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Summit of Silver Peak, Desolation Wilderness. A seasonal quota limits how many people may camp in the wilderness—one of the strategies used to protect popular areas. Photo by Pete Yamagata

Son of Option 9: the dreaded watershed analysis

By Steve Evans

Now that Option 9 (also known as the Clinton forest plan) has been upheld by a federal court, conservationists must turn their attention to its implementation by the federal agencies that manage public lands in the Pacific Northwest—the Forest Service and the Bureau of Land Management (BLM).

An important provision of Option 9, one requiring the immediate attention of active forest conservationists because it offers significant opportunities to restore "at risk" fisheries, and protect critical riparian and aquatic habitat and roadless areas, is the four-pronged aquatic conservation strategy (see glossary on page 4). Under the strategy, key watersheds—intended as refugia for declining salmon and steelhead stocks—are particularly important since these areas encompass some of the last remaining roadless areas and wild rivers in the region. The watershed analyses that will be prepared for these areas will chart how important watersheds and sensitive fish and wildlife species throughout the Northwest will be protected.

Since the final adoption of Option 9 by President Clinton in April 1994, the Forest Service has accelerated the key watershed analysis process because logging cannot be authorized until an analysis is completed. The acceleration of the analysis process—coupled with the fact that

watershed analyses are not subject to the strictures of the National Environmental Policy Act (NEPA) and, therefore, are not listed in the quarterly NEPA-compliance reports published for most national forests—has limited public participation in this important planning process.

Because conservationists must contact each forest or BLM district individually to determine the status of watershed analyses, it is difficult to present a comprehensive update. However, as of January 1995, at least one analysis apparently had been published in draft or final form for each of the four national forests in northwest California that are subject to Option 9—the Klamath, Six Rivers, Shasta-Trinity, and Mendocino.

Draft analyses for the upper South Fork Salmon River watershed of the Klamath National Forest and Pilot Creek in Six Rivers National Forest currently are available for public review (addresses on page 5). Final analyses have been published for the Butter Creek watershed of the Shasta-Trinity National Forest and the Middle Fork Eel River watershed of the Mendocino National Forest. The Forest Service currently is in the exploratory "scoping" process for its next Mendocino analysis—the Upper Main Eel River (which is not a key watershed). The next analyses planned for the Six Rivers National Forest are Grouse Creek (a sub-watershed of the Lower South Fork Trinity) and the North Fork Eel River.

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When popularity breeds havoc

Managing wilderness, it's been said, is managing the people who use wilderness. That is never more true than in the most popular wildernesses, places literally overrun with climbers, backpackers, day trippers, and equestrians. In the most popular parts of California's most popular wildernesses, an assortment of strategies is being used—with mixed success—to manage the multitudes.

The most popular wilderness destinations generally fall into one of two categories: the crown jewels and the urban fringe. Crown jewels include climbers' meccas and national treasures like Mounts Shasta, Whitney, and Lassen and the more accessible parts of the Yosemite Wilderness around Tuolumne Meadows and Yosemite Valley. Popular urban fringe destinations are the wildernesses of Pt. Reyes and the Los Angeles basin and, increasingly, the Tahoe basin as well.

Although the popularity of wilderness recreation may have dipped dramatically from its peak in the 1970s (good data are hard to come by), California's population is rising even more dramatically. And though some wilderness destinations inherently appeal to a limited constituency with specialized skills (not everyone can scale Mt. Shasta, and not everyone wants to), day use is skyrocketing at wildernesses close to metropolitan areas, a trend sure to continue.

Establishing more wilderness areas, desirable as that may be for other reasons, is not likely to decrease the demand on the most popular wildernesses since there are few wildlands remaining in the state that possess the attributes—resplendent beauty or proximity to urban areas—that attract the masses. Consequently, the job of containing overuse will remain with the same agencies—principally the National Park Service and the Forest Service—that already are struggling with it. The ultimate solution, of course, is controlling and then reversing population growth, but that is beyond the authority of wilderness managers.

That a solution is needed is evident. Lake basins near trailheads are littered with fire rings and a proliferation of sprawling campsites—a hundred or more in a single basin. Tangles of fishing line and streamers of toilet paper adorn trees and shrubs; other trees are stripped of their branches, living or dead, to fuel campfires, legal or not. In some places, human waste has posed such a problem that the Forest Service established a voluntary "pack it out" program.

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Coalition news

Monthly Report

The California Wilderness Coalition has always liked to buck trends. So now, while many national conservation groups are cutting back, we are expanding.

Our first expansion is in office space. We are poised to claim the office next door (with an adjoining door to our current Suite 5). I have coveted the small room for years, and it finally became vacant at a time when we can afford the additional rent.

The reason we need the extra space is an imminent expansion of our staff. Our fundraising efforts appear to be successful enough to lure Ryan away from his "day job" to work for us full-time. The prospect of the four CWC staff sharing our already crowded office filled us with apprehension since Ryan and I are known to carry on conversations that are overheard blocks away.

The new room is intended to be a quiet place of refuge for whichever of us needs to write, think, or just escape from the loud discussions, phone conversations, and clatter of keyboards in the main office. I don't seem to need this quietude as much as the rest of the staff, but then my hearing isn't what it used to be.

Our neighbors in the building will loan us some furniture, so our immediate needs are technological—phones and computers. We're negotiating with the Wilderness Society for their old phone system, and I keep scavenging spare parts to keep us word processing. But we are beginning to look like a technology museum rather than a cutting-edge environmental organization.

Hey, I'm not suggesting we all need PowerMacs on our desks to keep up (although I wouldn't mind one for editing videotapes). But running our fax modem (graciously donated by Scott Kruse) on a MacPlus is akin to watching snails race. And our machines won't allow us to plug in the oversized monitor Scott also sent.

So if any of you are upgrading to PowerMacs and want to donate your old Mac II, I'll be eternally grateful.

We have made it a top priority to get Ryan working on conservation issues for the Coalition full-time. Several recent events have brought us closer to our goal.

Many of our generous members donated to our recent fund appeal, making it the most successful ever. And the Foundation for Deep Ecology gave us a liberal grant to work on our portion of the Wildlands Project.

But we do need to make a quantum leap in income to expand our efforts. We hope two fundraising events will do the trick.

On May 14 (coincidentally Mother's Day), we will toast Senator Alan Cranston for his significant contributions to California wilderness. In all the years that I have worked to save wilderness, Senator Cranston's mark has been on every piece of legislation. We hope to raise a lot of money on that Sunday evening in Davis while honoring the senator.

In the fall, the good folks at Patagonia are planning a San Francisco fundraiser for the Coalition and the Wildlands Project. Patagonia has selected this visionary project as its theme for the year. Patagonia stores will feature local initiatives for saving wildlands, and the catalog will describe the project.

It is a little scary to think of increasing our income by 80 percent in one year, but if the last two months are any indication we are well on our way.

Ryan's dedication, enthusiasm, and work ethic are such that you will see a big difference when he is unleashed full-time. And if there has ever been a time when we needed new blood invigorating the wilderness movement, it is now.

Until yesterday I thought I'd be telling you that Wendy and I would be off to Chile for the month of March to visit my brother and his family. We were looking forward to visiting the wilds of that country, and both of us had been taking crash courses in Spanish.

Alas, the university decided to start classes two weeks earlier than expected, so my brother the professor could not spend the time with us we had hoped for. So that trip is deferred to another year.

We're still hoping to get away for a long trip, but now we are looking at the fall.

By Jim Eaton

CWC gets a jump start for Wildlands Project—\$10,000

The California Wilderness Coalition (CWC) has received a grant of \$10,000 from the Foundation for Deep Ecology to develop a network of corridors and buffers linking the state's wilderness areas. The foundation's support for the California portion of the continental Wildlands Project means the CWC will be able to devote more staff time and more resources to this ambitious undertaking.

Although the CWC inaugurated the California Wildlands Project at a working meeting for activists from around the state last September, progress has been frustrated by inadequate funds. Now, with the Foundation for Deep Ecology grant, conservation associate Ryan Henson and executive director Jim Eaton will be able to devote considerably more time to the project.

Their first tasks will be forming a steering committee and organizing regional meetings where activists will refine the preliminary maps begun in September that are now being digitized. Anyone interested in participating in the California Wildlands Project who is not already on the mailing list should notify the CWC (2655 Portage Bay East, Suite 5, Davis, CA 95616; jeaton@wheel.ucdavis.edu).

The Foundation for Deep Ecology was one of the first organizations to support the Wildlands Project when other groups were unwilling to back so controversial an endeavor. We thank the foundation not just for its money but its courage and foresight as well.

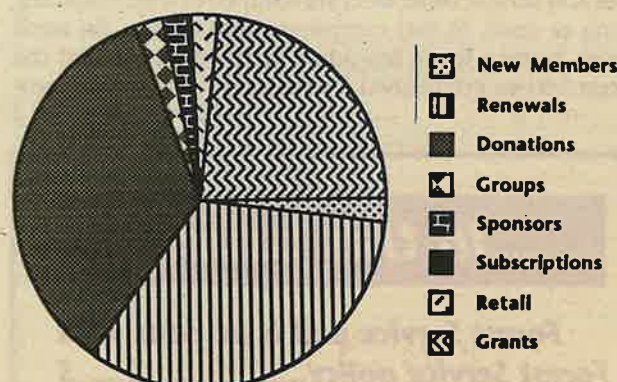
Needed: one Mac II (and spare parts, too)

Big changes are coming to the California Wilderness Coalition. Conservation associate Ryan Henson will soon join us as our only full-time employee, and to accommodate our expanding workload and staff, we have leased the small room that adjoins the current CWC office. Tellingly, we have dubbed the new office space the "quiet room" and declared it off-limits to the coffee klatching and electronic hubbub that characterize the main office.

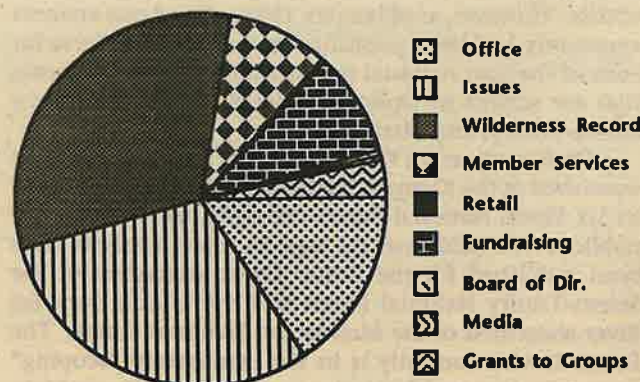
We do not plan to revert to abacus and eyeshades, however, and a donation of a computer would be most welcome. Specifically, we're trolling for a Macintosh II to use with a donated monitor (thanks again, Scott) and a Mac Plus keyboard and mouse so our resident mad scientist can cobble together another FrankenMac. If you can help, contact Jim Eaton at (916) 758-0380.

1994 Budget

Income



Expenditures



The California Wilderness Coalition took in \$54,712 in 1994, more than we spent (\$54,085) and about \$10,000 more than our 1993 receipts. Our ambitious budget goal for 1995 is \$80,000.

Letters

Dear Editor,

Recent informative articles about Pt. Reyes National Seashore failed to point out that a significant portion of what could be untrodden wilderness continues to be a publicly subsidized cow pasture. Why are the 30-year leases to farmers apparently being renewed? Is there no opposition to continued grazing at Pt. Reyes?

John Miller
Los Gatos

We were unable to confirm that grazing leases are being renewed. Grazing at Pt. Reyes is allowed under a variety of arrangements (leases, special use permits, and reservations), all of which will expire eventually. Continued agricultural use of Pt. Reyes was authorized by Congress when it established the national seashore—one of the many political compromises that have been the price of protecting parks and wilderness areas. We don't like it either. —Ed.

Trivia question on page 3.

Wilderness management

Tactics for managing the popular wilderness

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gram for Mt. Shasta's popular climbing routes, and a toilet was installed atop Mt. Whitney.

Some people would cite the scarcity of solitude at these destinations as another casualty of popularity, one the agencies should be addressing. (The Forest Service itself pointed to the often-misinterpreted solitude clause of the Wilderness Act when it proposed establishing quotas for Mt. Shasta.) But though the opportunity for solitude is certainly a desirable attribute of wilderness, it is neither a precondition for wilderness designation nor a requisite for wilderness management.

What's a manager to do?

Wilderness managers have a toolchest full of strategies for managing the people who overrun wilderness. What they choose depends on a number of factors: not just efficacy but cost, public acceptance, local conditions, and legal imperatives as well. No single approach is perfect, and most are rearguard actions. Direct strategies that restrict how the wilderness is used—like quotas and closures—offer more control but also tend to be more intrusive than indirect strategies.

One of the most intrusive, and most widely employed, strategies is the quota, a set limit on the number of people who legally may enter an area at a time. California's best-known quota is probably at Mt. Whitney in the John Muir Wilderness, where demand so exceeds the supply that permits to climb Whitney are assigned by lottery. Quotas may be in effect year-round, as at the Phillip Burton Wilderness of Pt. Reyes National Seashore, or seasonally in the case of areas that are snowbound for much of the year. Managers may employ quotas to limit day use or overnight use or both. Quotas usually are enforced by requiring a permit to enter the wilderness

(though many wilderness areas that require permits do not have quotas), but they also can be implemented by requiring overnight users to stay at an established, limited network of campsites, as at Pt. Reyes.

Apart from being burdensome on wilderness users and costly to administer and enforce, quotas may have the effect of dispersing use. When a quota was proposed for the Mt. Shasta Wilderness, climbers argued that adopting a quota would divert climbers from Avalanche Gulch, the main staging area for summit ascents where current use far exceeds the proposed quota, to more dangerous parts of the mountain. The question of safety aside, dispersing use is always controversial since it protects the popular destination from further degradation at the expense of less popular, often more pristine areas.

A second, widely used approach is closures, restrictions on what activities are allowed. Overused lakes are closed to camping, and alpine areas may be closed to campfires. The principal advantage of closures is that managers can target just the activity that is causing the problem. The disadvantage, of course, is that the wilderness experience is trampled, the more so if signs are erected to announce the closure. Closures also are difficult to enforce, and they may cause dispersal.

Where trails go, people go

Constructing a new trail or extending an existing one will encourage people to disperse, to explore new parts of the wilderness. (Paradoxically, since most wilderness visitors travel on or near trails, trails also tend to concentrate use.) Trail construction may be a necessary complement to a closure, as the Forest Service has discovered at Five Lakes Basin in the Granite Chief Wilderness (see companion article). Building a trail in wilderness is always expensive, however, since agency regulations forbid or restrict the use of power tools and motorized vehicles. On the other hand, recreationists like trails more than they like quotas or closures, and they sometimes volunteer to help build them.

Rather than disperse use, managers sometimes elect to concentrate use. Where other strategies attempt to minimize or control how a popular area is used, the opposite approach is to contain people and their impacts within the desired area, leaving the remainder of the wilderness pristine. Trails are one way of concentrating use; another, employed by the National Park Service at Pt. Reyes, is requiring overnight visitors to stay in assigned campsites, a system that predates the wilderness. The disadvantage to concentrating use is implicit in the term "sacrifice areas." Just as dispersing use protects popular areas at the expense of pristine ones, concentrating use protects the pristine majority of the wilderness but sacrifices the popular areas.

Another tactic for managing popular places is to leave them out of the wilderness, a tactic that undoubtedly has adherents among managers of popular areas. Although this strategy does nothing to minimize the popularity of a



Brokeoff Mountain and Eagle Peak from the Mt. Lassen Trail. The popular trail was left out of the Lassen Wilderness to afford the Park Service more management flexibility.
Photo by Jim Eaton

destination, it can afford managers more flexibility to employ signs or mechanized equipment. The trail that leads to the summit of Mt. Lassen and the summit itself were left out of the Lassen Wilderness at the urging of the Park Service for just that reason. Had Little Yosemite Valley been left out of the Yosemite Wilderness, the Park Service's recent proposal to construct a ranger cabin there would have been less controversial. If excluded areas are surrounded by wilderness, however, agencies are nonetheless limited to management strategies that do not adversely affect the wilderness.

Is it time for user fees?

A strategy that has not been tried in California is imposing user fees. By charging a fee only for the most popular areas (or by charging a higher fee), managers could raise funds to defray some of their expenses and encourage recreationists to try less popular areas. The drawbacks of user fees are obvious: inequities, dispersal, enforcement and administrative costs, and an incentive for managers of less popular areas to provide amenities like trails or fishing opportunities to attract paying customers.

A benefit—or drawback, depending on your point of view—is that user fees would indicate to Congress and to the managing agencies that wilderness pays, a proposition that could have profound political and environmental implications.

None of the strategies already discussed can succeed unless accompanied by education. Although there certainly is a maximum carrying capacity for any wilderness destination, in most cases it is not so much a question of how many but *how*. If minimum-impact camping techniques were universally known and employed, some of the restrictions now in effect probably could be lifted, and there would be less red tape between us and the call of the wild.

Trail extension planned for Granite Chief Wilderness

In 1993, the Forest Service closed the beleaguered Five Lakes Basin in Granite Chief Wilderness to camping, but the ban on overnight use has not appreciably diminished the lakes' appeal to recreationists looking for a short, easy hike into the wilderness of the Sierra Nevada. On the principle that if you build it, they will go, the Forest Service is now considering extending the trail that currently ends at Five Lakes Basin to direct visitors to campsites the agency has established downstream of Five Lakes and to the Pacific Crest Trail beyond.

With Five Lakes Basin closed to camping, hikers who arrive there unawares are at a loss. Some camp at the lakes anyway, compounding the problems—erosion, soil compaction, wetlands degradation, and damage to prehistoric cultural sites—that led to the closure in the first place. Other would-be campers scout around for a legal campsite, creating a maze of casual trails that only further confounds the next batch of visitors.

Five Lakes Basin also attracts swarms of day hikers, but for now the Forest Service is focusing its efforts on controlling overnight use because camping is easier to regulate and causes more problems.

The 1993 management plan developed for the Granite Chief Wilderness anticipated that a trail extension might be a necessary complement to the camping prohibition at Five Lakes. The current proposal includes not only a trail extension but trail rehabilitation and reconstruction where needed as well.

The Forest Service is soliciting public input for consideration in an upcoming environmental review of the proposed Five Lakes Extension trail. Comments on the proposal should be sent by February 20 to the Truckee Ranger District, Tahoe National Forest, 10342 Highway 89 North, Truckee, CA 96161. For more information, contact the ranger district staff at (916) 478-6257.

Although there certainly is a maximum carrying capacity for any wilderness destination, in most cases it is not so much a question of how many but how.

Wilderness Trivia Question

What are the dominant rock types in the Modoc's roadless areas?

Answer on page 7

Ancient forests

Watershed analyses mean a torrent of work for activists

continued from page 1

A detailed review of Middle Eel analysis completed for the Mendocino National Forest last fall provides a glimpse of what can be expected in the future.

Case study:

The Middle Fork Eel River watershed analysis

The Forest Service distributed limited notices to the public requesting scoping comments for the preparation of this analysis in August 1994 and published a final analysis early in October 1994. No draft document was distributed for public review and comment. The agency currently is finalizing a list of proposed restoration projects based on the analysis.

The Middle Eel River is one of three key watersheds in the Mendocino identified in Option 9 (the other two—Black Butte River and Thatcher Creek—are tributaries of the Middle Eel). The Middle Eel River originates in the Yolla Bolly-Middle Eel Wilderness and flows south and then west to the national forest boundary. The Middle Eel was identified as a key watershed because it supports runs of summer steelhead, winter steelhead, and fall chinook salmon that have been determined to be at risk. Spring chinook and coho salmon runs have been extirpated in the upper Middle Eel drainage.

According to the Forest Service, the Middle Eel watershed produces more sediment per square mile than any river of comparable size in the United States. The agency's watershed analysis notes that "massive landslides" and "creeping overburden" are common features in the 205 square mile drainage. Roads have produced the "majority of damage to water courses, affecting both water quality and fish life." The approximately 216 miles of roads in the

watershed will "probably cause more damage to fishery resources" if a catastrophic flood should occur.

Ironically, much of the roaded portion of the watershed which is now causing massive erosion and sedimentation problems was part of the original Middle Eel-Yolla Bolly Primitive Area. Nearly half of the administratively designated primitive area was opened to road building and logging in the 1950s (happily, not all of the opened portion has been logged), leading to the subsequent decline of the watershed's anadromous fishery.

A critique by conservationists of the Middle Eel watershed analysis has identified the following areas of concern:

- Despite Option 9's specific prohibition against road building in roadless areas, the analysis fails to mention the 2,000 acres of inventoried roadless land adjacent to the Yolla Bolly-Middle Eel Wilderness and nearly 3,000 acres of uninventoried roadless area in the vicinity of Red Rock.

- The analysis fails to acknowledge that sediment filling in deep holding pools destroys critical habitat for anadromous fish. Habitat studies of some Columbia River tributaries in the Pacific Northwest have found that more than 60 percent of the critical pool habitat has been lost to sedimentation as a result of logging, road building, and grazing. Shallower pools mean higher water temperatures—often the primary limiting factor for salmon and steelhead runs which need to "summer over" in deep pools.

- Grazing impacts on headwater meadows are considered by the agency to be "not as significant" as conifer encroachment and groundwater depletion. In fact, conifer encroachment and groundwater depletion are symptoms of overgrazing in meadows.

- No cumulative watershed analysis is provided for the entire watershed. A watershed-wide analysis probably would determine the watershed to be beyond its threshold of cumulative impacts. The agency's Orwellian decision to perform its "cumulative analysis" one project at a time makes it hard to determine the overall health of the watershed.

- The analysis emphasizes the need to reduce fire hazard caused by more than 100 years of fire suppression but fails to determine how this can be done without further disturbing the watershed.

- Despite the acknowledged sensitivity of the watershed to disturbance, the analysis fails to consider whether the standard Option 9 riparian reserves are sufficient to protect riparian and aquatic resources.

Some of the problems with the Middle Eel analysis identified by conservationists may be universal to the analysis process. For example, the Pilot Creek watershed analysis for the Six Rivers National Forest fails to mention the existence of the Pilot Creek Roadless Area identified in the second national inventory of roadless areas (RARE II). More than half of the roadless area has been roaded and logged in the past decade, which has contributed to the



Middle Fork Eel River, Yolla Bolly-Middle Eel Wilderness Photo by Ryan Henson

decline of the riparian and aquatic environment and the watershed's steelhead fishery.

How these issues will be dealt with in the Forest Service's restoration plan and future management of the Middle Eel watershed remains to be seen. Conservationists are proposing an aggressive "top down" road closure program targeting the upper portions of the Indian Dick, Blands Cove, and Red Rock roads adjacent to the Yolla Bolly-Middle Eel Wilderness. From a conservation biology viewpoint, this proposal would enhance the ability of the wilderness to provide core habitat for several sensitive, threatened, and endangered species, while reducing a source of the erosion and sedimentation that degrade the riparian and aquatic environment.

What you can do

It is critical that conservationists monitor the watershed analysis process to ensure that the Forest Service and BLM comply with Option 9's direction to protect roadless areas and riparian reserves and initiate meaningful restoration by reducing the road system. Some things you can do to support implementation of the aquatic conservation strategy are:

- Contact the Forest Service and ask to receive scoping
- continued on page 5

A glossary for Option 9

Option 9's aquatic conservation strategy to restore the productivity of riparian and aquatic ecosystems on public lands has four interconnecting components:

Riparian Reserves where commercial logging is prohibited and road building is restricted within 300 feet on each side of fish bearing streams and natural lakes; 150 feet along non-fish bearing streams and reservoirs or wetlands greater than one acre; and 100 feet along seasonal streams, wetlands less than one acre, and unstable or potentially unstable areas.

Key Watersheds are refuges ("refugia") for "at risk" stocks of salmon and steelhead. Option 9 protects key watersheds by prohibiting new roads in roadless areas, encouraging the reduction of the road system, prohibiting a net increase in road mileage outside of roadless areas, making restoration the primary management goal, and requiring a watershed analysis prior to any major management activity.

Watershed Analyses provide the information to guide future management, set and refine riparian reserves, develop restoration activities, and establish monitoring programs. No major management activity or change in the width of a riparian reserve is allowed until an analysis is completed. A watershed analysis is considered a data collection activity and therefore not a decision document under the National Environmental Policy Act (NEPA), but management activities proposed as a result of the analysis are subject to a subsequent project-level NEPA analysis. Eventually, the Forest Service intends to conduct a watershed analysis for all watersheds in the national forests of the Pacific Northwest, not just those designated as key watersheds under Option 9.

Watershed Restoration is intended to recover degraded habitat by removing and upgrading roads, thinning small trees to promote the growth of large conifers in riparian reserves, and restoring channel complexity. Restoration is not intended as mitigation for poor land management practices. —Steve Evans

The agency's Orwellian decision to perform "cumulative analysis" one project at a time makes it hard to determine the overall health of the watershed.

Key watersheds in California

Shasta-Trinity NF
North Fork Trinity River
Canyon Creek
South Fork Trinity River
New River

Six Rivers NF
Smith River
Lower South Fk. Trinity River
Horse Linto Creek
Camp Creek
Blue Creek
Bluff Creek
Red Cap Creek
North Fork Eel River
Pilot Creek

Klamath NF
Salmon River
Wooley Creek
Elk Creek
Dillon Creek
Clear Creek
Grider Creek

Mendocino NF
Middle Fork Eel River
Black Butte River
Thatcher Creek

Ukiah District BLM
South Fork Eel River
Cedar Creek
Mattole River

Roadless areas

Cry wolf!

Forest Service wants comments on grazing in Modoc's Steele Swamp RA

By Ryan Henson

The 48,000-acre Clear Lake grazing allotment in the Modoc National Forest occupies a high plateau of bunchgrasses, vernal pools, swamps, juniper thickets, and sagebrush fields more reminiscent of Nevada and eastern Oregon than California. Two potential wild-and-scenic rivers, Boles and Willow creeks, flow through the allotment which overlaps the Steele Swamp Roadless Area. The Clear Lake allotment is an important haven for plants and wildlife, supporting pronghorn antelope, sage grouse, a profusion of waterfowl, and several sensitive wildlife species, including bald eagle, willow flycatcher, Lost River and shortnose sucker fish, and western pond turtle. The area is so wild that Dave Foreman of the Wildlands Project recently noted that it would make an excellent wolf refuge.

Unfortunately, 100 years of grazing not only have driven out all the wolves but begun to take a toll on the other wildlife and plant species of the Clear Lake allotment. Many parts of the allotment suffer from exotic grasses, stock ponds, roads, and degraded riparian areas—the results of intensive livestock production. Currently, 750 cattle graze in the area from April through October every year.

To correct some of the grazing problems in the allotment, the Forest Service is proposing to construct nearly ten miles of fence, reduce the stocking rate to 675 head, and convert 1,000 acres of sagebrush, aspen, and other shrubs to grasslands. As a first step, the agency must prepare an environmental assessment (EA) to analyze the proposed actions and their likely effects on animals, plants, watersheds, and other values of the area.

What you can do

The Forest Service is seeking comments from the public until February 15 on issues it should consider in the EA. You can help protect this wildland and the plants and animals it supports by writing Bernie Weisberger, District Ranger, Doublehead Ranger District, P.O. Box 369, Tullake, CA 96134 and requesting that the Forest Service:

- protect the primitive character of the Steele Swamp Roadless Area by prohibiting any grazing-related development in the area;
- preserve the ecological, aesthetic, and recreational values that make Boles and Willow creeks potential wild-and-scenic river candidates;
- prohibit grazing in wetlands and riparian areas;
- use fire to replicate natural fire patterns—not just to create additional forage for cattle; and
- prohibit further grazing-related road and reservoir construction.

Forest Service accused of whitewashing a poll that skewed green

Although a May 1994 poll privately conducted for the Forest Service indicated that conservation is valued more highly than any commodities that can be extracted from our national forests, the Forest Service's summary of poll results was considerably less forthright, according to Public Employees for Environmental Responsibility (PEER), which recently obtained the unretouched results of the poll. Jack Ward Thomas, who heads the Forest Service, has denied that his agency tried to cover up poll results at odds with current policy.

Among the findings of the poll of 500 randomly selected U. S. households was a clear support for conservation of national forests: 79 percent of respondents agreed that the long-term health of forests should not be compromised by a short-term demand for forest products. When asked if natural resources in public forests and rangelands should be made available to produce consumer goods, 47 percent disagreed (26 percent strongly), while only 36 percent agreed. A whopping 82 percent believe the primary goal of national forest management should be to maintain a healthy environment. And in marked contrast to some of the rhetoric emanating from Capitol Hill, 65 percent of respondents favored increased federal regulation of public forests and 59 percent said the federal government should regulate how private land is used.

Forest Service Chief Thomas was quoted in a January 22, 1995, Associated Press story as saying "It is very difficult to understand what the public was thinking about when they responded to these questions."

Herger bill would open Shasta to development

Rep. Wally Herger (R-Marysville) has introduced legislation that would strip Mt. Shasta from the National Register of Historic Places and amend the National Historic Preservation Act to preclude historic designation of landscapes that do not contain "physical evidence" of their cultural or historic significance.

Mt. Shasta was included in the National Register in 1994 in recognition of its importance to Native Americans as a sacred site. Protests by people who value Mt. Shasta for its recreational or commercial potential subsequently led to a re-evaluation. Currently, only Panther Meadows and the wilderness heights of Mt. Shasta are listed in the register, leaving the lower slopes vulnerable to development.

Although historic designation does not outlaw development, any projects proposed for a historic site must be reviewed to determine their impacts on the qualities or features that led to the listing. Historic status was embraced by conservationists who hoped it would prevent logging and construction of new downhill-ski facilities on parts of the mountain that lack any other protective designation.

For the Mt. Shasta Wilderness, which is still in the register, historic status means decisions about wilderness management cannot be made without considering their effects on the mountain's spiritual importance to Native Americans. No developments are planned for the wilderness, but some Native Americans believe climbers are sullied the sacred site. Since there is no precedent for managing a wilderness that is also a listed sacred site, the Forest Service's ordinary planning for the Mt. Shasta Wilderness has come to a standstill.

Clavey project may be mothballed

Conservationists who believe the Clavey River and Tuolumne Roadless Area are worth more than a dam may get good news: staff for the Turlock Irrigation District (TID) have proposed deferring the district's plan to develop the Clavey River for its hydroelectric potential. The staff recommendation comes in the wake of a Federal Energy Regulatory Commission finding last fall that the irrigation district's proposed 400-foot-high dam would result in unacceptable environmental impacts on one of the Sierra Nevada's last free-flowing rivers.



In proposing to defer the \$700 million hydroelectric project, TID staff confirmed what had been obvious to the project's opponents all along—power demand is down and there are cheaper sources of electricity available without building a destructive new dam.

Although the decision can be considered another nail in the coffin of the controversial project in the heart of the Tuolumne Roadless Area west of Yosemite National Park, TID staff cautioned that deferring the project should in no way be construed as abandonment. The TID board is expected to act on the staff recommendation early in February.

Watershed analyses

continued from page 4

notices and a copy of the analyses that concern to you (see page 4 for list of key watersheds).

- Ask to be placed on the agency's quarterly NEPA schedule. Monitor the list of NEPA activities for subsequent projects and review project-level environmental analyses to ensure they comply with Option 9.

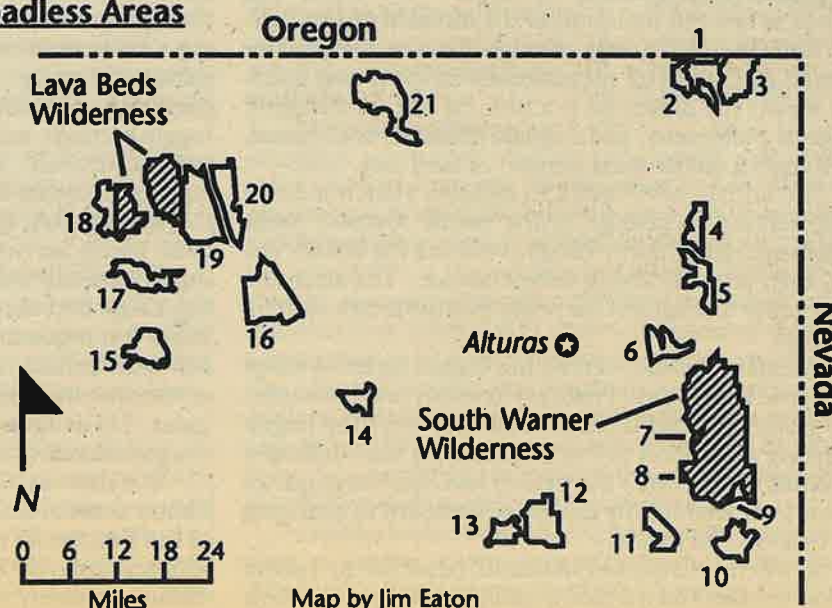
- Send a letter to Mendocino forest supervisor Daniel K. Chisholm urging him to adopt an aggressive road closure program to restore the Middle Eel watershed. Support closure of the Indian Dick, Blands Cove, and Red Rock roads adjacent to the Yolla Bolly-Middle Eel Wilderness to enhance biodiversity and protect the aquatic and riparian environment for the Middle Eel's "at risk" steelhead and salmon fisheries.

The addresses are: Klamath National Forest, 1312 Fairlane Road, Yreka, CA 96097; Six Rivers National Forest, 1330 Bayshore Way, Eureka, CA 95501; Shasta-Trinity National Forest, 2400 Washington Avenue, Redding, CA 96001; Mendocino National Forest, 825 N. Humboldt Avenue, Willows, CA 95988; Ukiah District BLM, 555 Leslie Street, Ukiah, CA 95482.

Steve Evans is conservation director for Friends of the River.

Modoc National Forest Roadless Areas

- 1 Crane Mountain
- 2 Mt. Bidwell
- 3 Mt. Vida
- 4 Powley
- 5 Soldier
- 6 Dry
- 7 Mill
- 8 Jess
- 9 Bear Camp Flat
- 10 Hat Mountain
- 11 Parsnip
- 12 Sears Flat
- 13 Knox Mountain
- 14 Big Canyon
- 15 Burnt Lava Flow
- 16 Damon Butte
- 17 Mt. Hoffman
- 18 Callahan Flow
- 19 Lavas
- 20 Dobie Flat
- 21 Steele Swamp



Wilderness news

Wilderness primer

Go figure

Taking the measure of wilderness

By Jim Eaton

It has come to my attention that we often use terms of measurement in the *Wilderness Record* that not everyone can fathom. Words like 'acre,' 'section,' and 'board foot' are bandied about with the assumption that our readers can measure up to the challenge.

So for anyone who can't tell an acre from a square mile, a section from a township, or a board foot from a cord, here is my simple explanation: an acre is 160 square rods, a section is 64 square furlongs, and a board foot is a piece of a once-living tree that now measures one inch by 12 inches by 12 inches. Wasn't that easy?

Those of you with British blood in your veins (like me) can blame your ancestors. They brought most of these measurements with them when they settled the New World.

Okay, an acre isn't intuitively obvious. It originally meant the amount of land a yoke of oxen could plow in one morning, but of course that varied in different terrain. So the English monarchy set an acre equal to a rectangle of land 40 rods long by 4 rods wide (a rod was a piece of wood five-and-a-half yards long used the way a yardstick is today). The 40 rods equalled one furlong (furrow-long, the length of a plowed furrow). Those of you into horse racing already know a furlong is 220 yards.

1 mile = 8 furlongs = 320 rods = 1,760 yards = 5,280 ft.

We'll get back to the acre soon. Meanwhile, let's look at our mile. This originated with Roman legion marching distances. *Milia passuum* was a thousand paces, a shade over 5,000 feet. But that didn't fit the English system of measurement, so they made a mile exactly eight furlongs long (about 1,050 paces).

If you are over 45, your slide rule shows that there are 640 acres to the square mile (you younger folks can determine this with a calculator or cheat and use a conversion table).

Too abstract? Here are some real-life examples:

A football field is about one-and-a-third acres (1.1 acres without the end zones). A baseball diamond is about a fifth of an acre. A tennis court is about one-twentieth of an acre (one-fifteenth for doubles players).

The City of San Francisco is 29,504 acres (about equal to the Dinkey Lakes Wilderness). Lake Tahoe covers 122,240 acres, roughly the size of the Emigrant Wilderness.

California is slightly over 100 million acres, making percentages easy to calculate. We have about 14 million acres of wilderness, so about 14 percent of the state is protected as wilderness.

Cartographers get into the act

Miles are the standard in mapping, and most topographic map users are familiar with lines representing square miles. The lines stem from a system recommended to Congress by Thomas Jefferson in 1785.

Much of the United States has been mapped using a system of townships and ranges. Township lines run east-west and range lines run north-south. The lines are drawn six miles apart, so a "township" is a square of 36 square miles. Each square mile within a township is known as a section. The numbering system for townships, ranges, and sections is used to indicate locations on a map, using a shorthand like T5N, R9W, S15.

But since these lines were drawn by surveyors who sometimes were in rough terrain (or in saloons when they were supposed to be surveying), odd-shaped sections can be found on some maps.

Most topographic maps used by hikers are at a scale of 1:62,500 (meaning 1 inch on the map represents 62,500 inches on the ground, or about 1 inch to the mile) or 1:25,000 (about 2.5 inches to the mile). At either scale, sections often are indicated by black lines, usually measuring a square mile (640 acres).

Why this obsession with acres? It probably results from land ownership being measured in acres rather than square miles. Even when properties are large, acreage is more often given than square mileage.

In his 1937 inventory of roadless areas, Bob Marshall chose 100,000 acres as the minimum size for a wilderness. This led to Forest Service Regulation U-1, which allowed for administrative protection of wilderness areas of this size or larger. Recognizing the importance of smaller areas, Regulation U-2 allowed parcels of 5,000–100,000 acres to be established as wild areas under the same management as their larger cousins.

The Wilderness Act of 1964 kept the 5,000-acre minimum standard, although it allows for smaller wilderness "of sufficient size as to make practicable its preservation and use in an unimpaired condition." The smallest California wilderness is a 141-acre rookery west of San Francisco, the Farallon Island Wilderness.

In recent years, conservation biologists have learned that smaller roadless areas also have value for wildlife and are asking that the 5,000-acre minimum benchmark be ignored.

How much wood...

Trees are not rectangular. Lumber usually is. Cutting rectangular boards from tapered, cylindrical logs leaves considerable mill "waste" of end trimmings, slabs, and sawdust, often more than a third of the tree.

Tables known as log rules are used to calculate how much wood can be extracted from logs of various sizes. Log rules that indicate the amount of lumber that theoretically can be cut from logs of various lengths and diameters are measured in board feet; log rules that indicate the total content of logs are measured in cubic feet.

As mentioned earlier, a board foot is a piece of wood one foot long, one foot wide, and one inch thick. Of course, boards are milled in different shapes, often in 16-foot lengths, but they always are measured in board feet.

Wood measurements are strange. Your typical two-by-four really measures about one-and-a-half by three-and-a-half inches. The disparity is attributed to shrinkage and finishing of the lumber.

So how many board feet in a tree? It depends. Ronald Reagan notwithstanding, trees vary greatly in size. A large ponderosa pine might contain a bit more than 1,000 board feet. It takes 10,000 board feet (20 cords) to build the average 1,800 square foot home.

The metric alternative,

or What the heck's a hectare, anyway?

The French Revolution, that outgrowth of rationalism, gave us the metric system, in which the earth itself is the fundamental standard of length. The meter was defined as one ten-millionth of the distance of a straight line from the North Pole through Paris to the equator (though an inaccurate measurement of the global quadrant means the definition is a little bit off). A thousand meters is a kilometer, and a square kilometer is a hectare, the standard metric measurement of land area.

The British, never quick to embrace French innovations, refused to change to the metric system. Most English-speaking countries have retained the British system, even after obtaining independence. The scientific community throughout the world uses the metric system, however.

Thomas Jefferson wanted the United States to adopt the metric system (and President Kennedy once remarked to a group of Nobel laureates that they were the largest gathering of intellect in the White House since Jefferson last dined there alone.) But neither Jefferson's urgings nor several later attempts by Congress succeeded in changing the U. S. over to metric.

So we cling to our old standards, based on the pace of Roman soldiers and the plowing abilities of oxen. But then again, how many of you can picture a hectare?



Port Orford cedar (*Cupressus lawsoniana*) grows in moist environments. Photo by James R. Shevock

Forest Service sued over plan to save Port Orford cedar

Seven conservation groups have sued the Forest Service and Bureau of Land Management over the government's controversial strategy to contain the spread of a non-native fungus that is killing Port Orford cedars in the Pacific Northwest, a strategy that includes logging uninfected trees. The fungus, *Phytophthora lateralis*, causes an incurable root rot that is always fatal to the cedars and can also kill Pacific yews.

At issue in the suit is how best to contain the spread of the fungus, which can persist for years in soil even in the absence of host plants. The unintentional transport of infected soil is responsible for most of the fungus' spread through southwestern Oregon and northwestern California. Since mud-caked logging trucks and road-maintenance equipment have been implicated in the spread of the fungus, the seven plaintiffs say it is critical to close logging roads and otherwise restrict vehicles from uninfected areas. The government strategy recommends logging all cedars that grow within 150 feet of roads.

In their suit, the conservation groups contend that a 1988 Forest Service plan to contain the fungus is both inadequate and illegal: inadequate because it is not working, illegal because it violates the National Environmental Policy Act requirement that any activity or decision that will substantially alter public lands be analyzed in an environmental assessment or environmental impact statement. No environmental analysis has been prepared for the government's containment plan.

The suit was filed by the Western Environmental Law Center and Natural Resources Defense Council on behalf of the Northcoast Environmental Center, Klamath Forest Alliance, Siskiyou Regional Education Project, Kalmiopsis Audubon Society, Friends of Elk River, Oregon Natural Resources Council, and Siskiyou Audubon Society.

Book review

A treasure trove for browsers

Life on the Edge: A Guide to California's Endangered Natural Resources: Wildlife

By Carl G. Thelander, ed., Biosystems Books, Santa Cruz, 1994, 550 pp., \$45.00 (paper).

My initial reaction to *Life on the Edge* was that it's either an exceptionally pretty reference book or an exceptionally informative coffee-table book. On closer examination, I picked the latter. Though packed with maps, photos, historic material, drawings, Native American art and stories, essays, interviews, marginalia, and individual descriptions of California's 115 threatened or endangered wildlife species, the book is better suited to browsing than reference.

The people at Biosystems Books (an offshoot of an environmental consulting firm) have crammed an amazing amount of material into the book's 550 pages without overwhelming the reader, a feat attributable to the book's design. Opening the book at random, I light upon the entry for the Belding's savannah sparrow. On facing pages are a color photograph, a map showing the bird's current and historic breeding range, a brief natural history, the species' scientific name and its status (state endangered; federal C-2 candidate), and a discussion of the factors that led to the bird's decline and the efforts underway to protect it. In one of the wide margins is a charmingly dated passage from a bird book published in 1923 which concludes that the lucky observer of this species will "feel like an unlettered cow permitted to stand in a clover field where fairies are at play." I don't know what that means, but I'm glad I read it.

Continuing on, I turn to a short essay on brown-headed cowbirds, a Karok story about the origin of fire, and an 11-page interview with the herpetologist Robert Stebbins accompanied by a stunning color illustration of the dispersal and evolution of the ensatina salamander. From the marginalia I learn that one Raymond B. Cowles, "in the course of his pioneer work on reptilian thermoregulation ... in the 1930s, [dressed] lizards in tiny fur coats." Great stuff.

But the scattershot approach that makes the book so much fun for browsing also makes it frustrating in places. In an appendix listing species that appear in the book I spotted 'by-the-wind-sailor' and was seized with the desire to know what kind of animal had inspired so evocative a name. But though the appendix provides a scientific name (*Velella velella*), neither name appears in the index or table of contents. I was left wondering for several days, until Jim, who was as stumped and intrigued as I, tried in turn to stump Ryan, who said "It's a jellyfish, isn't it?" and slaked our curiosity. (If it's not a jellyfish, someone please let us know).

My curiosity was piqued again when the book helpfully informed me that "tiny bristles covering the shell's surface give [the endangered Trinity bristle snail] its name" and that "bits of dirt, spiderweb, and vegetation often snag on these bristles." Well and good, but why a snail would want bristles on its shell, that's what I want to know.

For all its abundance of information, in other ways the book is commendably restrained; *Life on the Edge* engages the emotions without manipulating them. The writing is clear, vivid (the Shasta crayfish is memorably described as "unflappable"), and temperate. Some of the archival material—descriptions of bear-baiting and photographs of stacked carcasses—are stomach-turning, but to have left out the historic roots of our present dilemma would have been irresponsible. Many of the wildlife photographs qualify as what José Knighton has labeled ecoporn, but they are as informative as they are beautiful, and if there are a lot of baby birds in their adorable puffball stage (my favorite photo has two peregrine chicks looking like scrawny, goggle-eyed Spielberg aliens in moth-eaten Abominable Snowman suits), there are also plenty of salamanders slick with slime.

If your generosity hasn't ended with December, get a copy of this book onto the shelves of your local library or into the hands of your favorite science teacher. Though some of the material in the book will become dated as more is learned about the state's endangered species—and as more species are added to that list of shame—its encompassing portrait of California's increasingly scarce diversity will endure.

—Lucy Rosenau



Photos by Jim Eaton, and boy is his face red.

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Calendar

February 11 CONFERENCE for activists on the endangered Endangered Species Act at the Community College of Marin. For details, call Paul Mason at (707) 826-9618.

February 15 COMMENTS DUE on the Forest Service's proposal to correct grazing problems in the Modoc National Forest's Clear Creek allotment, which includes a portion of the Steele Swamp Roadless Area. Send comments to Bernie Weisberger, District Ranger, Doublehead Ranger District, P. O. Box 369, Tulelake, CA 96134. (See article on page 5.)

February 20 COMMENTS DUE on a plan to extend the Five Lakes trail in Granite Chief Wilderness to direct campers away from the lakes. Send comments to Truckee Ranger District, Tahoe National Forest, 10342 Highway 89 N., Truckee, CA 96161. (See article on page 3.)

February 21 PUBLIC MEETING to discuss the progress of the Sierra Nevada Ecosystem Project, from 9:00 a.m. to 4:30 p.m. in Freeborn Hall, U. C. Davis. For more information, call Erin Fleming at (916) 752-7856.

February 22 PUBLIC MEETING on the new management plan being developed for the Emigrant Wilderness, from 5:30 to 9:30 p.m. in the Stanislaus National Forest supervisor's office, 19777 Greenley Road, Sonoma. Call Cindy Diaz at (209) 965-3434 extension 5341 to receive a packet of materials for study before the meeting.

February 24-26 RIVERS FESTIVAL with workshops, exhibits, and courses on wilderness medicine and sea kayaking at Fort Mason Center, San Francisco. For more information about this fundraiser for Friends of the River, call Mandy Weltman at (415) 771-0400.

Wilderness Trivia Answer

Volcanic (igneous) rocks, mostly 30 million years old or younger.

from page 3



**California
Wilderness
Coalition**

Purposes of the California Wilderness Coalition

...to promote throughout the State of California the preservation of wild lands as legally designated wilderness areas by carrying on an educational program concerning the value of wilderness and how it may best be used and preserved in the public interest, by making and encouraging scientific studies concerning wilderness, and by enlisting public interest and cooperation in protecting existing or potential wilderness areas.

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"Nature—if given a chance—can still manage land better than we can."

—Reed Noss
in *Conservation Biology* (5:1)

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