look 20 to 50 years down the road, deer in the foothills will be a rarity, no doubt about it."



Wolverine

Has dark, shaggy hair with tan markings; one of the most powerful animals for its size

SIZE: 2.5 feet

HABITAT: High mountains, near timberline
STATUS IN CALIFORNIA: Endangered

By Tom Knudson
Bee Sierra Bureau

Step by step, Kerry Heise picked his way down the steep, rocky shoulder of Mount Stanford in Sequoia National Park.

With his day's work done, Heise — a seasonal botanist for the park — was looking forward to a warm dinner at camp on the Chagopa Plateau, a place so remote and beautiful it is known as The Womb of the Sierra.

Then, at 6:30 p.m. on Aug. 9, 1987, he spotted it.

"At first I thought it was a black bear," Heise said. "It was running real fast. But then it stopped and I got a real good look at it. That's when I yelled to my colleagues, 'Look over there — it's a wolverine!'"

A few moments later, the wolverine was on

the run again. Like a shadow, it darted into a rock outcrop — and was gone.

And there you have it: A glimpse at one of the rarest animals in the Sierra Nevada — and a mystery.

The wolverine, a solitary, ferocious member of the weasel family that lives mostly in remote timberline areas, is so scarce that scientists know little about it in the Sierra.

"I doubt there are more than half a dozen bona fide sightings of wolverines for the entire Sierra Nevada in one year," said David Graber, a research biologist at Sequoia National Park.

"When an animal is that rare, the ordinary rules of statistics don't apply. You can't say very much of anything."

"If you go from six sightings one year to four the next, does that mean the population has dropped by a third? I doubt it. For all we know, it could have gone up. On the other

hand, it could be down to one animal that was seen four times."

Rare though it is, the wolverine is one small part of a large puzzle called biodiversity. Years ago, few people worried about animals most people never see. Now that is changing.

"Variety is not only the spice of life, it is the stuff of life," wrote Robert Bowman, a professor of biology at San Francisco State University, in a book about threatened and endangered animals in California.

"The truth of the matter is all species are of value in their own particular ways, and we must allow all species to fill their evolutionarily appointed places in nature."

The wolverine always has been rare. But today, with more summer homes, ski areas and logging trucks in the mountains, many scientists are concerned that this skittish, secretive animal could vanish completely.

The only thing rarer than a wolverine, it seems, is a study of one. "Too rare to study — literally," Graber said.

"We paid a guy about 15 years ago to ski the Sierra between Yosemite and Sequoia looking for wolverines. I remember he had no sightings and maybe a couple of track records. That's it."

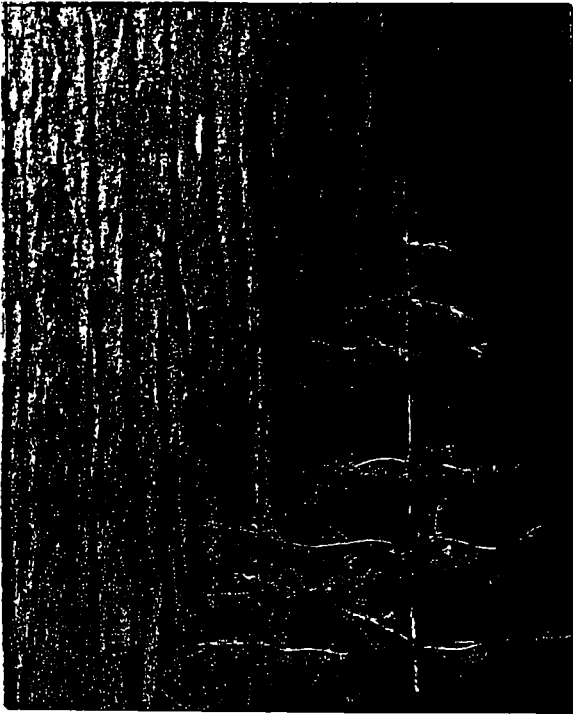
This year, after a long hiatus, the search for the wolverine will resume.

Recently, the California Department of Fish and Game committed \$35,000 to the University of California, Berkeley, for wolverine research in the Sierra this summer — sending a ripple of excitement through the world of wildlife biologists.

"To me, life would be impoverished if we were to lose the wolverine," Graber said. "It's a tremendous delight just to know they're out there, even if I never see one."

Secretive, ferocious and rare — wolverine proves to be tough study

Two views of the noble giant sequoia forest of the southern Sierra Nevada. Below, a giant sequoia towers over one of its younger rivals. At right, the aftermath of "grove enhancement" logging, a policy crafted by the Sequoia National Forest.



Conservationist Martin Litton, above, is calling for federal legislation that would permanently halt logging in the giant sequoia forest.

FOREST

Logging, smog, drought k'ling towering forests

Third of five parts

By Tom Knudson
Bee Sierra Bureau
© 1991 The Sacramento Bee

SIERRAVILLE, Sierra Co. — Rounding a bend on a back-country road in the Tahoe National Forest, Ray Butler tells a story.

"This used to be one of my favorite places," he said. "One winter I even saw a pine martin back here. It was one of the most exciting things I've ever seen."

But on this day, Butler's paradise is gone. Ahead lies a sea of stumps, dead brush and bare ground — the aftermath of one of hundreds of clear cuts taking place in the national forests of the Sierra Nevada.

"They've absolutely trashed it," said Butler, chairman of the Nevada County Fish and Wildlife Commission.

Butler's feelings are not unusual. They are, in fact, a kind of echo one hears in the mountains these days — an elegy for the passing of a friend.

Today, the Sierra Nevada forest is dying. "The Sierra Nevada is a treasure to many millions of people," said Julie McDonald, an attorney for the Sierra Club Legal Defense Fund. "And if something isn't done, it's going to be a disaster."

Logging is the most visible and controversial agent at work in the Sierra forest. But air pollution, drought and insects are inflicting great damage, too. And there is one other problem — more subtle than the rest — causing enormous harm: fire suppression.

Like soldiers in a siege, Sierra trees are falling — and falling fast. The battlegrounds are many: North Mountain, Duncan Canyon, Black Mountain, Red Clover Creek. In its toughest

hour, the Sierra Nevada forest can find little mercy.

Here is a look at the lay of the land, the broad forces and trends swirling about the imperiled Sierra forest:

■ The U.S. Forest Service is causing much of the problem, many people contend. Unlike timber-rich northwest California, most wood cut in the Sierra comes from public land — about 60 percent in recent years compared with 28 percent for northwest California, according to timber harvest data maintained by the California Board of Equalization.

■ As the best timber disappears, more trees are being cut on marginal land, where slopes are steep and soil is poor. History gives us a warning: When farmers plowed marginal land on the Great Plains, they created a disaster called the Dust Bowl.

■ Forestry research is lagging. "Research must improve in quality and broaden its scope," said a report last year by the National Research Council, an arm of the National Academy of Sciences. "Without additional knowledge, the misuse exemplified by deforestation, destroyed productive potential and lost biological diversity will prevail."

■ As trees fall, the Sierra is changing — forever. In the Sequoia National Forest, a 1986-88 Forest Service survey found that more than half of the seedlings the agency planted had died. Often what grows back is brush — an assassin of young trees, a foot soldier of the desert.

The seedlings are no friend of the Sierra, either. Grown in nurseries, planted in straight rows, these young trees are not future forests. They are tree farms — cornfields of pine. And they are taking root throughout the Sierra, courtesy of the Forest Service.

■ The Forest Service is trying to change. Words like biodiversity and "new perspectives" are creeping into its vocabulary. But timber still runs the show. Today, even the Forest Service acknowledges that in some areas of the Sierra, forests are falling faster than nature can replace them.

■ And finally, the Sierra forest is sick. Throughout the range, a record 6 billion board-feet of timber — enough to build more than a half-million homes — is dead or dying, a victim of drought, insects, air pollution and fire suppression. And as it dies, the Sierra forest is seeing a new, controversial type of timber harvesting: salvage logging.

Despite the problems, the Forest Service's top managers maintain an upbeat tone.

"My view is that, looking at the past, we managed this tremendous demand for products pretty well or the forests wouldn't be in the condition they are now," said David Jay, deputy regional forester for the Forest Service in California.

"Look at the millions of dollars we have passed back to the counties as their share of the forest receipts, the construction of campgrounds, the designation of wilderness."

Turning Sierra trees into timber — and dollars — is big business for the Forest Service. In 1989, the agency received about \$109 million for wood cut from the Sierra forest — 25 percent of which was funneled back to county governments from where it was cut.

Timber is also the Forest Service's biggest single source of income, accounting for about 85 percent of its revenues in the Sierra. The wood is sold to a variety of outlets, from major logging companies to local mills and contractors.

"We've done the best job we could, given the resources we had. Now I see us in another period of evolution or change in the management of these forests," Jay said.

But even in the most hallowed spots, the Sierra forest is not safe.

Late in the afternoon, the sun angles through the southern Sierra forest, a mandala of yellow, gold, green, lemon and amber.

Half-hidden by shadow, conservationist Martin Litton holds the end of a 100-foot tape measure looped around a giant sequoia. Ten feet ... 35 ... 60 ... 75 ... the tape stops just in time: This tree is 95 feet in circumference.

In all the world, no tree is more enormous than the giant sequoia. Or more special.

Like Half Dome and Lake Tahoe, it is a part of the very signature of these mountains — a tree so special that Congress created Sequoia National Park in its honor in 1890.

But as Litton learned recently, the sequoia is threatened.

In the 1980s, some of the world's last unprotected sequoia groves were toppled by logging crews and sent to a sawmill — under a policy crafted by the Sequoia National Forest.

To timber planners, the cutting seemed a good idea. It would reduce the threat of fire, make way for a new forest and leave the largest sequoias unharmed. They even came up with a name for their work: "grove enhancement."

Up close, though, grove enhancement looks more like grove destruction.

A firsthand look is available on Forest Service Road 21S12 near Black Mountain, south of Camp Nelson in Tulare County. For a few miles, the forest is lush. Near Deadman Creek, though, lies a wasteland of stumps, blackened logs and torn-up earth.

All that remains standing are three giant sequoias, huddled together like mourners at a funeral.

"Just look at this destruction," said Litton, 74, who is calling for the creation of a "Sequoia National Preserve," which would protect the area from logging. "How long is it going to be before this looks like a forest again — if ever?"

Writer and naturalist John Muir was one of the first to notice something important about the Sierra. "The sun is hot enough for palms," he wrote. "Yet the snow round the arctic gardens is plainly visible and between lie specimen zones of all the principal climates of the globe."

Today, we marvel at granite peaks and sapphire lakes, but all too often we miss another Sierra wonder: Its diversity of trees and plants.

In the world of botany, there is no place like the Sierra. The range is a kind of natural arboretum — a melting pot of plants from Mexico, the Pacific Northwest, the Rocky Mountains, the Canadian arctic and the Great Basin desert.

One of the greatest tributes to the Sierra forest was delivered more than a century ago by the eminent botanist Asa Gray. Speaking at Harvard in 1878, Gray said:

"The western (slopes of the Sierra Nevada) bear in some respects the noblest and most remarkable forest of the world — remarkable even for the number of species of evergreen trees occupying a comparatively narrow area, but especially for their wonderful development in size and altitude."

Today, a harsh sound is rolling through this storybook forest. It is a deep growl and a metallic whine — the ballad of the bulldozer and the chain saw. It is the sound of a clear cut.

Most people believe clear cutting is something that happens in Oregon, Washington and northwest California — but not in the Sierra. Yet every year the Forest Service issues contracts to clear cut vast stands of mixed-conifer Sierra forest — including some of the last stands of virgin timber in the mountains.

The amount of clear cutting has jumped dramatically in recent years. In the Tahoe National Forest, for example, about 700 acres were harvested through clear cutting and related methods in 1978. During the 1980s, the amount jumped to about 4,000 acres a year, but it is expected to decline over the next few years.

But don't expect to see clear cuts on a drive through the mountains this summer. The Forest Service has a policy of keeping them out of view of highways, campgrounds, lakes and other places where people gather.

The agency says the policy — which it calls a "visual management system" — is for the public benefit. But others feel differently.

"I call it concealing the truth," said Litton. "It's a blindfold. They're trying to fool the public."

But the Forest Service said that is not the



case.

"The truth is there for anybody to see if they walk in the forest," said Matt Mathes, a spokesman for the Forest Service in California.

"We're just trying to maintain some sort of visual standard for the vast bulk of people who are going to see the area, the scenic drivers from the highway, while still providing wood."

"We are still mandated to cut trees. We're just trying to do what we have to do — while minimizing the visual impacts."

Turn onto a back-country road, round a few bends, cross a ridge or two and — likely as not — a surprise will be in store.

There will be an enormous splotch of barren, burned and bulldozed earth — the aftermath of a clear cut.

Today, clear cutting has transformed large parts of the Sierra forest into a kind of war zone. Here are some of the cries of the battle:

■ Marilyn West, a 47-year-old grandmother from Camp Nelson: "We've got all this beautiful country that people are starting to discover — they're moving in from Fresno and Bakersfield and L.A. And what is the Forest Service doing? They're clear cutting it as fast as they can."

■ Jay Probasco, district ranger, Sequoia National Forest: "Clear cuts, in the eyes of

many, are ugly. However, are they that different from the plowed fields of farm lands or areas leveled for subdivisions?" Clear cuts have a lot less impact than cities, roads, landfills and chemical dumps."

■ Frank Lewis, former Army tank commander and president of the Tulare County Audubon Society: "In Vietnam, there was not a lot left after a B-52 air strike. You go into the Sierra forest after a clear cut and it looks the same way."

■ Jim Boynton, supervisor, Sierra National Forest: "Clear cutting won't be the demise of the Sierra forests, but it may well be the demise of the U.S. Forest Service. People just find it visually unattractive. For us to ignore that is completely out of line."

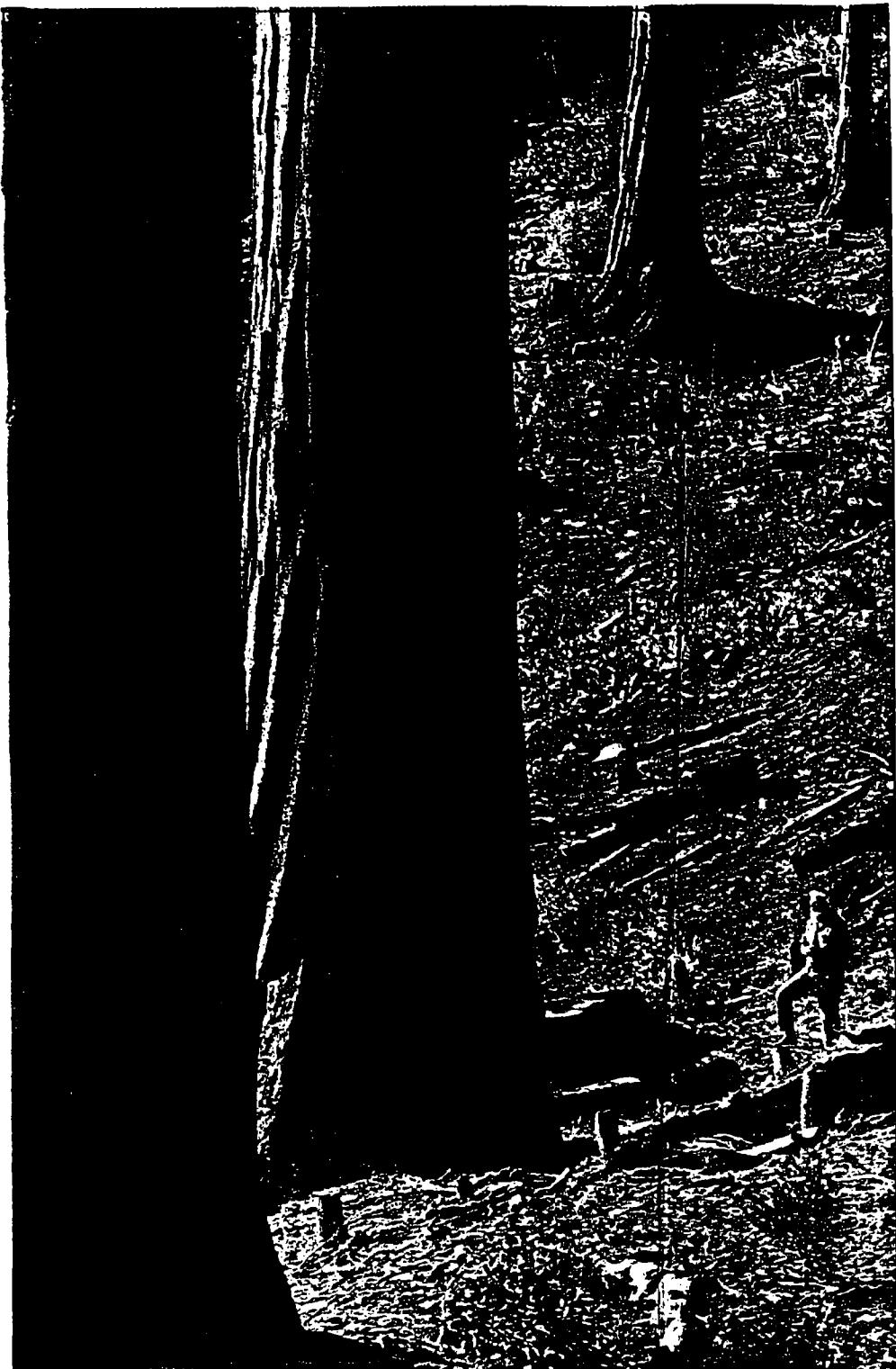
Forest Service managers say there are many good reasons for clear cutting.

"Basically, a clear cut is an emanation of nature," said Ed Whitmore, chief of timber planning for the Forest Service in California.

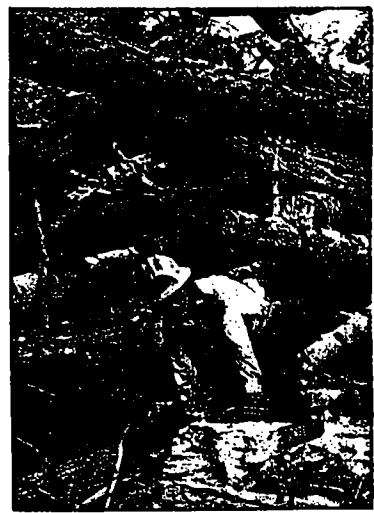
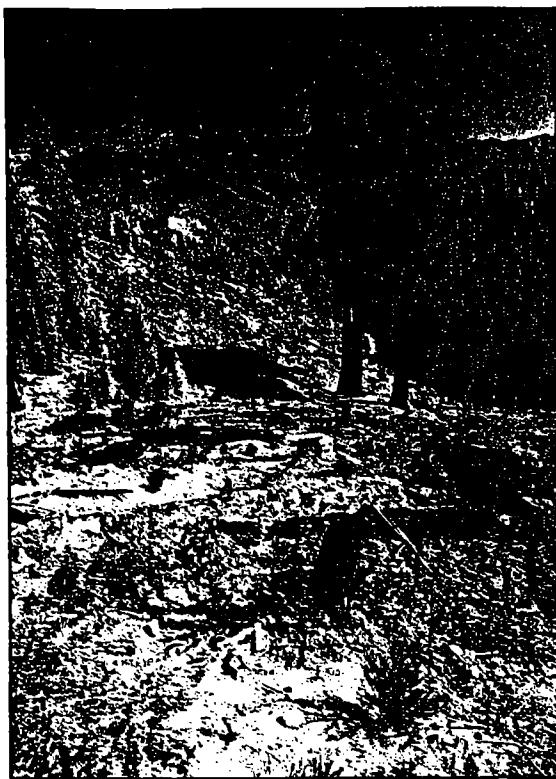
Pointing out the effects of the Mount St. Helens eruption in 1980, he said, "You can't get much bigger clear cuts than that."

"And despite the total devastation, the area has come back without almost any help from man. Salmon are back in the streams, the elk are back and the natural process of plant succession is occurring."

But many conservationists say clear cutting is a disaster, especially on the steep slopes and erosive soils of the Sierra.



a forest. "The giant sequoias are monuments to God," he says.



A logger working in the Tahoe National Forest trims off branches and cuts trunks to the proper length for loading onto a logging truck.



John Preschutti stands atop unsaleable logs left over from logging in the Plumas National Forest. Preschutti and other conservationists say such piles are wasteful. But the Forest Service says they are a necessary part of logging.

intense as we pick up more dead trees.

"We know that, in an effort to salvage timber, we're taking more than what the forest can sustain — in the short run. We're going to have to adjust that in the near future."

Muir once wrote: "The inviting openness of the Sierra woods is one of their most distinguishing characteristics. The trees stand apart in groves, enabling one to find a way nearly everywhere. One would experience but little difficulty in riding on horseback through the successive belts all the way up to the storm-beaten fringes of the icy peaks."

Today, Muir's words seem like fiction.

No longer is the Sierra forest inviting and open. Today, it is a tangled thicket, a convention of brush and bramble.

"You wouldn't want to go riding through it at full gallop today," said plant ecologist Bob Holland, who most recently worked for the state Department of Fish and Game. "Not unless you've got a dumb horse. It's too dense."

The transformation of the Sierra woods — from stately forest to impenetrable thicket — is one of the most wide-ranging and serious problems in the mountains.

Like the controversy over logging, this transformation is rooted in policies of the U.S. Forest Service. The problem, though, is not chain saws. It is fire hoses.

Once, fire swept through the mountains every few years, cleaning out underbrush but sparing older trees. Fire was a gardener that kept the woods sunny and open.

Then Smokey the Bear arrived — and the forests have not been the same since.

"The culprit is fire suppression," Holland contends.

"It used to be that, with fire running through an area every three to five years, shrubs never had a chance to grow up and form closed stands. Now if you go to the Auburn Dam site, the whole south facing slope is solid brush.

"Up higher, in the mixed-conifer zone, there's another problem. There's all this white fir. You'll find hundreds of them per acre, shading the ground so nothing can grow."

Today, fire suppression is one of the suspects in the massive tree die-off in the Sierra. Throughout the range, 6 billion board-feet of timber are dead or dying — in some places, one of every three trees is dead.

"We've found that if you look at the soil in some of our long unburned sequoia groves, it's almost sterile," said Tom Nichols, an environmental scientist with Sequoia National Park.

"It's the ash from fire that revitalizes the soil."

But many others believe the biggest problem is drought.

"I don't think this cycle can be blamed on fire suppression," said Gerrie Kopeck, acting fire prevention specialist for the Forest Service in California.

Nichols, though, said that once fire is suppressed, problems ricochet through the forest ecosystem.

"I suspect that one reason the drought is so bad is not because you have a drought, but because you have a drought plus an overloaded, choked forest, full of brush and young trees," he said.

"The trees that are most likely to die are not the young ones, but the larger adults. They're the senior citizens whose vigor is already declining.

"So you begin to see the old trees die, and as that happens, you begin to lose your seed source.

"Without fire, the effects of drought — and the effects of air pollution — are certainly enhanced, adding to the decline of the forest as a whole."



At left, a common sight in the Sierra Nevada: a logging truck and its valuable cargo. Above, a small patch of trees has been spared in a clear cut in the Sequoia National Forest to provide habitat for birds and mammals.

Bee photos by Jay Mather

"Mount St. Helens was an isolated incident. It didn't happen everywhere, all at once, like what's happening in the Sierra," said Steve Beckwith, co-director of the Sierran Biodiversity Project, a grass-roots California conservation group.

"At Mount St. Helens, most of the old forest remained. In the Sierra, they're removing the trees, burning the soil and piling up the unmerchantable material. Basically, they're extracting the future productivity from the site."

Today, under intense pressure, the Forest Service says it is backing away from clear cutting in the Sierra.

"We want to move toward a more natural way of management," said Ron Stewart, the agency's new regional director in California. That is the idea behind our new environmental agenda."

Still, skepticism runs high. "The Forest Service tells you what you want to hear," said Lewis, "and then they go out and do what they please."

The Forest Service was not always so timber-hungry. A half-century ago, most of the nation's wood came from private land. But as stocks dwindled, the timber industry came knocking on the door of the national forests.

And the Forest Service responded — providing a remarkable volume of wood

over the past 40 years.

"We have been forced — since World War II — into being a company that provides a service to private industry and government coffers," said Dean Carrier, a wildlife biologist who recently resigned after two decades with the Forest Service.

"This may sound corny, but we should be the stewards of the land — not just a company that meets timber targets. The public land is more than just trees — and it's more than today. That's what we need to start looking at."

Since 1980, the amount of wood cut in the Sierra — on public and private land — has jumped 67 percent: from 959 million board-feet to 1.6 billion in 1989, state tax figures show.

Carrier said that new regional director Stewart — who is oriented more toward research than timber planning — may help turn the corner.

"I think Ron is going to be a catalyst. But the proof of the pudding will be if he says, 'The targets are too high and we're not going to make them.' Then we'll see how the political situation in Washington handles that."

The agency's annual timber targets are set by Congress. But today, after decades of heavy logging, there's a problem: The best stands of timber are disappearing.

Still, the agency keeps cutting. And many

feel that is a prescription for disaster.

"Timber harvest activities have pushed further into marginal areas — those areas with steeper slopes and highly erodible and unstable soils," said a 1988 policy paper prepared for the U.S. Environmental Protection Agency.

"The long-term effects will impoverish the soil, ruin fisheries and reservoirs and ultimately ruin many productive forest and water resources in California."

But Forest Service timber managers do not foresee problems.

"The perception is that if it's got trees on it, we're going to cut it, and that simply is not the case," said Forest Service timber management chief Whitmore at regional headquarters in San Francisco.

"What you call fragile and what I call fragile could be two different things," he said.

In the field, one hears a different story. "It's sad that my own agency approved all this," said Ron Medel, a fisheries biologist for the Tahoe National Forest.

As he spoke, Medel looked out across a steep hillside, stripped of timber and gouged by gullies, the result of a 1990 clear cut that sent so much soil and debris washing into a mountain stream that it brought a reprimand from state water quality experts.

"Oh my God — look at this," Medel said. "Here's an active area of erosion. It's

bringing all this crap into the creek. It's going to be a long time before this area recovers."

And there is another surge of logging under way — salvage logging — which accounts for about half of the timber harvested in the Sierra. It is aimed not at live trees, but at vast amounts of dead and dying timber.

"By having the timber purchaser remove this material, and get a product out of it, that will keep us from having to go in and clean it up when there's no value to it — at huge public expense — to fire-proof the area," Whitmore said.

But salvage sales also are highly controversial. Often, they cause serious erosion and watershed damage. In some cases, live trees are taken. And some salvage sales actually lose money for the Forest Service.

Determining whether any timber sale earns — or loses — money is a subject of enormous controversy in the Sierra and across the West.

Often, the Forest Service puts its accounting information in a rosy light. One 1989 Tahoe accounting report, for example, lists the "positive effects" of timber sales at \$21.6 million and the "negative effects" — including impacts to soil, wildlife and watersheds — at zero.

Even many Forest Service employees are skeptical.

"I don't know how they got those numbers," said Jeanne Masquelier, resources officer for the Tahoe National Forest. "It gets into — what do we call it? — phoney-baloney money."

Salvage sales, by their very nature, are among the most economically risky.

"We're not giving the wood away," Whitmore said. "But unfortunately, when you put a lot of something dead on the market, it doesn't generate a premium price."

No matter how much money the sales bring, it's no consolation to Bob Hackmack, who saw one of his most treasured places in the Sierra — North Mountain — transformed by salvage logging in 1989.

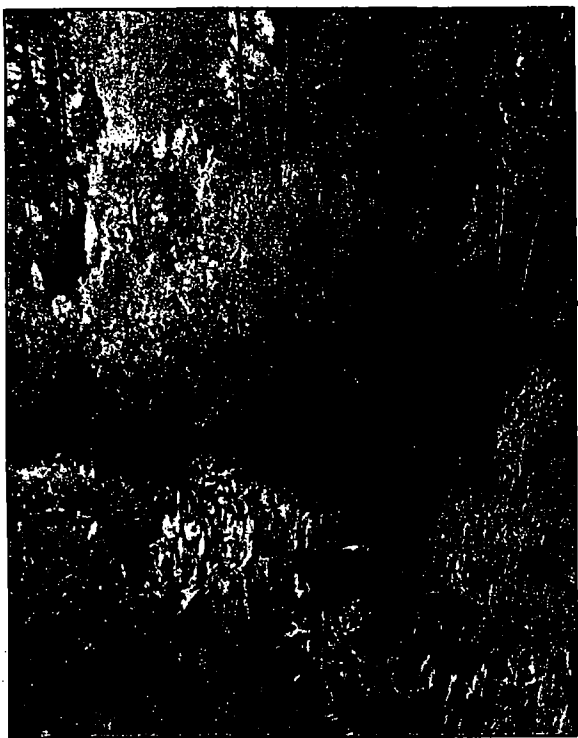
North Mountain stands along the western border of Yosemite National Park — a region of stately old-growth timber, including enormous and stately sugar pines.

"It was really a cathedral-like place," said Hackmack, a Modesto chemical engineer. "It was even nicer than the part in Yosemite."

Before the sale, Stanislaus National Forest officials said no healthy trees would be cut. But shortly after logging started, 31,000 board-feet of timber from live trees came crashing to the ground — a mistake by the logging contractor, the Forest Service said.

"It shouldn't have happened," Hackmack said. "You win some and lose some, but the losses are never easy to take."

Such feelings are not unusual. "There's a lot of concern, we're very cognizant of that," said Jay, the deputy regional forester. "And it's going to get more



Autumn colors transform Peppermint Creek in the Sequoia National Forest, left, into a forested quilt of gold, yellow and amber. In stark contrast, years of overgrazing have turned once-sparkling Lone Rock Creek in Plumas County, below, into a soil-choked gully.



SOIL

Erosion washes away precious watersheds

Fourth of five parts

By Tom Knudson
Bee Sierra Bureau
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AYLORSVILLE, Plumas Co. — All weekend long, the phone at Mike Kossow's home would not stop ringing.

"People were real concerned," said Kossow, a hydrologic technician with the Plumas National Forest. "They had never seen anything like it. Indian Creek was just solid mud."

On Monday, Kossow hopped in a plane to investigate, following a winding trail of muddy water high into the mountains.

Thirty miles upstream, along a ridge where Indian Creek is born, he found a disaster — a moonscape of eroded land and denuded forest that looked more like the highlands of Ethiopia than the Sierra Nevada.

The disaster, however, was not a random act of nature, though nature did play a role. Nor was it the work of a careless miner or rancher. The seeds of this calamity were sown by the U.S. Forest Service.

It began with a timber sale, one designed to help the agency control its archenemy: fire.

The idea was simple: Prune the forest, starve a fire. But this job along Last Chance

DAY 4

Wednesday, June 12, 1991

Creek, a tributary of Indian Creek, was more than weekend shrub trimming. Entire sections of forest were leveled, leaving the land barren and vulnerable.

Then, on the evening of July 18, 1990, disaster struck: Lightning flickered along the ridge, wind moaned through the hills and the sky let loose with 5 inches of driving rain.

Last Chance Creek didn't stand a chance. A quarter-million tons of soil crumbled like sugar off the steep slopes. Culverts filled with mud. Roads washed out. Gullies ran wild. And the champagne water of Indian Creek turned to sloppy brown gruel.

Today, the region suffers.

"Of enduring concern is the severity of soil loss (and) the initiation of dense gully networks," Ken Cawley, a zone hydrologist for the Plumas National Forest, said in an internal report obtained by The Bee through the U.S. Freedom of Information Act.

"Further accelerated erosion can be expected in the future. Chances for seedling survival have been adversely affected on several hundred acres."

The incident, while dramatic, is not unusual. Along the back roads of the Sierra Nevada is a battered and bleeding land, places where trees, grass and other vegetation have been peeled away and soil is washing into mountain streams at staggering rates.

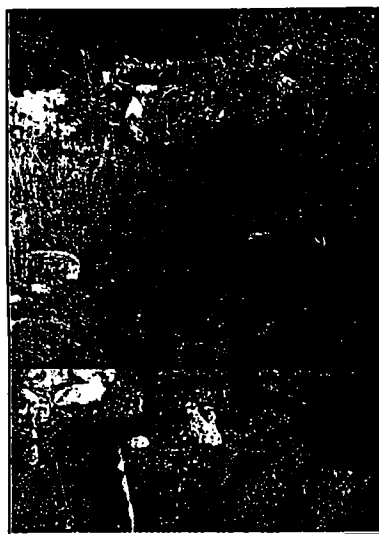
The problem draws little attention, though, — are not very glamorous.

But damage to soil and streams is perhaps the most serious and overlooked problem in the Sierra Nevada, one that threatens the essence of the range and the lifeblood of California: mountain watersheds.

The magic begins every spring with a familiar sound — the tap-tap-tap of water dripping from the snowy eaves of the Sierra. The drops turn to trickles, the trickles turn to torrents and the Sierra thunders with the sound of rushing water.

But not just any water — cold, clear mountain water, elixir of an empire. Six of every 10 gallons of water used in California — the most populous, prosperous state in America — come tumbling from the Sierra.

Today, this mountain spigot is under siege. From Kernville to Quincy, logging, road building, mining, grazing and forest fires are gouging, burning and ripping up the epidermis of the mountains, the spongelike outer layer of soil, trees and vegetative cover crucial to water quality and quantity.



Bee/Tom Knudson

Minerals from the Pioneer Pit mine are leached into the water flowing into Slate Creek in Sierra County.

Consider:

■ In the Plumas National Forest, 30 percent of the water is so fouled by erosion that it no longer meets state water quality objectives, Forest Service documents show. In some areas, erosion is so severe that bedrock is beginning to show.

■ Pacific Gas and Electric Co.'s Rock Creek Reservoir — downstream from the Plumas National Forest — is choking with mud and debris. The reservoir, in fact, is more mud than water — over half of its capacity is consumed by mud and silt.

■ Once carpets of grass and wildflowers, meadows across much of the Sierra are now partial deserts of gullies, barren, compacted ground and sagebrush, the handiwork of one of the oldest problems in the mountains — livestock grazing.

Government is doing little to make things better. The Forest Service has a tradition of putting logging and grazing ahead of watershed protection. The agency is starting to change, but slowly. Currently, about 35 percent of its budget goes to logging, while only 2 percent to 3 percent goes to soil and watershed protection.

Along Last Chance Creek, the Forest Service acknowledges the pressure to harvest timber was enormous.

"I was really leaned on to push, push, push — so we could get somebody to log it for the benefit of the local community," said Kathy Hammond, the district ranger who approved the logging operation.

"If that timber had just stood there and rotted, then we would have had to answer why our process took so long and the local sawmill and timber operators weren't able to take advantage of that local timber," said Hammond, now a public affairs officer for the Plumas National Forest.

"That's always a part of the rush, some of which I have a problem with. It's hard to feel as if you've thoroughly analyzed everything when you're under that kind of time frame."

In the mountains, the damage grows quickly. The rate of soil loss along Last Chance Creek was almost unbelievable, more than 3,000 times above normal, according to Cawley's report.

"There are literally thousands, if not hundreds of thousands of gullies up there," Cawley said. "And there really isn't a cost-effective way of doing anything about it. You might as well take twenty-dollar bills and shred them and use them for mulch."

In the mountains, soil forms very slowly, about one inch — or 160 tons — every 10,000 years. And it erodes very slowly, too, at a rate of less than one-tenth of a ton per acre per year. Along Last Chance Creek, soil washed

off heavily logged slopes at a rate of 318.3 tons per acre — up to 671.8 tons per acre in places.

"Here you had one storm that set Mother Nature back tens of thousands of years," said Lyle Steffen, a geologist with the U.S. Soil Conservation Service. "Events like that really have an impact over the long term."

"Anytime you lose over 100 tons of soil per acre, you're talking about serious, serious erosion. You're talking about the destruction of the soil for future use. I mean, it's gone, essentially."

"That land on the Plumas won't be productive for a long time. We, as citizens, won't be able to make a living off it — and certainly the Forest Service won't be able to, either."

"Soil erosion is not a glamorous problem. But it is a problem — it's the kind of thing that will sneak up and get you down the road."

Open a window and look out on the late 19th century. Across the West, forests are falling and rivers are silting in. A worried Congress creates the national forest system with two things in mind: Protect forests — and water, too.

"No national forest shall be established," Congress said in the Organic Act of 1897, "except to improve and protect the forest or for the purpose of securing favorable conditions of water flows." (Italics added.)

A healthy forest, lawmakers concluded, was a river's best friend — a natural plumbing system that soaked in water like a sponge, filtered it, stored it underground and released it gradually.

And for half a century, that's how things went. Wood and water danced along in a kind of happy duet. Then, after World War II, the harmony came crashing to a close.

Around the nation, private stands of timber dwindled, wood prices soared and Congress opened the gate to logging on national forests. And streams began to suffer.

Today, they continue to suffer.

"Has anybody told you about the 'bloody eyeball' map?" asked Michael Jackson, an attorney for Friends of Plumas Wilderness, a conservation group based in Quincy. "That's sort of the local name for it. What it is is a map of the watersheds on the Plumas National Forest that are in a degraded condition."

"The map shows that every stream on the forest, with the exception of one, is degraded."

Today, the Forest Service is trying to restore the harmony of wood and water. But with a budget tied to logging, progress is slow.

"The dilemma is we have three or four timber harvest planners on each of our districts, and we're just starting to get maybe one hydrologist," said Jeanne Masquelier, resources officer for the Tahoe National Forest.

"So the timber planners are churning out the work and the hydrologists are running around like chickens with their heads cut off trying to keep up."

And once a problem occurs, good luck trying to fix it. "Congress appropriates very little money for watershed restoration," said Cawley, the Plumas hydrologist. "We usually have to get it out of timber sale revenues."

And that stirs more controversy. "What it amounts to is the Forest Service has to destroy the land in order to save it," said Linda Blum, an environmental consultant and former habitat specialist with the National Audubon Society.

The Forest Service is not alone in its struggles.

Today, erosion from forests, farms and ranches, abandoned mines, roads and other sources — on public and private land — is easily the biggest water quality problem in the mountains. To date, no government agency — federal, state or local — has been able to stop it.

The story is much the same across the rest

of California, and the nation as well.

"The sheer magnitude of the pollution dwarfs the resources available to deal with it," said a 1990 report by the General Accounting Office, the investigative arm of Congress.

"While available funding is on the order of millions, serious efforts to correct the problem — even specific problems in limited geographic areas — would cost billions."

In the Sierra, too little money and manpower have left gaping holes in state water quality programs.

"The bottom line is we've got one or two people covering the counties from Tuolumne all the way up to Butte," said Barry Montoya, an environmental specialist with the Central Valley Regional Water Quality Control Board.

"And we've got the Forest Service submitting timber harvest reviews, plus the California Department of Forestry. There's a lot of work to be done."

"But I'm not sure the Forest Service is the biggest perpetrator. You can drive up into the foothills where a person may own three or four acres and he's overgrazed it, where developers are ripping up the landscape."

"And there's nobody there to catch them. It's like the drug problem — there are not enough cops."

Few places in the Sierra have suffered as much as Last Chance Creek.

The view is devastating: barren, rubble-strewn slopes, creeks filled with gravel, bushes half-buried in sand. Not long ago, this region was forested. Now it is turning to desert.

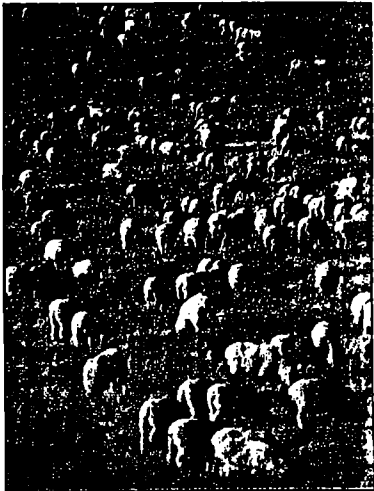
"Look at that," said Kossow, the hydrologic technician, riding along in the passenger seat of a Jeep that crawls along a steep road above the creek. "They didn't leave anything. They've probably set this soil back thousands of years."

Continued on facing page, 11

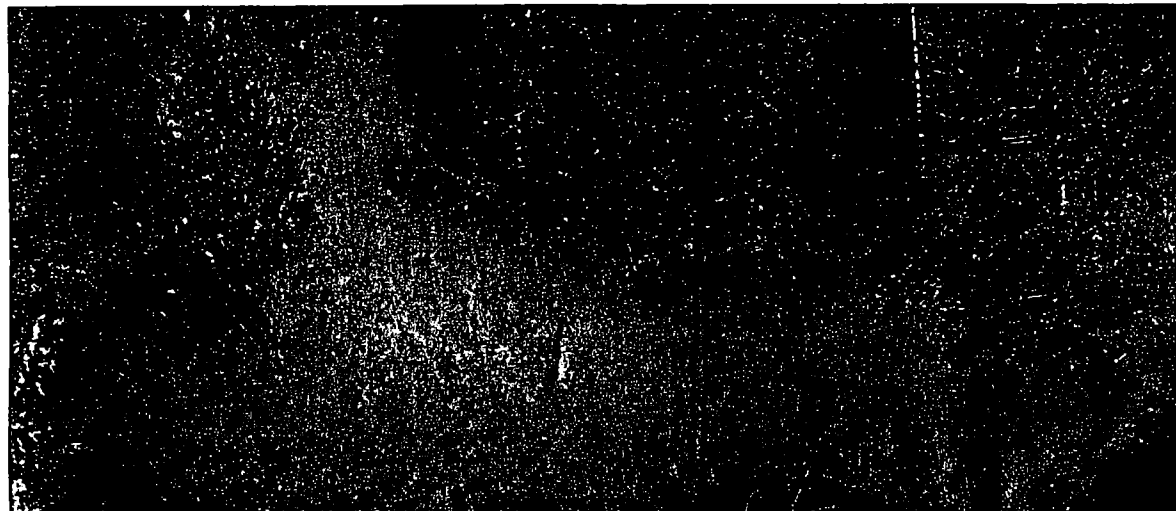


After large stands of forest were cut along Last Chance Creek in the Plumas National Forest, heavy rains in July 1990 washed a quarter-million tons of soil

off steep slopes, creating a moonscape of gullies and bare land. Not long ago the region was forested. Now it is turning to desert.



Sheep graze near the banks of the Stampede Reservoir in the Tahoe National Forest, raising concern over damage to aquatic habitat, riparian areas and water quality.



Dust flies during logging season. Often the area where trees are dragged for trimming is badly damaged by bulldozers.

Continued from previous page, 10

The Jeep stops and Kossow and others set out cross-country. Hiking is tough. There are gullies every few feet, knee- to hip-deep, knifing like small canyons through the crumbly granitic soil.

"I walked all this country in 1987 and there was no bedrock along this road," Kossow said. "Now you can see bedrock."

Gordon Robinson, a former forester for the Southern Pacific railroad from 1939 to 1966 who later went to work for the Sierra Club, stands behind him, staring in disbelief. "This is not mismanagement," he said. "It's no management."

Cawley, the Plumas hydrologist, said the disaster started with a fire, the enormous Clark Fire of 1987 that burned 40,000 acres

of forest and rangeland across the high, dry country of the northeast Sierra.

The scene was not pretty: large splotches of dead, fire-blackened trees. But to the Forest Service it was an opportunity to do what it does best: cut trees.

"Our fire management people wanted to get in and clean that material up — to reduce the risk of future fires," Cawley said. "And that meant getting the trees out and pushing over everything else and piling it up and burning it."

Cawley was concerned. After all, the slopes were steep and the soil was crumbly and prone to erosion.

"There's an internal debate raging," he said. "I guess you have to be there to experience it."

"I've been in many, many meetings where myself and maybe three other people were surrounded by 20 to 25 fire management and timber people who are saying, 'Yeah. Go for it. Keep going. This is great stuff.'"

"The fire folks really believe passionately in what they are saying. The problem is everybody is so impassioned we haven't gotten down to a businesslike level where we — as hydrologists — can say, 'OK, we have to get rid of some of this material, but let's look for machines that are kinder to the land than a bulldozer with a blade on it.'"

But former district ranger Hammond said that if Cawley was concerned, she didn't hear about it.

"Ken Cawley — and specialists of his ilk — were part of our environmental assessment

process," she said. "Frankly, I didn't get a sense they were uncomfortable with it."

"Nobody said to me, 'I can't live with what you guys are proposing.' I truly felt it was a solution everybody was comfortable with."

After the rainstorm at Last Chance Creek, Cawley was stunned.

More than 1,700 acres of Forest Service land was ravaged. "It was serious, serious erosion," he said. "I would call it a devastated site."

His 12-page internal report was something of a sensation inside the Forest Service — and out — because he pointed a finger at his own agency.

"Traditionally, we've regarded these storms as freak events," he said. "The argument I've heard is, 'We rolled the dice and — against the odds — we lost.'"

"But it's a well-known fact that this is a high-lightning occurrence area and a high-intense thunderstorm occurrence area. We've had two of these things in the same place in successive years. How odd are they?"

"The point I was trying to make is that in some of these areas, there are certain types of soil and climate conditions where if we roll the dice, we may lose six times out of 10."

He also drew attention by showing that erosion from heavily logged areas vastly exceeded soil loss from undisturbed areas, even undisturbed areas that had been burned.

"It sounds like a prescription for disaster," said Henry Vaux, a professor emeritus of forestry at the University of California, Berkeley, and chairman of the California Board of Forestry from 1976 to 1983.

"There's no excuse for that. Somebody ought to be dangled from the yardarm for approving it."

But Cawley said there were no reprimands. "I think the ranger district was put in a defensive position. Questions have been raised. But there was nothing ever close to anybody ever being punished or anything," he said.

"We have a lot to learn," said Hammond. "I guess that's part of the conclusion we're coming to."

"We're taking it one step further," she said. "We've formed a group to apply our 'new perspectives' program on these areas because obviously what we're doing ain't working."

"We're talking about looking at a process that's driven by an objective different than what it's been driven by — which is to harvest timber."

Cawley said the controversy "is symptomatic of the cathartic change the Forest Service is going through. It's both exciting and painful."

"The old mission was to get the sticks out. And my view is that Last Chance Creek was basically old forestry: You come in and pile up the sticks and burn and go."

Change is coming, but slowly. "We've got new buzzwords — 'new perspectives' and so forth," Cawley said. "They always get the motto going first and then hopefully the program comes along afterward. . . . Basically, we haven't defined our new mission yet in a way that everybody understands and has bought into."

"But I think there is change afoot. There's an old saying that people learn more from their mistakes than their successes. That may be the process at work here."

Near Last Chance Creek, a culvert is nearly buried in sediment, the aftermath of severe soil erosion from heavily logged slopes near Black Mountain in the Plumas National Forest.

Bee/Tom Knudson

Once an oasis, now a desert

"I cut through steep mountains, I split rocks, opened passages and constructed a straight road for the cedars . . . high and strong, of precious beauty and of excellent dark quality, the abundant yield of Lebanon." — Nebuchadnezzar II of Babylon, 604-562 B.C.

By Tom Knudson
 Bee Sierra Bureau

Some 5,000 years ago, a nomadic people stumbled out of the desert onto a strip of Mediterranean coast. The land was lush — "an oasis of green with running creeks," according to one account.

The Phoenicians put the land to work, cutting the great cedars, building ships, grazing livestock and building a thriving civilization.

Today, that oasis is a wasteland we call Lebanon. Centuries of deforestation and overgrazing have turned its green hills brown, ruined its rivers and depleted its soil.

Some 150 years ago, a nomadic people stumbled out of the desert onto a lush strip of Pacific coast. The land was so rich they called it "the Golden Land."

The settlers put the land to work, cutting its great trees, building homes, grazing livestock and building a thriving civilization.

Today, the golden land is no longer so golden. Logging, grazing and other activities are turning large parts of its forest brown, spoiling its rivers and depleting its soil.

California is not Lebanon. But California is young.

"There is absolutely no reason to believe we're going to be any different than any other culture," said Michael Jackson, an attorney and conservationist in Quincy.

"We're using heavier equipment, more destructive methods than anybody who lost their forest a thousand years ago. It may go quicker, not slower."

The problem is called desertification. And the Sierra Nevada, with its erosion-prone soils and sun-baked, Mediterranean summers, is an open door for the desert.

"Many Americans believe desertification is a Third World problem," said Michael Glantz, a senior scientist with the National Center for Atmospheric Research. "Yet aspects of desertification are under way in our country: degraded rangelands, major dust storms, decreasing soil fertility."

"Desertification is a long-term, low-grade but cumulative problem that keeps getting put on the back burner."

In the high, dry country along the Sierra's eastern and southern fringes, deserts are on the march. One such place is the Sierra Valley, north of Truckee.

"When you drive through the Sierra Valley, you see a forest on the west side, and very little on the north and the east," Jackson said. "Older people remember when the forest was 20 miles farther east. The peaks were covered with tall, stately trees. And today, nothing's coming back."

"Those trees grew under a canopy for a millennia. We took away that canopy. The soil became too hot. The microbes got baked. And now something is missing."

Mines foul Sierra streams

Poisons from sites exact a heavy toll

By Tom Knudson
Bee Sierra Bureau

SLATE CREEK, Sierra Co. — With names like Lucky Hill, Whiskey Ridge and Pioneer Pit, this part of the Sierra Nevada almost seems to clank and clatter with the sound of a colorful gold mining past.

But mining has brought more than history to the Sierra: It has also brought one of the biggest water quality problems in the mountains.

Today, abandoned mines — some more than a century old — continue to belch a steady stream of pollution into mountain rivers, from ordinary silt and gravel to acidic wastes and toxic heavy metals such as arsenic and mercury.

The poisons are taking a grim toll, especially on fish and aquatic life. In some places, streams have been sterilized. Elsewhere — such as here at Slate Creek — aquatic habitat has been severely damaged and trout are hard to find. And now, some scientists are concerned about human health, too.

One of the big concerns is mercury, which has been found in fish in Sierra streams at levels higher than those considered safe for aquatic life and, in one place, human health.

Remarkably, the issue has drawn little attention from lawmakers, regulatory agencies or industry. Too often, it seems, pollution from old mines is considered "out of sight, out of mind," as one state official put it.

But the problem is there, and growing. Every year, more mercury bleeds into Sierra watersheds. Every year, the state's most important source of fresh water gets a little dirtier.

Today, frustration is growing.

"These are big problems," said Barry Montoya, an environmental specialist with the Central Valley Regional Water Quality Control Board.

"And what the solution is, God only knows."

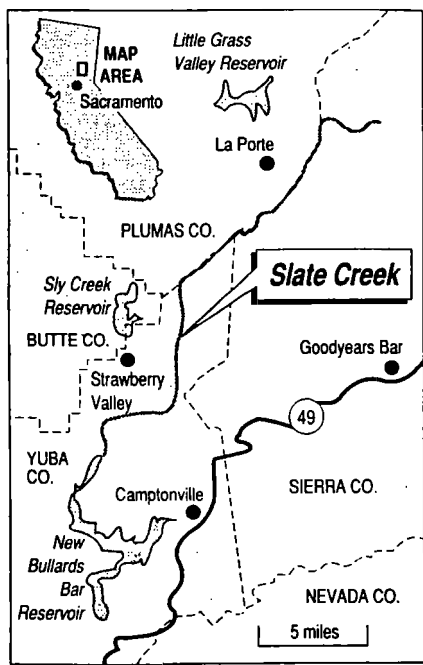
Marcia Keesey is frustrated, too. Keesey, an associate engineering geologist with the California Water Quality Control Board, is trying to put together an inventory of abandoned mines in California. But there's a hitch: She has no money.

"Funding has been a real problem," she said. "There's no program set aside for abandoned mines, even though everyone recognizes there's a problem."

"So we end up having to compete with other types of pollution problems. And invariably, that doesn't work very well."

"Most funding goes toward things that impact human health. Even though we may feel bad when fish get killed, it doesn't have as much impact as when it affects human health."

She has pleaded her case with both the U.S. En-



Bee graphic/Paul Duginski

vironmental Protection Agency and the state Legislature with no luck.

This spring, as snowmelt flushes more mine wastes out of the mountains, Keesey sits at a desk in Sacramento.

"My budget is basically nothing," she said. "I have my time. I can talk to people. But as far as trying to get together a field assessment, it's been an uphill struggle."

One of the few on-the-ground abandoned mine inventories ever completed in the Sierra took place here last summer along Slate Creek, a lone stream that tumbles into the North Yuba River just above New Bullards Bar Reservoir. The results were not encouraging.

"When we began, we knew of about 48 mine sites along the creek," said Terry Benoit, chief hydrologist for the Plumas National Forest, which conducted the study. "When we finished, we had identified 95."

"There are all these little mines that people just never got on the books," he said. "It's a festering problem that has been out there for ages and we've just ignored it."

A drive along Slate Creek can be depressing. At Pioneer Pit, ridges torn up by 19th century hydrau-

lic mining have yet to heal. Every winter, rain and wind deepen the wounds, peeling away more sediment. The most wrenching sight, though, is a tiny creek that drains the pit. The creek runs orange with mine wastes.

Across the road is another eyesore — the defunct Gardners Point mine. "Gardners Point is a disaster," Benoit said. "It has eroded so badly that at one time there was a road around the top of the site. And the road is gone now."

"Slate Creek is not a healthy watershed. The fishery is very, very poor. In fact, there's almost no habitat left. It's all been covered in silts. And there's also some suspicion about mercury poisoning."

Mercury does not occur naturally in the Sierra. So where is it coming from?

The answer, apparently, is old mine operations, which imported tons of the metal to extract gold and then carelessly disposed of it, often along creeks.

"There are records of mercury being taken up to these mines and used," said Montoya of the Central Valley water quality control board. "And there are no records of mercury ever coming out again."

A recent report by Montoya's agency contains worrisome news: Mercury is getting into the food chain.

Specifically, the report identified seven Sierra streams, lakes and reservoirs where levels of mercury in fish exceed the amount considered safe for aquatic life by the National Academy of Sciences: the Yuba River, Feather River, lower American River, Mokelumne River, Pardee Reservoir, Don Pedro Reservoir and Lake McClure. And in the Yuba River, mercury levels were high enough to exceed the U.S. Food and Drug Administration standard considered safe for protecting human life.

Mercury is of special concern because it accumulates in the food chain and can cause damage to the nervous system, including shakiness, tremors and memory loss, as well as brain damage in developing fetuses.

"A typical mining procedure was to take the waste rock — and there was a lot of mercury left in the waste rock — and dump it in Mother Nature's creek bed," Montoya said.

It is one thing to talk about the pollution, it is another to live with it.

For more than two decades, Jim Holden has made a living dredging specks of gold from fast-moving Sierra streams.

For more than two decades, he has watched mercury pour out of the mountains.

"I can show you a hole on the river where you can actually step in mercury. It slops up on your boot," said Holden, who works the middle fork of the Yuba River.

"I've found tunnels just full of mercury. It drips down from one place to another. And then you get a storm and those tunnels get flooded and it just pushes that mercury out into the river."

cost about \$100 million," Harrison said. "What we're proposing is partial dredging, about a million cubic yards, until we can figure out other possible solutions."

PG&E's problem, though serious, is but a drop in a very muddy bucket. Throughout the Sierra, soil is tumbling downhill toward the most elaborate water storage system in the country — the State Water Project and the federal Central Valley Project. In the end, it may not be drought that slows the throttle of California. It may be mud.

"This sort of thing is reducing the lifetime of the hydropower and water distribution system in California on the order of a half," said Robert Curry, a professor of environmental geology at the University of California, Santa Cruz.

"In other words, we have half the lifetime for the dams that we had when we designed them."

But Bob Strand, head of the sedimentation section of the U.S. Bureau of Reclamation, said: "I don't know. My gut feeling is that sounds a little strong."

Facts and figures are hard to come

by, in part because the bureau has traditionally worried more about sedimentation in the highly erosive Colorado River region. This spring, though, the agency is coming to the Sierra Nevada for a first-ever survey of sedimentation at Folsom Lake on the American River.

"The interest was strong enough," Strand said. "We want to know what the capacity is."

"Eventually, they're all going to fill up. It's something this country is going to have to face. Most of our major storage structures are getting up in years — and we're losing that storage space."

Downstream from Rock Creek and Cresta is the bold, blue wink of Lake Oroville — the largest state-owned reservoir in California.

"I know that DWR — the California Department of Water Resources — has some concerns about siltation in the arms of Lake Oroville," Harrison said.

"There's definitely a problem everywhere we look. Every reservoir everywhere is filling up. It's just a matter of how much space there is and how long it's going to take."

MONDAY: Throughout much of the Sierra Nevada, the "air the angels breathe" is fouled by a not-so-heavenly cloud of contaminants — ozone, sulfur dioxide, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen oxide, particulates and other chemicals.

Few parts of the range have been spared. During the summer, west-facing foothills and canyons are immersed in great ashen clouds of pollution. In the winter, once sparkling skies are smudged with yellow, brown and gray — the signature of too many woodstoves, automobiles and people in the mountains.

THURSDAY: The Sierra Nevada, one of the world's great mountain ranges, is slowly dying — and no one seems able to help it.

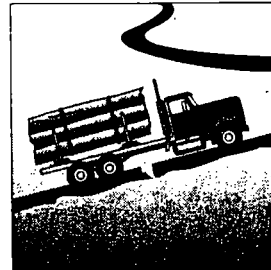
Once majestic skies are filled with pollution. An emerald forest is sick and brown. Soil is washing away. Streams are lined with mud. People are moving in — and wildlife is moving out.

Today, though, things are starting to change. Concern is growing, rumbling like a summer thunderstorm along the Sierra crest. You can hear it in mountain towns from Quincy to Camp Nelson, over campfires along the John Muir Trail, even in some quarters of the U.S. Forest Service.

From forest to desert

A host of forces is bringing remarkable damage to the very essence of the mountains: soil and water. Logging is flushing millions of tons of mud and debris off of steep slopes — ruining once-clear trout streams. Cattle are trampling through mountain meadows, turning wetlands to desert. Roads are ripping up fragile mountain soil and channeling rain and melting snow into highly erosive torrents. And catastrophic forest fires are bringing a legacy of scorched earth to the mountains.

Effects of road building



you've got a lot of roads, you've got a lot of problems."

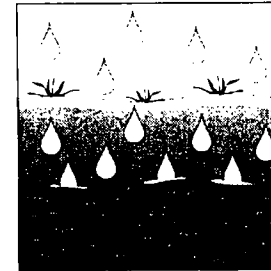
The Sierra has a lot of problems. In national forests, you can drive more than 19,000 miles — about three-quarters the distance around the world — mostly on logging roads.

"When you look at aerial photos, it's astounding," said Mike Kossow, a Plumas hydrologic technician. "It looks like a zillion little worm trails down there."

Often, roads are poorly designed. But even good roads cause problems. "It's very difficult to put enough protection into roads to not have a problem," said Steele.

"We've literally got over a thousand road problems on this forest — and we're just typical," said Terry Benoit, chief hydrologist for the Plumas.

Hydrophobic soils



After the Clark Fire swept through Black Mountain in 1987, Mike Yost noticed something unusual.

"You could take a canteen and pour water on the ground and it would just bead up and roll off," said Yost, a forestry instructor at Feather River College in Quincy.

Today, a new generation of super-hot fires is causing freakish changes to mountain soil — and triggering enormous soil erosion.

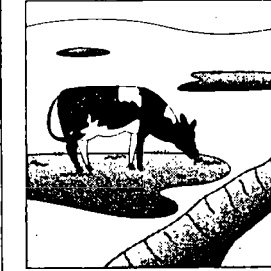
Scientists call the problem "hydrophobic soil." A layman might call it scorched earth.

"Ever since Smokey the Bear arrived, we've had a tremendous accumulation of wood and fuel in our forests," explained plant ecologist Bob Holland. "So when a fire does take place, you get a holocaust. It just bakes the soil."

"The temperatures in the duff — the decomposing needles and twigs — can climb to 1,000 degrees. You end up with this resinous stuff in the ground — like a layer of wax."

"When the rains come, water will move through the soil until it hits that layer. It can't go any further, so it moves laterally. Eventually, it turns to slurry and the whole thing slides downhill."

Erosion from grazing



This is how it must have been: Footsteps in a lush mountain meadow, the flash of fast water, a long cast — and trout over a campfire.

This is how it is today at Willow Creek in Plumas County: Footsteps in a mountain meadow, the gash of a 30-foot-wide gully, chunks of soil tumbling into the creek — and dinner in town.

It is the story of Willow Creek, a mountain stream ruined by livestock grazing. And it is a common tale, especially in the southern and eastern Sierra.

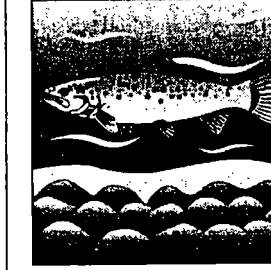
"This country is just a whole lot more fragile than we've ever wanted to admit," said Mike Kossow, a hydrologic technician with the Plumas National Forest. "There is less grazing today but the country is not healing."

Grazing began along Willow Creek long ago. But it wasn't until 1986 — after decades of abuse by cattle — that Willow Creek turned from sparkling stream to soil-choked gully.

A heavy storm pounded the region, sending a torrent of water surging down the creek's raw, cattle-trodden banks. Afterward, Kossow arrived to take a look. "There was this huge gully," he said. "The stream was swallowing up the meadow. I told one of my friends. And he couldn't believe my physical description."

"He said his dad used to take him fishing in that stream. They used to catch some really nice fish. It was one of their favorite spots."

Siltation of streams



An avalanche would have been kinder.

In 1990, clear cutting brought a great transformation to the Mill Creek area of the Tahoe National Forest: Woodland turned to wasteland. Some of the worst damage, though, took place where one might least expect it — in Mill Creek itself.

"They flattened that stream, knocked it apart," said Tahoe fisheries biologist Ron Medel. "Your dense riparian vegetation — the moss, ferns and so on — isn't going to come back for years."

Medel's story is typical. "It isn't just one little spot," said Don Erman, professor of aquatic ecology at the University of California, Berkeley. "It's much more widespread. And it's our land — not Forest Service land. It belongs to all of us."

Two years ago, Mill Creek was home to a healthy population of rainbow trout. Then, clear cutting began.

Heavy logs were hauled through the creek, ripping up its banks and gravel bottom. Later, rain washed soil off the steep slopes, lining the creek with mud, burying the gravel bottom where trout spawn. When Medel returned to Mill Creek this spring, the trout were gone.

Source: Tom Knudson / Bee Sierra Bureau

Bee graphic / Kris Hofmann

THE SERIES

SUNDAY: California's Sierra Nevada — one of the world's great mountain ranges — is suffering a slow death.

Almost everywhere you look there are problems: polluted air, dying forests, poisoned rivers, vanishing wildlife, eroding soil and rapid-fire development. Even naturalist John Muir's holy ground, Yosemite National Park, is hurting.

The vulnerability was documented in an eight-month investigation by The Bee, involving more than 200 interviews, 10,000 miles of travel and the examination of a small mountain of documents.

TUESDAY: The Sierra Nevada forest is dying. Logging is the most visible and controversial agent at work in the Sierra. But air pollution, drought and insects are inflicting great damage, too. And there is one other problem — more subtle than the rest — causing enormous harm: fire suppression.

Like soldiers in a siege, Sierra trees are falling — and falling fast. The battle-grounds are many: North Mountain, Duncan Canyon, Black Mountain, Red Clover Creek. In its toughest hour, the Sierra Nevada forest can find little mercy.

There are no official estimates of overall environmental damage to the Sierra Nevada for one simple reason: No government agency, university or environmental group has taken an exhaustive look at the entire range.

The Bee's investigation, though, uncovered plenty of reasons for concern. Across the range, one can find an assortment of unsettling scenes, including heavily logged forests, barren, eroding soil, silt-choked streams and scenic vistas fouled by air pollution.

TODAY: Along the back roads of the Sierra Nevada is a battered and bleeding land, places where trees, grass and other vegetation have been peeled away and soil is washing into mountain streams at staggering rates.

The problem draws little attention, though, partly because gullies — unlike spotted owls — are not very glamorous. The Bee's investigation found that damage to soil and streams is perhaps the most serious and overlooked problem in the Sierra Nevada, one that threatens the essence of the range and the lifeblood of California — mountain watersheds.

Replanting of forests called a failure

By Tom Knudson
Bee Sierra Bureau

he Sierra forest of tomorrow looks nothing like today's.
The future forest is a tree farm — row after row of pine trees, sprouting like soybeans in a farmer's field.

Swirling about this future forest, a creation of the U.S. Forest Service, is a cloud of question and controversy and the hint of herbicides drifting through the air.

"As I look at those stands, I think we can be criticized," said David Jay, deputy regional forester for the Forest Service. "We did not, at the time, give enough credence to multiple species. We felt there would be other parts of the forest that would be ample to provide that kind of diversity."

When a farmer plants a soybean field, it usually grows.
When the Forest Service plants a stand of pine, the trees look for an excuse to die: sunstroke, thirst, lack of nutrients, too much brush, decapitation by gophers and cows.

In the Sequoia National Forest, less than 20 percent of the acreage replanted between 1976 and 1986 was certified as successfully restocked. One internal memorandum calls the situation "alarming."

"The Forest Service is having an extremely difficult time replanting trees," said Carla Cloer, a fifth-grade teacher at the Porterville Elementary School and a well-known conservationist in the Sequoia region.

"The real problem is they're logging where they shouldn't be logging. Some areas of the forest only get 14 inches of rain a year. The soils are shallow and erosive and extremely vulnerable."

But Sequoia forest expert Bob Rogers pointed more to faulty record-keeping, saying that he expects most of the replanted acres to eventually be certified as successful.

But concerns about replanting are not confined to the Sequoia forest.

Throughout the Sierra, especially the dry southern and eastern portions, you will find a future forest that is dead and dying.

"You come out here in the summer and it looks like the Mojave Desert," Ray Butler, chairman of the Nevada County Fish and Wildlife Commission, said on a recent drive through a replanted section of the Tahoe National Forest near Truckee.

"The survival rate can't be one tree in 50. And some of these areas have been planted two times. It will take centuries for these forests to come back. It's bleak, really bleak."

But the Forest Service says things are improving. "We've made some mistakes," Jay said. "We've thought we could make a change and bring it back — and we couldn't."

"I believe we're being much more careful today about the areas we're planning to harvest. And there has been extensive research into helping us do a better job with regeneration."

In April, the U.S. General Accounting Office criticized the Forest Service for not paying enough attention to reforestation.

"Our report shows that the Forest Service's reporting on reforestation is inaccurate and inconsistent," said GAO Associate Director Flora Milans at a House subcommittee hearing.

"As a result, Congress does not have reliable information to make informed decisions on funding for forest management."

Not long ago, plant ecologist Bob Holland walked out into a stand of brush north of Truckee and found something alarming: a pygmy forest.

"There were all these little trees, maybe a foot or two tall and as big around as your thumb," said Holland, who recently left his job with the California Department of Fish and Game. "But when you cut them and count the rings, you find they are 30 years old."

"They have just been entirely suppressed by the closed canopy of the brush."

Brush may seem boring, but it is a major enemy in the national forest. Brush is an executioner of young trees — and it is running wild.

This year, though, the Forest Service plans to unveil a special weapon against brush, one it hasn't used in years: "We want to use herbicides," Jay said. "They can be used on private land and the amounts we're talking about are minuscule in comparison."

Conservationists are outraged. "What they'll be doing is putting herbicides in the public water supply," contends Steve Beckwith, co-director of the Sierran Biodiversity Project.

"You can choose whether or not to buy pesticide-contaminated produce. But if you drink water out of the Sierra, you won't have a choice: It will have herbicides in it."

Even when seedlings are healthy, they can cause controversy. "You're looking at a tree farm, a monoculture," Nevada County's Butler said. "Where's the biodiversity? The only thing here is pines."

The Forest Service says it is moving toward planting more diverse forests. But in most places, new forests are still dreary stands of even-aged pine trees — all the same species.

"The only thing worse than having them fail," said conservationist Martin Litton, "is having them succeed."

'We've made some mistakes. We've thought we could make a change and bring it back — and we couldn't.'

— Forest Service's David Jay



Ponderosa pine seedlings have been planted in rows in the Stanislaus National Forest. Critics contend that such planting methods offer no biodiversity.

Bee/Jay Mather

S'erra low priority for Sierra Club, critics claim

By Tom Knudson
Bee Sierra Bureau

AMESTOWN, Sonora Co. — When Chuck Brewster began a grass-roots effort to limit open-pit gold mining here last year, he turned to an organization he thought would want to help: the Sierra Club.

"You'd think open-pit mining in the Sierra would be a major concern to them," said Brewster, a retired banking executive. "But we couldn't get much interest."

Brewster's story is not unusual.

Many people feel the Sierra Club, one of the most well-known conservation groups in the world, has fallen short in the struggle to save its own birthplace: the Sierra Nevada.

"The problem is the Sierra Club is too big, too rich, too fat and too lazy," said Martin Litton, 74, who was a member of the Sierra Club board of directors in the 1960s and '70s.

Ninety-nine years ago this month, the Sierra Club sprang to life, an event regarded as a milestone in conservation history. Naturalist and writer John Muir was there, as were a number of prominent San Francisco Bay Area residents — all driven by a passion to protect the Sierra Nevada.

"We will be able to do something for the wilderness and make the mountains glad," said Muir, the club's first president. But on

the eve of its 100th anniversary, many feel the Sierra Club has lost much of its old zeal.

"The process is everything," Litton said. "Who is where on the totem pole, and what committees you have to go through."

Joanne Hurley, the Sierra Club's director of public affairs, shrugged off the criticism. "With 650,000 members out there, you're going to have some different viewpoints," she said.

Under the leadership of David Brower, executive director of the Sierra Club from 1952 to 1969, the organization grew into one of the nation's most powerful conservation voices. Many of its efforts to save wild areas — from Dinosaur National Monument in Colorado to Diablo Canyon in California — are legendary in the conservation community.

Today, though, many are concerned the organization has drifted so far afield that its own back yard — the Sierra Nevada — is suffering.

"The trouble is it picks up movements that are already under way," Litton said. "My God, there are plenty of other people worried about acid rain and the ozone hole. Now it's getting into urban matters. It's just not the Sierra Club anymore."

"There may be problems all over the world. But that doesn't mean you should abandon the place where you started, which



'The problem is the Sierra Club is too big, too rich, too fat and too lazy.'

— Martin Litton, former Sierra Club board member

still needs you more than ever."

But Vicky Hoover, a member of the Sierra Club's San Francisco Bay Area chapter, sees things differently.

"The reason the Sierra Club has spread out its activism to new issues is because it's grown tremendously," she said. "Twenty-five years ago, it had 60,000 members. Now it has more than 600,000."

"And it has a more urban membership. Because of the growth, it's been possible to address such non-traditional issues as urban transportation without neglecting our traditional areas."

But in the Sierra foothills of Tuolumne County, where Brewster hustled to promote

his mining initiative last fall, the Sierra Club was nowhere to be found.

"They said I didn't do enough homework, that I didn't stomp around and figure out where the habitat was for this fish or that animal," Brewster said.

"Well, I didn't have the time to do all that stuff. So they didn't come out publicly in support of us. I was disappointed."

The Sierra Club's colorful magazine, *Sierra*, was also not in the area. Its November/December 1990 issue included a cover article titled "Deep Rapture, Coral Reef Diving," but nothing about Brewster's mining battle.

And that has sparked more controversy.

"Of all the magazines I receive, that's the first one I chuck," said Gordon Robinson, 80, the Sierra Club's forester from 1966 to 1979. "It seems to glow, but it doesn't say anything."

Robinson and others are calling for a return of the old *Sierra Club Bulletin*, the group's hallmark journal published from 1893 to 1977. Unlike *Sierra*, the staid, black-and-white bulletin was filled with stories about the Sierra Nevada, including personal accounts of camping trips, climbing expeditions and other adventures.

Jonathan King, editor-in-chief of *Sierra*, said: "There are a lot of Sierra Club old-timers like Gordon around. And I'm very sympathetic to the feeling of loss they have for the club they knew."

"But it's undeniable that as the organization has grown — both geographically and in numbers — its concerns have broadened exponentially."

"Now we focus on the whole spectrum of environmental issues, in the U.S. and abroad. We're worried about toxic wastes, solid wastes, insecticides, pesticides and trade with Mexico."

But old-timers remain unsuayed. "The bulletin was really on the subject," Litton said. "You can't even find the *Sierra* in *Sierra* magazine anymore."



Bee/Randy Pench

Proposals for saving the Sierra include more land for wildlife, stricter air-quality standards, more forestry research and various plans for expanded parks and reserves.

Re nedies as diverse as the range itself

Last of five parts

By Tom Knudson
Bee Sierra Bureau

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The Sierra Nevada, one of the world's great mountain ranges, is slowly dying — and government has done little to help it.

Science has not come to the rescue, either. And the conservation community — with some exceptions — has shown more interest in the Brazilian rain forest than the Sierra Nevada.

Today, though, things are starting to change. Concern is growing, rumbling like a summer thunderstorm along the Sierra crest. You can hear it in mountain towns from Quincy to Camp Nelson, over campfires along the John Muir Trail, even in some quarters of the U.S. Forest Service.

"The Sierra Nevada is really the region where California faces its destiny," said Chris Bowen, a spokesman for the U.S. Forest Service in San Francisco.

"It is probably the most stunning natural setting in California. And it is the area that is getting hit.

"You've got a whole host of stresses — drought, fire, urbanization, air pollution and so on — coming to bear on a resource we've always thought would take care of itself. Now it's something we have to look at as vulnerable."

This is a story of change in the Sierra — about the ideas and plans being put forth that could help save a great outdoor citadel. The ideas are as diverse as the range itself — more land for wildlife, stricter air quality standards, a massive increase in forestry research, better protection for giant sequoias, a large Sierra Nevada Biosphere Reserve, a Sierra Nevada commission, even a new Range of Light National Park.

The Sierra has seen this before. Many years ago, the range was a crucible of change, a fulcrum for some of the nation's most prominent conservation battles, including controversies over the logging of giant sequoias, the damming of Hetch Hetchy Valley in Yosemite National Park and the destructive mining of foothill ridges and canyons with high-pressure hydraulic hoses.

Today the Sierra is a crucible once more. And for the first time in many years, the outlook for reform seems to be improving. Consider:

- Not yet six months into office, Gov. Wilson has announced an ambitious plan to preserve forests, wildlife and rivers statewide, including the Sierra. The Sierra has helped "shape the California character," Wilson said. "It's common sense that preventing damage to our natural resources is much easier — and much less costly — than trying to repair poisoned wetlands or ravaged mountains."
- In San Francisco, the new regional forester for the Forest Service is talking about sweeping changes that would put wildlife and watersheds on par with timber.
- And in the Sierra Nevada itself, a new kind of economy is emerging — one driven increasingly by tourism and recreation.
- The Sierra is really a fertile area for change," said Dan Taylor, Western regional representative for the Audubon Society. "The climate is not as polarized as northwest California. It faces different kinds of struggles. Timber is a player, but not the dominant one."
- The problems have spread gradually, like the slow march of cancer. For years, few people even noticed. The Sierra Nevada seemed somehow immune — too big and too majestic to succumb to civilization and its pressures.
- But its vital signs — air, water, soil, wildlife and timber — are failing fast.
- "I think most people have assumed the Sierra is being well managed for our continued use into the future," said Don Erman, director of the wildland resource center at the University of California, Berkeley.
- "But now, as more people come into contact with more land, they're starting to

realize it isn't. They're starting to wonder why the streams are muddy. They're seeing changes that they really don't like."

A 'Sequoia National Preserve'

That includes Martin Litton, one of California's most well-known conservationists. A few years ago, Litton was stunned to learn that cathedral-like groves of giant sequoias — the largest living things on earth — were being leveled under a policy put into place by the Sequoia National Forest.

"The giant sequoias are monuments to God. They inspire reverence around the world," the 74-year-old Litton said.

"And here we are destroying them casually, as if they don't really count. To say nothing of the other monumental trees in the area, like the great sugar pines."

Last year, a settlement was reached between the Forest Service and conservationists, insuring greater protection for the Sequoia groves. But Litton believes it does not go far enough.

Today he is a prime mover in an effort to transfer more than 400,000 acres from the national forest into a "Sequoia National Preserve," which would make the area off-limits to logging. And he has some influential allies, including the Save the Redwoods League, the Sierra Club and Environment Now, a foundation created and endowed by Frank Wells, president of Walt Disney Co.

Litton, a key player in the effort that created Redwoods National Park in 1968, said he expects legislation to be introduced in Congress this year.

"We're making a lot of progress," he said. The Forest Service declined to comment on the matter. "Until a bill is actually in final form, the Forest Service probably isn't going to be able to respond to anything specific," said Matt Mathes, spokesman for the agency in California.

"The giant sequoias were Muir's greatest concern," Litton said. "They've been badly damaged, but we can bring them back. It's going to be a labor — a labor of love — and a hard one."

Range of Light National Park

Even bolder ideas are being voiced in some circles, including creation of the Range of Light National Park.

"The question is what do we want to leave for our grandchildren and their grandchildren?" said Edgar Wayburn, a Sierra Club vice president in charge of national park issues. "What kind of Earth? The Sierra Nevada is an important part of that."

The idea for a new national park is just that — an idea. No proposal is ready for Congress. The Sierra Club is not pushing it. But as an idea, it has a certain sparkle.

The concept would take the forest and high Sierra country between Yosemite and Sequoia national parks, patch it all together into one enormous park and christen it with Muir's memorable description of the Sierra as the Range of Light.

But the Forest Service takes a dim view of the concept.

"The Range of Light National Park proposal is myopic because it vastly reduces services to our customers — the American public," said James Crates, forest supervisor of the Sequoia National Forest.

"It is ignorant to think that randomly drawing boundaries around millions of acres of national forests, national parks and private lands, to be preserved, meets the needs and values of the American public."

But Wayburn disagreed. "When they were created, Yosemite and Sequoia were parks in a vast sea of wilderness. Now they are islands in a vast sea of development."

"The idea, which has been floating around for a while, is simply a way of trying to get greater protection of the Sierra Nevada and the national parks ... established there."

Sierra biosphere reserve

But an even greater concept also is being discussed: the creation of a Sierra Nevada Biosphere Reserve, which would encompass an enormous portion of the range from the Lake Tahoe region south to Sequoia

National Forest.

The idea is to manage the Sierra as a geographical and ecological entity, not separate chunks of public and private land. The concept is not unprecedented. In upstate New York, for example, Adirondack Park is managed in a similar manner.

More than eight times the size of Yosemite National Park, Adirondack Park is the nation's largest designated outdoor sanctuary, a patchwork of public and private land that has been managed since 1895 under the New York Constitution as "forever wild."

Litton sees merit for such an idea in the Sierra.

"The people, the towns and so forth would stay, like they have in the Adirondack Park. You would just stop the devastation of the mountains, that's all," he said.

"We stopped hydraulic mining, didn't we? If that had gone on, there'd be nothing left. What's happening today is just as destructive, only it's more subtle."

Like a new national park, a Sierra Nevada Biosphere Reserve is a long way from reality. But a scaled-down version is under serious consideration by the Timberland Task Force, a kind of think-tank formed in 1989 by the Legislature.

One proposal, now under consideration, would establish a "bioregional management system" for a large portion of the western Sierra Nevada.

"We've been trying for years to manage by drawing lines on maps and saying this is what we're going to manage for," said Dean Carrier, the Forest Service's representative on the task force until he retired earlier this year.

"We really haven't looked at the Sierra as a whole and how it fits together. That's what the bioregion idea would do, look at things naturally rather than artificially."

"It would include all kinds of new ideas, things like mitigation banks. A mitigation bank is where you would put all the resources of the Sierra into one bank."

"So if we were to restrict Sierra Pacific from cutting on their land because we need that piece for wildlife, they would be able to cut somewhere else where the wildlife values weren't as critical," said Carrier, now a senior environmental consultant with Resource Management International Inc. in Sacramento.

"We're talking about changing some basic American assumptions. But there's no better place to do it than California. Politically, the western Sierra is a super area because it's nationally known. People identify with it."

A bioregional approach may not be far off. This summer, in fact, a similar approach will be put to work as part of a pilot land management project on parts of the Tahoe National Forest.

"We're really excited," said Mike Chapel, a Tahoe National Forest wildlife biologist. "We've been talking about this for four years."

The Tahoe plan seeks to reform one of the Forest Service's most controversial activities: timber harvesting.

"In the past, our timber program has been used to drive a lot of our planning," Chapel said. "Now we're trying to implement a change in philosophy so we look at a piece of ground and say, 'What is the desired condition for all resources in this area and how does timber fit in?'"

The plan, however, has one potentially fatal shortcoming: It applies only to public land.

"If you look at the ownership pattern here on the Tahoe, almost every other section belongs to a private individual or company," Chapel said.

"What we're trying to do now, for example, is determine what the landscape should look like for wildlife. Hopefully, we'll get some interest from private landowners. If we don't, good wildlife management is going to be very difficult, if not impossible."

Sierra Nevada Commission

Another possible solution is a Sierra Nevada Commission.

"The Sierra is such an important resource for the state of California," said Charles Goldman, chairman of the division of environmental studies and director of the Tahoe Research Group at the University of California, Davis.

"But there's no uniformity in how it's being treated. It's managed county by county,

parcel by parcel. And we're starting to see some real problems with erosion, the distribution of water, growth and development and so on.

"One suggestion I've made is to create a statewide Sierra Nevada Commission, similar to the California Coastal Commission. A commission could bring a more uniform approach to the regulation, use and development of the region. We just have to take a broader, longer-term view."

Reforming timber harvesting

Timber harvesting practices themselves should be reformed, said a 1990 special report by the National Research Council, an arm of the National Academy of Sciences.

"It is essential," the council said, "to design harvesting practices and systems that do not reduce long-term productivity, add unwanted sediment and debris to streams, reduce desirable wildlife habitat or destroy beautiful forest vistas."

"The basic fact is we just don't know enough about a lot of these things," said Henry Vaux, professor emeritus of forestry at the University of California, Berkeley, and former chairman of the California Board of Forestry.

"This country's forestry research budget has been declining at a time when the level of cutting has exploded. So it isn't surprising we've run out of information."

The National Research Council recommended a "massive revitalization of forestry research" and urged the U.S. Department of Agriculture and the Forest Service to increase funding for forestry research from \$187 million to \$427 million annually by 1995.

"The stakes here are substantial," the council said. "They include the quality of air, water and soil resources, the biological diversity of natural and managed systems and the productivity of forests, wetlands and riparian zones."

The research council's message is one that Ron Stewart, the new regional forester for the Forest Service in California, takes to heart. Stewart, in fact, keeps a copy of the council's report on the coffee table in his office in San Francisco.

"As an organization, we are really at a crossroads," Stewart said. "We are re-evaluating a lot of things."

"And a lot of what comes out is going to be shaped by the new technology that's coming out, what some of the science is telling us."

Stewart, most recently director of the Forest Service's Pacific Southwest Forest and Range Experiment Station, said he will move quickly to implement the agency's "New Perspectives" program — a nationwide effort to balance all forest resources, not just timber.

"We need to aggressively pursue New Perspectives — not just as sloganeering, but as a way of doing business. We need to make it a reality or we're not going to carry any credibility."

But skepticism runs high, inside the agency and out.

"The Forest Service may not be able to change all by itself," said Steve Brougher, a wilderness supervisor with the Stanislaus National Forest in the central Sierra. "I wonder if there isn't too much of an entrenched mentality."

But many feel that Stewart, with his research-oriented background, will be a catalyst for change.

"Ron hasn't come up through the traditional Forest Service ranks," consultant Carrier said. "So he doesn't carry around the attitude, 'This is the way we've always done things.' He's a good scientist, but he is also broad enough to see the other issues."

"It's not the Forest Service that comes first with Ron. It's the resource — and what the people want. With a lot of our old-time people, it's the Forest Service that comes first. Ron looks at things in a whole different light."

One of Stewart's first trials will be juggling the volume of timber taken from national forests in California. The issue is this: As more land is set aside for spotted owls in Oregon, Washington and northwest California, many are concerned the scale of logging could jump dramatically in the Sierra. But Stewart said: "We will not exceed the capacity of the land. We're working with the timber industry and others, trying to bring about adjustments that will fit the available land base."

Already Stewart has recommended to his superiors in Washington that the volume of timber harvested from national forests in California be reduced. But he was reluctant to discuss details.

"I'm uneasy just because there's a lot of internal and external politics about the direction we're going."

Forest Service spokesman Mathes said: "Things are in such a state of transition that it's very hard to nail down specific answers on a lot of things right now."

Cleaning up polluted air

Another controversial subject no one seems able to resolve is air pollution.

As more people and automobiles pour into the state every year, the cloud of ozone and other airborne toxins over the mountains grows steadily worse.

"The only way to make the mountains clean is to make the valley and the Bay Area clean," said Thomas Cahill, head of the Crocker Nuclear Laboratory at the University of California, Davis.

"Ozone is like a snake," Cahill said. "You step on it in one spot and it rises up in another spot. You have to put your feet up and down the entire length to keep it knocked out."

Cahill's solution is to close loopholes in the state's vehicle emission control program.

"California has laid the groundwork for very good emission control, but there are major sources of pollution slipping through the cracks," he said.

"A large fraction of the cars on the highway don't meet emission standards. Old cars are a good example — old clunkers. California, I believe, has one of the largest old-car populations in the U.S. And diesel-powered cars and trucks continue to cause problems."

But Bill Sessa, spokesman for the California Air Resources Board, takes issue with that.

"Old cars are only a tiny part of the problem," he said. "A much bigger problem is the sheer growth in the number of cars."

"It takes eight to 10 new cars to match the pollution output a single car made 15 years ago. But in that time, we've seen a 50 percent increase in the number of cars, and a 65 percent increase in the number of miles they drive."

Sessa called California's emission control program the most stringent in the world. "I'm not saying there aren't places we can tighten. We're always looking for ways to tighten. But the biggest consideration is the size of the problem. The large number of cars and the increasing miles people drive."

Ozone, though, is only one problem. Another is the dingy brown haze that drifts over the mountains on most summer days. To clear that up, Cahill would, among other things, turn to the San Francisco Bay Area.

"There's a lot of sulfur being emitted — hundreds of tons per day — from petrochemical refineries in the Bay Area," he said. "And sulfur is very effective in causing haze in the mountains."

"Those emissions currently do not violate California's standard for sulfur dioxide, which is based on health, but they are far too much for the question of visibility."

His recommendation: Create a tougher state standard for sulfur dioxide. "It might end up costing you a penny a gallon for gas, but it would have a major impact on visibility in the mountains."

But Sessa said standards are already tough.

"Almost all of California's air-quality problems can be linked to three basic chemical groups, including sulfur oxides," he said. "And we already restrict all of them to a much greater degree than anybody else in the country."

Despite the many problems, Cahill remains optimistic.

"The Range of Light can be the Range of Light again," he said.

"In California, we are lucky because the air coming across the Pacific Ocean is very clean. The only way we keep our air polluted is to keep polluting every day."

"In California, we are in control of our destiny. If we stop polluting for even a day, the Range of Light would be clean again."

The Range of Light — remember those words.

For they are more than a vision of what once was, they are a dream of what could yet be.



Bee/Randy Pench

Construction workers, above, build a home in the mountains at Tahoe Donner near the ski area. Below, a manufactured housing development between Auburn and Grass Valley along Highway 49.

GROWTH

Like gold rush of '49, people pour into hills

By Tom Knudson
 Bee Sierra Bureau

TRUCKEE — Not since the California gold rush of 1849 has the Sierra Nevada seen such an influx of people. They are coming from Sacramento, Los Angeles, San Francisco and other places — a surge of contemporary emigrants settling into many of the same regions that lured early gold-seekers and pioneers.

Today's emigrants, though, are not looking for gold. They are searching for a commodity even more precious, something that no longer can be found in much of California: peace and quiet.

But this modern migration is also tinged with irony. For in their move to the mountains, Californians are threatening to destroy the things that make the Sierra special — its small towns, clean air, majestic forests and outdoor spirit.

Already, signs of trouble are numerous — the ribbon of headlights along Highway 49 north of Auburn, the gray curtain of woodsmoke over Mammoth Lakes, the rumble of earth-moving equipment in Truckee on a Sunday afternoon.

"I love the Sierra and I want to stay here," said Jeff Schloss, a ski instructor and substitute teacher in Truckee.

"But it's so close to the Bay Area and the Valley. I'm worried the quality of life is going to deteriorate. The very things people are trying to get away from — like air pollution and traffic congestion — they're bringing up here."

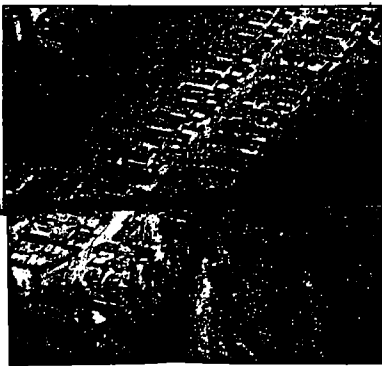
Surprisingly, government has offered little protection. Often, in fact, county governments have overlooked the Sierra's natural resources in favor of economic considerations — in particular the lure of more jobs and property tax revenues.

"The basic issue becomes, 'Is there a market for the project?'" said Tom Albright, former chairman of the Nevada County Planning Commission.

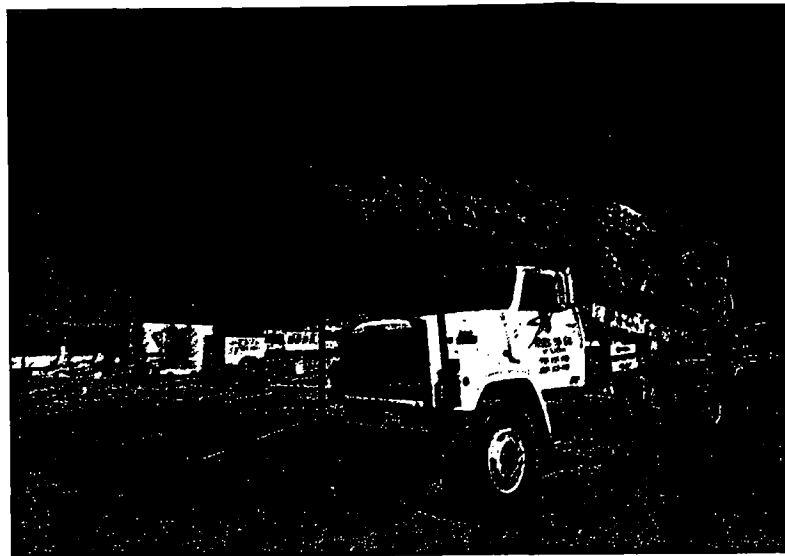
"It's not, 'What is this going to do to the quality of life for the people in the area?' That's what it boils down to."

California, of course, has seen such things before. During the past half-century, the state has grown so tremendously that many of its prettiest places, from Orange County to the San Francisco Bay Area, are covered with cities and shopping malls.

Now, as California's population nudges past 30 million, the push is on in the Sierra — a region long considered too rugged and remote to draw much development pressure. Today, the Range of Light is looking more like the Range of Real Estate. Almost everywhere, it seems, people are pouring in. They are a diverse group: retirees fleeing urban California for wooded, foothill acreages; baby-boomers commuting to jobs in the Central Valley; business people weary



Bee/Jay Mather



Bee/Jay Mather

At the new Gateway shopping center in Truckee, a company called Trees to Go reintroduces coniferous trees into a parking lot where a forest once stood.

of big-city pressures, and young men and women drawn to the ski slopes.

With them has come an army of builders, pavers, plumbers, mortgage bankers and real estate agents.

Together, they have wrought a remarkable change: The Sierra Nevada — known around the world for its scenic grandeur — is now one of the fastest-growing areas in the state.

Statistics help tell the story. During the 1980s, six of the state's 10 fastest-growing counties were Sierra counties, U.S. Census Bureau figures show. Amador County, east of Sacramento, led the region with a population jump of 55.5 percent, third in the state behind Riverside and San Bernardino counties.

Nevada County saw its population swell from 51,645 to 78,510 — a jump of 52 percent. Next door, Placer County grew from 117,246 people to 172,796 — up 47.4 percent.

But statistics are dry, unfriendly things. A better gauge of change is the lens of time.

"I remember in the early days flying over the Sierra at night and finally seeing Sacramento — a discrete point of light," said David Brower, a 78-year-old veteran conservationist and former executive director of the Sierra Club.

"Now, it's just lights, lights, lights and lights."

Other changes are more subtle.

"The hierarchy of values is changing," said Chris Bowen, a spokesman for the U.S.

Forest Service, the largest landowner in the Sierra.

"We're not seeing an increase in the number of ranchers, loggers and miners. We're seeing more service industries, retirees and so on."

"And that means there is more insistence on things like scenic quality. Clear cutting tends to put people off. And realistically, we can't ignore that."

"You've got more roads, more power lines and more consumers of water. And that, in turn, is having an effect on things like air quality and wildlife habitat and — over time — the ecology of the forest."

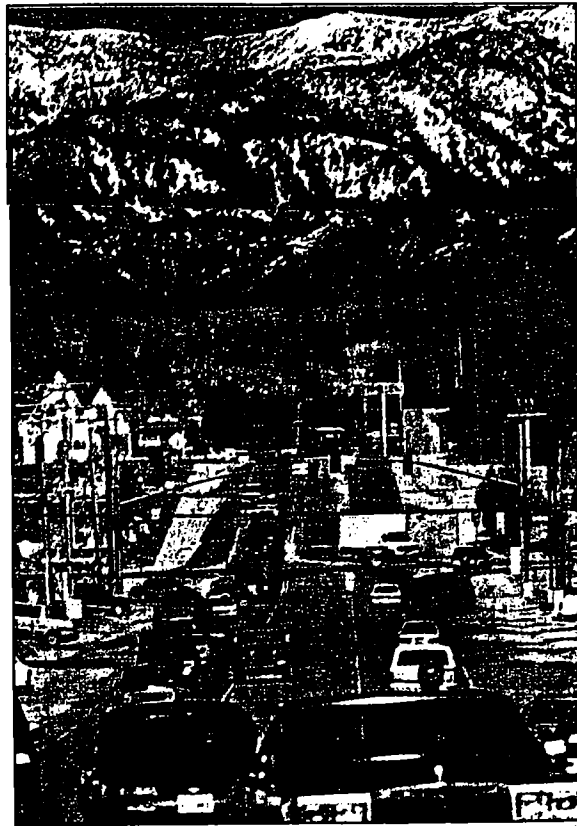
The impact of people on the central Sierra is the focus of a new research project funded by the U.S. Forest Service and the California Department of Forestry and Fire Protection.

"One of the things we're looking at is what happens when a forest is broken up by roads, shopping malls and other development," said Rowan Rowntree, a project manager with the Forest Service's Pacific Southwest Forest and Range Experiment Station in Berkeley.

"As you develop a region as large as the central Sierra, you remove pieces of its 'genetic architecture.' And we don't know what the long-term consequences of that are going to be."

Few places are feeling more pressure than Truckee.

Born a logging and railroad town in the 1860s, Truckee has long been one of



Bee/Randy Pench

Mount Rose and the Sierra Nevada overlook Truckee's Donner Pass Road, which, as is often the case, is heavy with traffic.

California's most scenic, historical and off-beat communities: more rural than urban, more old than new, more blue-collar than button-down.

In Truckee, location is everything. For more than a century, its vital statistics — 6,000 feet above sea level, second-coldest spot in the United States, except for Alaska, 100 miles from Sacramento — have kept all but the hardest Californians at bay.

Over the years, plucky Truckee has survived forest fires, mega-snowstorms and long winters of isolation. But today, Truckee is locked in a battle it may not win — with development.

An avalanche of building is rolling through town, turning forests into shopping centers, offices and three-bedroom homes. Every month, Truckee looks a little less like Truckee — and a lot more like everywhere else in California.

And in that, it is much like scores of other Sierra towns now facing a surge of development with limited resources, inadequate roads, insufficient room to expand — and a tradition on the line.

"Truckee is a town with a character," Schloss said. "But they're making it look like Everytown USA. There's simply no reason for that to happen."

In Truckee, one project in particular stunned many townspeople recently: the Gateway shopping center.

It began in dramatic fashion. Just after Earth Day in 1990 a large stand of pine trees came crashing to the ground along Truckee's main street, Donner Pass Road.

One year later, the \$12 million, 108,000-square-foot Gateway shopping center has taken root on the site.

"I was born in Orange County and remember when they tore down the first

orange trees for the first tract," said Truckee resident Nancy Richards.

"When they took those trees down for Gateway, I just came unglued. It was deja vu."

But Gateway's developer sees things differently.

"If the market was not there, the shopping center would not have been built," said Mike Perry, managing partner of the Wall Street Property Co. of La Jolla.

Truckee's population of 9,225 is hardly enormous. But it is up 62 percent from 1980. And most weekends, the numbers jump dramatically as tens of thousands of tourists pour into the Lake Tahoe and Truckee area.

Traffic problems, already legendary, are growing worse. And a once-brilliant blue sky is now smeared with wood smoke and automobile exhaust.

"Air quality is getting to be a serious problem," said Judd Dygert, a retired oil company engineer. "If you stand up on Rainbow Bridge and look out over town, it kind of reminds you of looking out over Los Angeles."

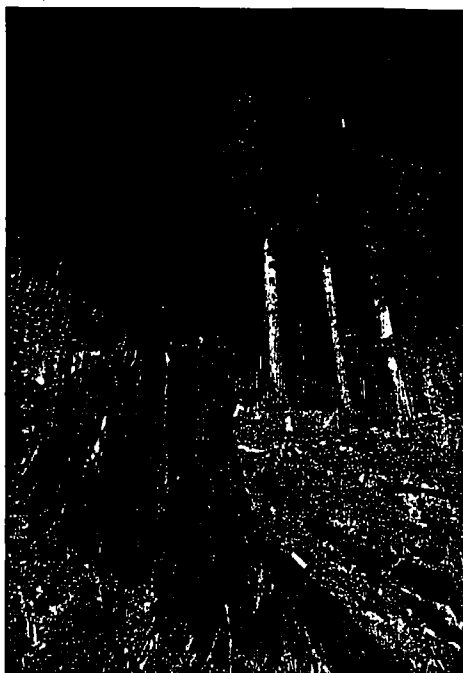
But if the problems are many, so, too, are the ideas for change: better traffic control, a ban on woodstoves, more bicycle trails, tougher controls on development, and so on.

Not long ago, a local group was formed to chart Truckee's future by updating the general plan for eastern Nevada County. The decisions are sure to be difficult, involving a delicate balancing of economic and quality-of-life factors. But at least they are being considered.

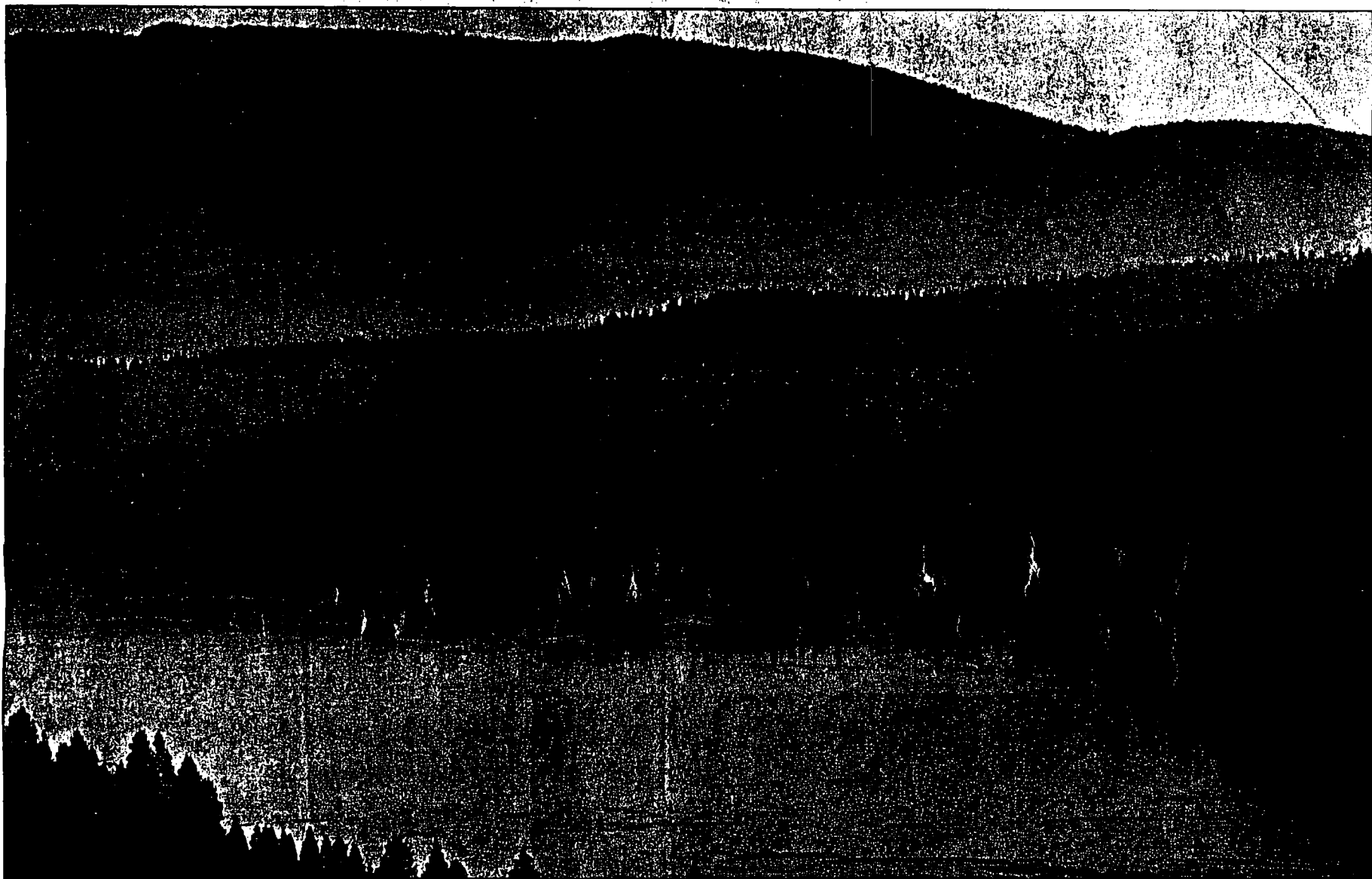
"Ten to 15 years ago, people weren't worried about these sorts of things," said former Planning Commissioner Albright. "But now, they're seeing the traffic increase and the trees come down. And they're starting to get concerned. The pendulum is swinging."

MAJESTY AND TRAGEDY:

THE SIERRA IN PERIL



From sequoia forest to scarred landscape, left — the aftermath of federal timber management in the Sequoia National Forest. Below, smoke from woodstoves in the Truckee area fills the once-clean sky above Donner Lake with a brown, foul-smelling and unhealthy haze.



Bee/Jay Mather

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- "An Inventory and Evaluation Strategy of Water Quality Problems Associated with Abandoned Mines on the Plumas National Forest," Plumas National Forest, P.O. Box 11500, Quincy, Calif. 95871.
- U.S. Soil Conservation Service, (916) 449-2817.
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- "Forestry Research — A Mandate for Change," 84 pages, National Research Council, National Academy Press, 2101 Constitution Ave. N.W., Washington, D.C. 20418.
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- "Inner Voice," a quarterly newsletter published by the Association of Forest Service Employees for Environmental Ethics. Contact Jeff DeBonis, executive director, P.O. Box 11615, Eugene, Ore.
- Sierra Club, (415) 776-2211.
- Sierran Biodiversity Project, (916) 292-3676.
- Enviroline — An electronic index of journal articles, government documents and other material, available through the DIALOG Information Service, 3460 Hillview Ave., Palo Alto 94304, 800-334-2564.

Why worry about Sequoia National Forest?

(If we just relax for another ten years, there will be nothing left to worry about.)

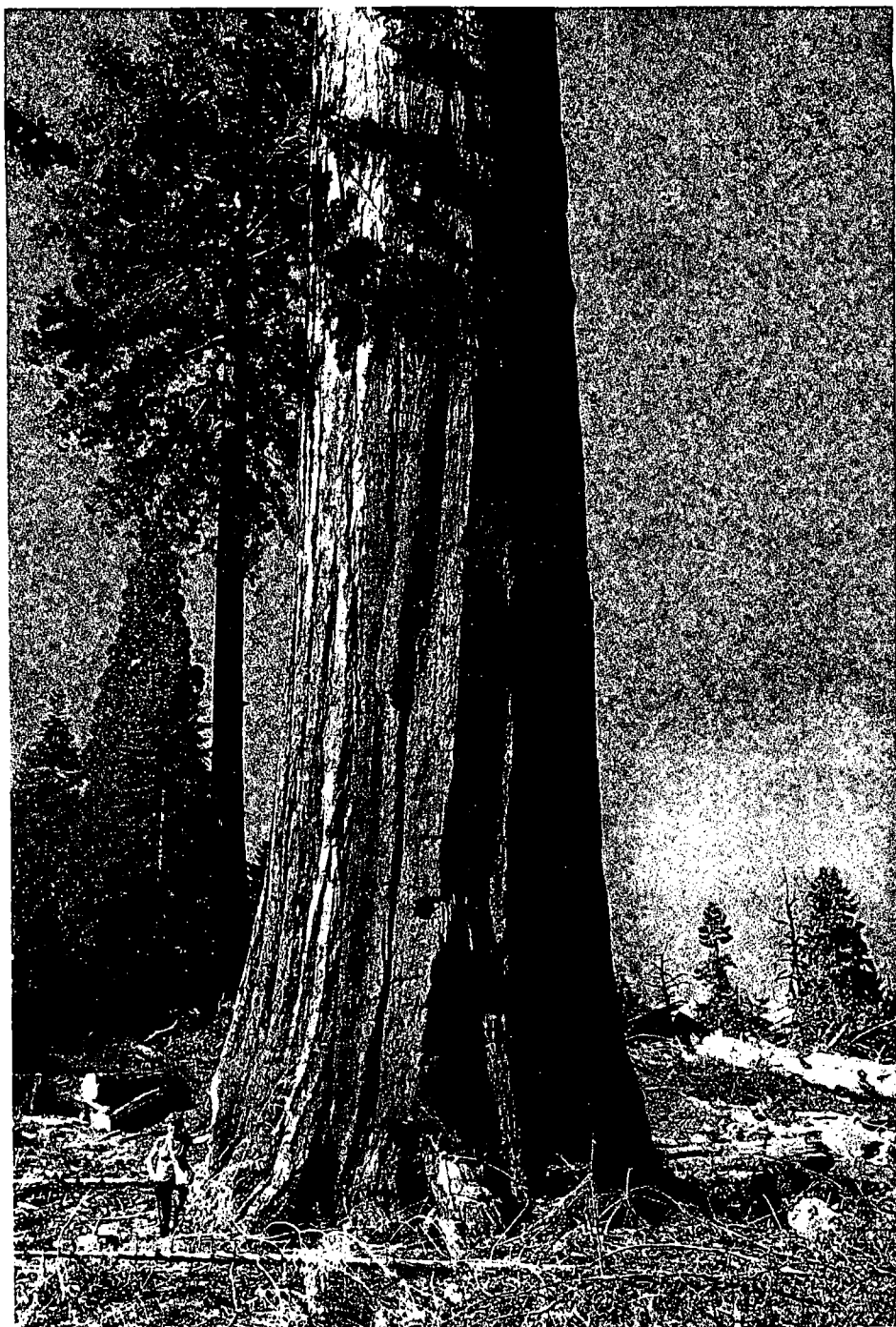
There are those who say it's already too late — that Forest Service "management" aimed at selling off the ancient forest and replacing it with even-age monoculture has gone so far that the remainder is not worth the fight to save it.

Others think we can rely on the Forest Service to honor whatever "swap deals" we can make to restrict logging in certain areas in return for our promise not to oppose timber sales elsewhere. We hold that both views are wrong.

Of all the acreage in the world defined as giant sequoia groves, almost two-thirds is on the Sequoia National Forest, where it has no statutory protection whatsoever. Some of the largest and oldest sequoias are there. No less important is the mantle of ancient forest — or what remains of it — connecting the groves in a rich continuum of life unique to the Sierra. Yet every day the great pines, firs, and incense cedars — irreplaceable monuments in themselves — come crashing down. And downhill goes the primeval soil into the streams, clogging trout gills and spawning beds alike.

It is up to us in the Sierra Club to rescue and protect the forest from the planned liquidation. We have managed to slow the waste to some degree with appeals, temporary restraining orders, and an unresolved lawsuit. But while we ponder, seek agreements, and take walks in the woods, the bulldozers rip into the virgin earth and the chainsaws continue to whine. Half of the available timber is gone; at the present rate of cutting, *all* of it will be gone in a decade.

Hence the *Sequoia Forest Alliance*. We shall not agree to more compromise where such brutal compromise is already in evidence at every turn. Logging and grazing of Sequoia National Forest must be kept to the sustainable levels required by law. Where others falter, we shall persevere; our new lawsuit is in preparation at this moment.



LION RIDGE: Two years ago, virgin wilderness

BLACK MOUNTAIN

There is hope. New legislation — the only real solution — to preserve the entire sequoia belt south of the Kings River has been drafted in Washington, where we have strong friends in both houses of Congress. But we face the possibility of a devastating drawback — any perception in Washington that the mighty Sierra Club may be willing to barter instead of fight.

Time is short; this winter is critical in terms of what can still be saved. This is more than a chapter issue, a regional issue, a California issue, or a national issue. The habitat of the largest, most majestic living things that have ever existed is a world issue that *must be won now*. Your check, payable to Sequoia Forest Alliance, won't be rewarded with a T-shirt, bumper sticker, or fancy wildlife calendar. Just a postcard of acknowledgement and thanks.

Sequoia Forest Alliance

P.O. Box 922, Kernville, California 93238

David Brower	Charlene Little	Wallace Stegner
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from Carl Kew

Intolerance for critics within the Forest Service

John McCormick headed the Forest Service's whistle-blower program from 1989 until his retirement in January. This article is based on his prepared testimony last week before the House Civil Service Subcommittee.

By John McCormick

WASHINGTON — The Forest Service simply does not tolerate freedom of dissent; "whistle-blower" is a four-letter word.

The agency has become comfortable with lying to the public, ignoring long-festering problems and serving the timber industry as government agents of environmental destruction rather than environmental protection.

I do not come to these conclusions lightly. I have dedicated my entire professional life to public service and am an outdoorsman in my personal time who deeply loves our environment, including the national forests.

After 30 years of hard work and sometimes risking my life to defend the law, I know when public service has been replaced by a sellout. That is the case at the Forest Service.

I joined the agency in 1976 and led investigations for successful prosecutions of negligence fires by logging companies, the government's first timber-theft case and its then-largest successful timber-theft prosecution.

In 1984, however, my career began to sour while I was the regional special agent in Alaska.

After uncovering instances of timber theft, improper road construction in the national forests, conflict of interest and personal corruption, I was ordered off key investigations and pressured into taking an assignment in Georgia. After another reassignment, I was exiled to a non-existent headquarters job.

To illustrate the low priority placed on whistle-blower charges I was ordered to handle those allegations, although there was no training or even a job description for nine months. At the whistle-blower desk it became obvious that my own nightmare was the rule rather than the exception.

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PHOTOCOPY
PRESERVATION

THE QUANTITY of whistle-blower allegations has increased sevenfold since 1987. What follows are examples of standard whistle-blower concerns that continue to go unheeded.

The Forest Service has done little to prevent timber theft. Loggers harvest trees that cannot lawfully be cut under environmental laws and then avoid paying the government for the trees because there is no record of the harvests having occurred.

On other occasions logging companies themselves, some with Forest Service permission, apply the markings that specify which trees can be cut legally. Illegal timber-harvesting techniques, particularly the use of heavy machinery that leaves diesel-oil spills and contaminates watersheds, are often overlooked. These areas are so sensitive that horses used to haul timber must wear diapers to avoid fouling the streams.

Reports and data have been tampered with to permit illegal harvesting in habitats necessary for endangered species such as the spotted owl and bald eagle.

There is a tradition of pork-barrel projects, such as a \$160 million contract for a road to nowhere in Alaska while I was stationed there.

Regional foresters have complete authority over whistle-blowing investigations, including those involving their own conduct. This has created an obvious conflict of interest.

Employees who do not cooperate with attempted cover-ups of agency misconduct are often punished. Employees are transferred across the country, sometimes by midlevel managers, with only two weeks' notice after the decision has been made. Forest Service regulations allow only the agency chief to make such decisions and require 30 days' notice before reassignment. Employees are also obstructed from doing their jobs: Training is denied, instructions are changed, information is withheld.

REGIONAL OFFICIALS often settle cases involving illegal logging by demanding repayment. This makes criminal prosecutions effectively impossible and has caused the U.S. attorney to drop cases. Further, in civil settlements, violators frequently are not required to repay the value of the timber, let alone the "triple stumpage" penalty. The crime remains profitable even when wrongdoers are caught.

Sexual corruption is illustrated by practices such as bringing prostitutes into a Forest Service district office and out into the forest in a "Love Van," financed by taxpayer dollars.

The most striking feature of these abuses is that they keep occurring. As long as the whistle-blower system at the Forest Service absorbs employee concerns rather than acting on them responsibly, the pattern of lawlessness will continue.

New York Times

In —
Oregon

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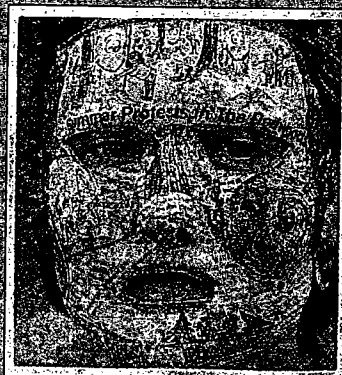
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SPECIAL REPORT

The Oregonian

FORESTS IN DISTRESS



Issues differ in California, but the issues in the Redwood Summer campaign mirror those in the Northwest.

Years of overcutting have taken their toll on Northwest forests. As jobs vanish, the timber industry

