

June 1999
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Outdoor Recreation Is for the Birds—Or Is It?

by Professor Richard L. Knight

Outdoor recreation is considered to be the highest and best use of our public lands. Do you doubt this? Perhaps, but then listen to these words by Undersecretary of Agriculture Jim Lyons who laid it on the line: "Recreation is going to be our business in the future." [For more of Undersecretary Lyons' remarks, see page 2.] All trends project that outdoor recreation on public lands is on the increase and commodity uses are in decline. In the years to come, it is anticipated that recreation will increasingly figure in management decisions as they pertain to lands administered by the National Park Service, U.S. Fish and Wildlife Service, Forest Service, and Bureau of Land Management.

Consider just Forest Service lands. When President Grover Cleveland signed the Forest Management Act in June 1897, he did not propose that these lands be national parks. It just happened that way. Thanks to the proclivity of foresters to build roads and the

increasing demands by our public for outdoor recreation, in 1997, 830



Editor's Note

Grazing on public lands is declining, but recreation on public lands is steadily increasing. (See statistics, page 9.) Some environmentalists have suggested that recreation is a better use of public lands, on the theory that it is less destructive than extractive uses like grazing. We thought we would explore that issue. This edition of the newsletter shows the results of our exploration.

Prof. Knight's, Mr. Miller's, and Mr. Baca's Bibliographies were too extensive to print here, but if you call us, we will be happy to send them to you.

million visitors were tallied in the national forests. This is the equivalent of every American spending at least three days during the past year on Forest Service lands.

And these numbers reflect a boom in recreation that is pervasive and ubiquitous. The anticipated trends in the number of people participating in wildlife-oriented recreation are projected to increase 63% to 142% over the next 50 years. What about activities that do not directly depend on wildlife? Not surprisingly, they constitute the vast majority of outdoor recreation now and in the future. Activities projected to grow most rapidly include day hiking, bicycling, developed camping, and rafting and tubing. By the year 2000 these pursuits are projected to increase by 23%, 24%, 20%, and 23%, respectively, relative to 1987 levels. In addition, activities such as off-road driving, motor boating, and snowmobiling will grow at respective rates of 4%,

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Outdoor Recreation on the National Forests

*Remarks of the Hon. James R. Lyons,
Under Secretary for Natural Resources and Environment,
U.S. Department of Agriculture, June 8, 1998*

... At USDA, we're proud of the role we play in promoting outdoor recreation and the physical, psychological and even spiritual benefits that come of outdoor recreation experiences.

We're also very much aware of the economic importance of outdoor recreation for all of you with a business interest in outdoor recreation and the thousands of communities across the United States that benefit from outdoor recreation and tourism in their own backyards. . . .

Now, among the most valuable products that flow from the national forests are the experiences that leave on a roll of film, or as memories of great hiking or camping experiences, or in the exhilaration one feels while running a wild river or wind surfing the Columbia Gorge.

Outdoor recreational experiences are among the most valuable products the come from the national forests. In fact, recreation is the window through which most Americans see their national forests. And we're

working hard to help them understand what they're seeing and to expand opportunities for Americans to see more. . . .

RECREATION IS BIG BUSINESS ON THE NATIONAL FORESTS. Three-quarters of what the national forests contribute to the GDP comes from outdoor recreation—that's nearly \$100 billion each year.

We manage a diverse and spectacular portfolio of recreation opportunities. There's something for everyone to enjoy on the national forests—from extreme skiing, to day hikes, from camping and hiking to world class hunting and fishing, from back country experiences to motorized access, scenic byways, and all-American Roads. . . .

During my tenure with the Department, we've not only tried to highlight our recreation program, but we've also tried to take a more business-like approach to its management and promotion.

We developed a marketing strategy and an icon that we hope will become to outdoor recreation what the Nike swoosh is to sporting goods . . . a sign that connotes high quality outdoor experiences and customer satisfaction. . . .

We're building partnerships more than ever before, because we need the help, and we know that high quality outdoor recreation experiences are the product of public/private partnership. . . .

We've got a great product to sell. And, with your help, we can make it even better!

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June 1999

Perhaps it is time to officially declare a Movement afoot.

Although this Movement doesn't have a name yet, and its precise membership is still evolving, its fundamental principles—cooperation, education, preservation, and restoration—are plainly manifest.

We recently observed three illustrations of this Movement in action. The first occurred one evening in early April, at the Orme Ranch in central Arizona, when a small group of concerned citizens met to launch a new nonprofit organization dedicated to solving a host of problems revolving around the demise of family-scale agriculture, the rise of urban sprawl, and the shape of the future.

They decided to call their organization "Wide Open Spaces."

According to its mission statement, the goal of this organization is to "work hand in hand with environmentalists, ranchers, government agencies, farmers and the public to build better relationships through understanding and tolerance. To create and implement educational programs, workshops and internships. To foster better land management practices through education and common sense management of resources."

That sounds very encouraging (and familiar) to us.

This small group has its work cut out for it, of course; but never underestimate the power of optimism. We should be cheered by this David's attempt to take on Goliath.

Farther south, in the Tucson area, is another cadre of idealists. Nearly two years ago the Arizona branch of the Nature Conservancy approached the Udall Center, a federally funded mediation

institution, to explore ways to resolve long-standing conflicts over grazing. The result was the creation of the Arizona Common Ground Round Table.

The vision of the Round Table, while more formal and institutionalized than the Orme group's, is no less optimistic. Their aim is to curb the loss of open space, conserve working ranches and farms, and restore ecosystems—all at the same time. Early work has focused mainly on the benefits of conservation easements.

The meeting we attended drew over 50 people, including a class from Prescott College studying conflict resolution. There were presentations on the collaborative team approach of the Empire Ranch, and a proposal to let the free market decide the fate of our public lands. The hidden agenda, though, was hope.

Farther to the east, and a month later, we gave a presentation on the activities of the Quivira Coalition to the Catron County Citizens Group, in Glenwood, New Mexico. This group came together two years ago, under the leadership of county resident Bob Moore, in an attempt to open dialogue and find common ground among the county's notoriously combative constituents.

Judging from what we saw and have heard, the group is making great strides.

These efforts are just the tip of the iceberg, too. Across the Southwest, people and organizations are shaking hands rather than clenching fists.

This Movement may not have a name yet, but it is definitely picking up speed.

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Environmental Impacts: The Dark Side of Outdoor Recreation

by Scott G. Miller

Scott Miller is the Coordinator of the U.S. Fish and Wildlife Service's Partners for Wildlife Program. This paper summarizes data he presented to the June 8-10, 1998 Conference on Outdoor Recreation: Promise and Peril in the New West, sponsored by the Natural Resources Law Center of the University of Colorado.

Outdoor recreation is increasing in popularity throughout the United States (Flather and Cordell 1995). Heretofore, many believed that nonconsumptive outdoor recreation was an environmentally benign activity. Increasing evidence, however, indicates that these activities are, in fact, not benign. On the contrary, data suggest that outdoor recreation can affect wildlife individuals, populations, and communities (Knight and Cole 1995). For example, a recent survey of factors responsible for the decline of federally listed threatened and endangered species on public land finds that outdoor recreation is the second leading cause (Losos et al. 1995 [see graphs on pages 20 and 21]).

Recreational Impacts and Wildlife Responses

Outdoor recreation has the potential to affect wildlife at the level of the: individual, population, and community. There are four primary ways by which outdoor recreational activities can impact wildlife: 1) harvest, 2) habitat modification, 3) pollution, and 4) disturbance (Knight and Cole 1995). Although all of these deserve consideration and are extremely important, here we will focus on disturbance, as this form of impact is widespread and difficult to manage in wildland settings. Disturbance can be intentional (i.e., harassment) or unintentional, of which the latter is most likely the primary means by which nonconsumptive recreational activities impact wildlife. Unintentional disturbance can take place in a variety of forms, such as hiking, mountain biking, bird watching, and wildlife photography.

Responses of Wildlife to Outdoor Recreation

Immediate Response: The most extreme response of wildlife to disturbance is death. Although this is the intended result of consumptive activities (i.e., hunting), nonconsumptive activities can also result in the death of animals. For example, small mammals inhabiting the subnivean space between snow and ground can be crushed by snowmobiles (Schmid 1972). Additionally, numerous piping plover chicks were found dead in tire tracks on eastern beaches (Melvin et al. 1994). Other types of immediate responses are changes in behavior, such as a flight or flush response, nest abandonment, and elevated heart rates.

Long-term Effects on Individuals: Although much of our understanding of recreational disturbance is limited to the immediate behavioral responses of individuals, long-term effects can result. Wildlife may abandon preferred nesting or feeding areas for less suitable, undisturbed sites. For example, Thornburg (1973) noted that when food-rich areas were disturbed, ducks redistributed to less productive areas to avoid human activity. Cottam (1939), Cronan (1957), Dennis and Chandler (1974), and Hohman and Rave (1990) also noted an alteration in use of feeding areas by diving ducks due to human disturbance. Displacement into new environments can lead to a number of further behavioral changes such as altered feeding ecology, which could lead to a reduction in energy acquisition and ultimately affect survival. Altered movement and home range patterns can also result from distur-

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bance. For example, mule deer shifted feeding into darkness and left their home ranges more frequently (Yarmoloy et al. 1988).

Numerous studies have documented a decrease in productivity due to recreational disturbance. For example, mule deer experimentally harassed by all-terrain vehicles produced fewer off-spring the following year (Yarmoloy 1988). Miller et al. (1998) found that the nesting success of grassland and forest birds was reduced in close proximity to heavily used recreational trails.

Long-term Effects on Populations: Our knowledge of how outdoor recreational activities affect populations is rudimentary. We can only speculate that increased mortality, reduced productivity, and displacement of individuals (all documented, at least anecdotally) will result in decreased populations. Some information, however, does exist. For example, areas receiving moderate levels of all-terrain vehicle use had 50% fewer species of songbirds and 24% fewer breeding pairs compared to control areas (Bury et al. 1977). The heavily used areas had no breeding pairs. Flemming et al. (1988) found that the number of breeding pairs of piping plovers decreased by about 25% in areas frequented by pedestrians and off-road vehicles. Documenting long-term effects on populations has been problematic because of the difficulty in establishing a cause-and-effect relationship.

Long-term Effects on Communities: There is a lack of information in the literature documenting long-term effects on wildlife communities. Because there is interspecific variation in wildlife response to disturbance, we could

anticipate that changes in species diversity would result. Those species with higher levels of tolerance to disturbance would be expected to be more prevalent in areas where disturbance occurs while species less able to tolerate disturbance would be absent or occur in lower numbers.

A simplification in bird communities was found near recreational trails along the Front Range of Colorado (Miller et al. 1998). American robins, a human commensal, were more numerous near recreational trails while other species, such as western-wood pewees, Townsend's solitaires, solitary vireos, etc., were less numerous. Skagen et al. (1991) documented a decrease in species diversity of an avian scavenging-guild due to human disturbance.

Factors That Influence Wildlife Responses

Type of Activity: Different activities may elicit different responses. As one might expect, wildlife may respond differently to a loud, fast-moving motorcycle than to a quiet, slow-moving pedestrian. Although we lack sufficient knowledge regarding responses to different types of activities, some information does exist. For example, white-tailed deer allowed closer approaches by a vehicle than by a pedestrian (Kucera 1976). Five of six species of raptors showed greater response to pedestrians than vehicles (Holmes et al. 1993).

Recreationists' Behavior: The behavior of recreationists can influence wildlife response. For example, Klein (1993) reported that of all visitors to a National Wildlife

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The Dark Side of Outdoor Recreation

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Fear and Loathing on the Pecos

by Courtney White

"... Dan Crittenden, Forest Service District Ranger for the Pecos region, countered that recreationists, not cattle, were causing the most damage within the sensitive riparian zone below the wilderness boundary. In fact, cattle are excluded from this stretch of the river."

"Pecos Draft Allows Grazing, Curtails Camping"

This recent Santa Fe newspaper headline was too tempting to resist. I read on.

"Fewer people would camp but cattle grazing would continue unabated under a new plan for managing the national Wild and Scenic section of the Pecos River," wrote journalist Ian Hoffman in the Albuquerque Journal North. "Authors of the Forest Service's new plan say people, not cattle, pose the greatest peril to the river's wild and beautiful character."

Really? How interesting.

Hoffman quoted the predictable outrage of Forest Guardians' John Horning: "They won't let you and me camp within a quarter-mile of the river," said the well-known opponent of public lands grazing, "but any day of the week cows can graze, defecate and trample the plants up and down the river corridor."

Recreation More Damaging to Riparian Area

In the article, Dan Crittenden, Forest Service District Ranger for the Pecos region, countered that recreationists, not cattle, were causing the most damage within the sensitive riparian zone below the wilderness boundary. In fact, cattle are excluded from this stretch of the river. "I think we're on solid ground for litigation on grazing," said Crittenden.

I put down the newspaper. What an intriguing twist on the "cows bad, recreation good" rhetoric that has dominated so much of the grazing debate from

the environmental side. I mean, if recreation posed a greater threat to the health of the riparian ecosystem along the Pecos than grazing, shouldn't environmentalists be threatening lawsuits over THAT? But they weren't.

I decided I had to go see for myself.

Once there, I quickly learned that the Forest Service does not intend to reduce the numbers of recreationists along the river. Instead, it plans to displace them to areas away from the fragile riparian zone within the recreational corridor.

And I just as quickly learned why.

Too Many People

In "campground" after "campground," I saw the environmental abuse created when too many people camped too long in an unregulated manner. The ground had been trampled to powder, often right up to the river's edge; fire rings and trash proliferated; the lack of sanitation facilities meant that people were defecating wherever they pleased; the forest had been hacked apart for firewood; and vehicles rioted on the earth.

According to Ranger Crittenden, who was my host for the day, these "campgrounds" belong to the State Game and Fish Department, which owns the land. He said the Forest Service was trying to acquire the properties in order to impose order on a situation that was very clearly out-of-hand. He said the State was willing

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to deal.

That was good news because the changes couldn't come a moment too soon.

As we drove up and down the river, I thought: take away the people, their cars, and the trash for a moment and you would swear the ground had been overgrazed by cattle. Throw in a significant riparian area, and add a Wild and Scenic River designation on top of it, and you would have a recipe for major outrage on the part of the environmental community.

Except that PEOPLE caused this damage, not cattle.

Ironically, by all indications the grazing of the high country by cattle is causing little or no significant damage to the riverine ecosystem. This is because the Bear Lake Grazing Association, composed of a dozen ranchers from the Las Vegas area, hire a herder for the three-month grazing season. This herder lives with the cattle and keeps them on the move, minimizing adverse impacts.

Arizona Willow Thriving

In fact, the endangered Arizona willow (*Salix arizonica*) is thriving along the upper Pecos, right in the heart of cattle country. The newspaper quoted scientist Duane Atwood of Brigham Young University, who has been studying the Arizona willow, as saying the area from the "Pecos Falls to the headwaters of that drainage is probably one of the best stands of Arizona willow anywhere." What pressure the willow is receiving from grazing is "more by elk than livestock. You see a lot of elk pellets."

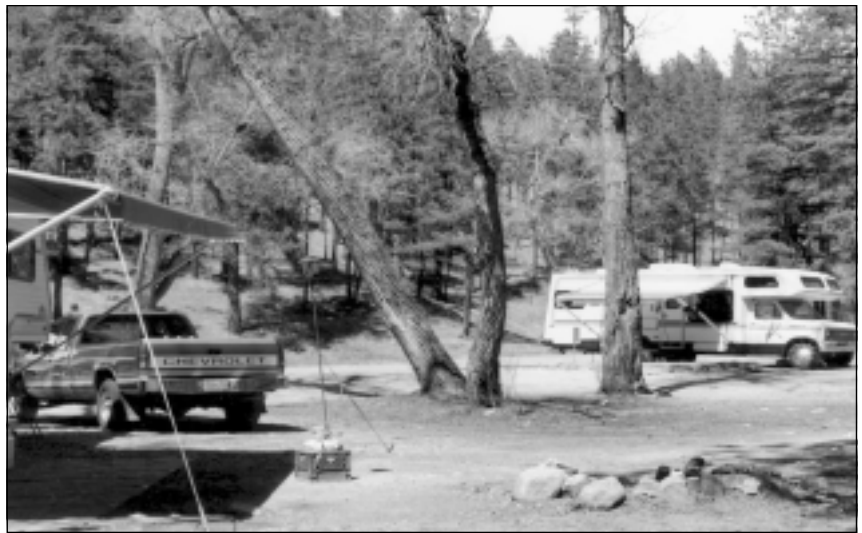
Dan Crittenden concurs.

Show him the damage done by cattle, he says, and he will take action. Meanwhile, the damage caused by recreationists is as plain as day. Of course, this recreational pressure will continue to get worse over time. Dan put the situation succinctly into perspective. "In recreation management, all the easy decisions have been made," he said to me. "Now we're faced with the difficult ones."

For example, he would like to allow the leases to expire on a swatch of summer homes in the

Fear and Loathing on the Pecos

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Pecos campground. (All photos in this issue are by Courtney White.)

Cowles area, smack in the middle of the Wild and Scenic corridor, in order to restore the riparian area. This has stirred up a hornet's nest of opposition from the lease owners.

Unfortunately, the Forest Service apparently must weather this position on its own. Crittenden says the environmental community has been silent on the issue. "Where is their support?" asks Dan.

It is a very good question.



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Current Quivira Events

(Right) Pat Morrison, biologist for the Forest Service, talks about the Forest Service's monitoring protocol during our May field trip to Jim Williams' Quemado ranch. Thirty-five people joined us to look at the ranch and listen to Kirk Gadzia talk about what might be done to improve its condition.



(Above and above right) The 202 cows of the Santa Barbara Grazing Allotment moved to the Valle Grande Grass Bank on May 15 for a three-year stay while their home is thinned, burned, and restored to health.



(Above) Over 60 people joined us at the Herding Workshop in March at Ghost Ranch to learn the advantages of herding cattle rather than fencing them.

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Survey results show that 94.5% of Americans 16 years of age or older participated in at least one of the surveyed forms of outdoor recreation [in the previous year]. That is almost 19 out of 20 people and approximately 189 million participants nationwide. . .

Some activities, such as walking, do not require a specific setting. However, most activities either require or are enhanced by a particular environment or specific facilities. While private industry attempts to find a way to capitalize on the growing market of outdoor recreation, public agencies already have the basic resources necessary to provide for the public demand in this area. The most essential resource is, of course, land. Government agencies are responsible for much of the land that is still available for outdoor recreation activities. While most agencies do have resource oriented responsibilities other than recreation, it is viewed as important to respond to public demands for recreational use of public lands.

. . . For 25 of the 31 activities included in both studies, there are millions more participants in the 1995 totals than there were in 1983. In addition to millions of new participants for traditional activities, there are participants for adventure activities that were rarely pursued 15 years ago such as. . .rock climbing.

Since 1982-3, many activities dramatically increased in popularity: . . .hiking (94%) backpacking (73%), downhill skiing (59%), primitive area camping (58%). . . 23 of these 31

activities . . . grew faster than the overall population. . . .

Overall, the trend for outdoor recreation participation indicates continued growth in the demand for outdoor recreation opportunities, facilities, and services. . . .Overall population growth, along with the increasing popularity of most outdoor recreation activities, will create problems and opportunities for land and water resource managers. A great and changing demand is going to be placed on the public's natural resources through recreation. Managers need to anticipate and react to that demand. . . .In terms of natural resource oriented activi-



Hiker on a trail in Sequoia National Park.

ties, the trend seems to be for some declines in participation in consumptive activities such as hunting, while non-consumptive activity participation seems to be on the rise. . . .

Outdoor Recreation in the United States

Results from the National Survey on Recreation and the Environment

(taken from the [Forest Service's website](#))



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Profile Of Good Stewardship: **The Empire Ranch**

Can a 100% public lands ranch accommodate cattle grazing and recreational use in a way that is environmentally and economically sustainable?

A review of the Empire Ranch suggests that the answer is "yes."

Located only 45 minutes from downtown Tucson, the cattle

deal of hard work and trust, but this pie-in-the-sky goal has been achieved, and as a result, the Empire Ranch has become a role model for all those who seek to uncover answers to problems, rather than perpetuate the brawling that has characterized so much of the debate over grazing in recent years.

A Typical History

The history of the Empire Ranch reflects much of the evolution of ranching in the Southwest. The ranch was established in 1876 when Walter Vail purchased 160 acres of lush grasslands north of Sonoita. By the time of his death 30 years later, Vail had expanded the ranch to over 1,000 square miles (the size of present-day Phoenix).

In the ensuing decades, the ranch was sold off bit by bit as overgrazing, mining development, land speculation, debts, and wildly fluctuating beef markets took their toll on the owners and the land. It remained a working ranch, however, until 1960 when the Boice family sold the remainder of the Empire, totaling 45,000 acres, to the Gulf America Corporation, which planned a big real estate development. Fortunately, the development never occurred, and in 1974 a mining company bought the ranch with an eye toward exploiting its water and mineral resources.

The mining company changed its mind, however, and put the ranch up for sale on the open market in the 1980s. Meanwhile, attitudes toward private and



Biological assessment team meeting at the Empire Ranch.

of the Empire Ranch share a federally designated Resource Conservation Area with a swelling tide of outdoor enthusiasts, including hang gliders, mountain bikers, daytrippers, bird dog trainers, campers, hikers, hunters, and horseback riders.

The job for the government and the ranchers was to devise a management strategy that would short-circuit the traditional, and increasingly noisy, conflict between ranchers and recreationists on public land while maintaining the ecological integrity of the resource.

It took time and a great

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public land had changed; recreational opportunities, the protection of wildlife species, and the conservation of open space for aesthetic and cultural reasons had become increasingly important to urban and rural citizens alike.

The Empire, with its abundance of attractive, rolling grasslands, substantial riparian areas, and easy access, fit this shift of values very neatly. It also continued to attract the predatory attention of real estate speculators. Fearful of development, a groundswell of public support for federal acquisition of the Empire rose steadily, culminating in a series of land exchanges that brought the ranch under the jurisdiction of the BLM in 1988. The BLM, in turn, quickly designated the land a "Resource Conservation Area."

The question was, what would happen next?

An Untypical Team

Mindful of the ranch's scenic and ecological value, as well as its own multiple-use mandate, the BLM decided to create a collaborative team approach to the land's management. They found eager partners in Mac and John Donaldson who held the grazing permit to the Empire. The Donaldsons believed that the Empire could be grazed in a cooperative and ecologically sensitive manner and were eager to demonstrate it.

Ecologically, the Empire supports one of the best examples of native grasslands in Arizona; the largest Emery Oak in the United States grows in a secluded canyon on the ranch; three native fish spe-

cies, all officially endangered, call the Cienega Creek home; and nearly 200 species of birds have been identified within the Conservation Area, including the threatened Baird's sparrow.

To maintain the ecological integrity of the land, the Donaldsons manage the ranch in a holistic manner, utilizing a "one herd" concept to rotate the cattle through numerous pastures in accordance with the ranch's natural topography.

The Donaldsons call it a "selective rest/rotation strategy." All grazing is **planned**, meaning the cattle are moved according to environmental conditions and other factors in a controlled, deliberate process. A critical component is the constant monitoring of land health. There are 28 monitoring plots on the ranch and the Donaldsons study each carefully in order to quantify impacts.

Just as important, the Donaldsons work closely with a biological assessment team comprised of range specialists and scientists from federal, state, and local agencies, as well as members of the public. The team meets twice a year, once in the spring and once in the fall, to evaluate the management of the ranch against specific environmental goals.

Over 30 people attended the Spring 1999 team meeting, including a vocal anti-grazing activist. The team toured the ranch to look at the effectiveness of a recent riparian restoration project; the available ground coverage for the Baird's sparrow; the impacts of

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Good Stewardship: **Empire Ranch**

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June 1999

The Far Horizon

by Courtney White

*"I don't like work, no man does,
but I like what is in work—the
chance to
find yourself, your own
reality—what no other man can
ever know."*

—Joseph Conrad

It is a standard belief within the environmental movement that recreation is preferable to grazing on our public lands.

I encounter evidence of this belief every time I open the mailbox. On the one hand, I receive countless magazines from environmental groups filled with glossy stories extolling the liberating virtues of recreation. On the other, groups solicit my membership by attacking nonrecreational use of the land as universally destructive.

The supposition that recreation is a benign activity has permeated nearly every level of the debate over the purpose of public lands. The press accepts it uncritically, environmental leaders tout it as an acceptable alternative to "exploitation," and public land managers bank on it.

As a hiker and camper, I want to believe it too. But something always nagged me about recreation; and it wasn't just the trash I saw in the overused campgrounds, or the off-road vehicle damage I saw on the hills.

What bothers me is the implication that:

—work is always "dirty" and destructive;

—our public lands always prosper as playgrounds; and

—the axiom "recreation good, grazing bad" is always true. It isn't.

Over One Billion

According to public records, over 800 million day-visits were made to our national forests last year. Combine that figure with the nearly 300 million day-

visits to our national parks during the same period and you have over ONE BILLION trips by people to their public lands every year. (That total doesn't even include BLM land.)

And they didn't go there to chop down the trees or graze cattle.

One recent scientific study identified recreation as a greater threat to endangered species on public lands than grazing. I find this news astonishing and significant. And yet, how many lawsuits have been filed by environmental groups against the government over recreational damage to the land? I can't think of a single one.

Why have environmental groups not made "overrecreation" a priority? The impact of one billion people on our public lands must be tremendous. How could it not? But where is the national call to action? Where is the demand for scientific research?

A cynic might say that environmental groups are not about to bite the hand that feeds them. I think the problem is different. Many environmentalists that I know are genuinely concerned for the health of the land; they will chart a fair and constructive course of action once they are properly informed. But they need to have KNOWLEDGE first.

And that means chopping down a few hardy paradigms.

Let The Land Lead

We need to look and listen to the needs of land first and foremost. Demonizing ranchers while

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turning a blind eye to the deleterious effects of overrecreation will not in the long run help restore or maintain ecosystems.

Does an overgrazed plant care what animal bit it? Can a meadow tell the difference between damage caused by too many hooves, tires, or vibram soles? Does an endangered species care if it is being pushed to the brink by too many cows, campers, or off-road vehicles?

Of course not. But in a world gone mad with finger-pointing, few people seem willing to listen to the land anymore—or each other. This is the tragedy of the grazing debate. The investment in conflict overrides the needs of land or people. There are plenty of answers to grazing-related problems, for example; but few eyes want to see.

Meanwhile, the land, and the life it supports, continues to suffer.

Demonizing recreationists, of course, is not the answer either. While we need to acknowledge the environmental costs of overrecreation on public land, we should resist the temptation to indulge in another round of “us vs. them” rhetoric.

Let the land be our guide. When damage occurs, let’s correct it. Let’s get control of the cows, the recreators, the elk, the cars, the smog, and all the other sources of environmental degradation. Let the land rest when it needs it; let it burn when it requires it; let it be used when it can sustain it.

What About Work?

By demonizing ranching and championing recreation as a “benign” alternative, environmentalists diminish the value of working with the land. This has two unfortunate consequences.

First, it fails to distinguish between work that restores and maintains rangelands in an ecologically sensitive manner, and work that does not. There are plenty of examples of the former; but we can’t encourage their proliferation if we don’t recognize their benefits. If we categorize all ranch work as destructive, we punish those stewards who are trying to do a better job.

The only way to ensure real range restoration is through the application of a ton of elbow grease. Many ecosystems are too much out-of-kilter to be restored simply by kicking the cows off the land (what about ozone depletion and CO₂ buildup, for example?). Resting the West was never the answer; rolling up our sleeves is.

Who, however, is going to do all that work? Our public land managers? I don’t think so. Agency budgets and staffs are shrinking, not expanding. Work gangs? Maybe, but I doubt Congress is willing to pony up the necessary money right now. Volunteers from the environmental community? Possibly, but there is an awful lot of work to be done many miles from urban centers.

I have an idea—what about the folks who already live, and work, on the land?

Second, replacing labor

(con’t on page 18)

The Far Horizon

(con’t from page 12)

Slide Show Chronicles Quivira’s Activities

Courtney White, Executive Director of the Quivira Coalition, has assembled an hour-long slide show on our activities, including our Outdoor Classrooms, workshops, site tours, and Management Demonstration Projects.

It’s a great way to learn about the Quivira Coalition and The New Ranch.

If you would like to have Courtney make a presentation to your organization or group, please contact him at (505) 820-2544.

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June 1999

Nevada Survey on Uses and Management of Public Land Shows Support for Ranching, Recreation, and the Environment

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June 1999

The state of Nevada is 87% public land owned by the federal government and administered by various federal agencies. The majority of these lands are managed by the Bureau of Land Management of the U.S. Department of the Interior and the U. S. Forest Service of the Department of Agriculture. Other lands are administered or managed by the Department of Defense, the National Park Service, and the U.S. Fish and Wildlife Service. Over 90% of the population of Nevada lives in urban centers, but over 90% of the public lands are in rural counties with less than 10% of the population.

The opinions and beliefs of the people of Nevada about the uses and management of our federal lands are frequently debated in federal, state and local governments, by the media, in the resource management agencies, among educators and researchers, and in the classroom. Yet very little data on the subject is available. This survey of Nevada citizens was undertaken in 1997 by the University of Nevada Cooperative Extension to find out more about the opinions of Nevadans about public lands in the state.

The Survey

The survey asked questions about several familiar issues in public land management: rural community viability, ranching and livestock grazing, wildlife and wild horse management, mining, recreational uses, fire control and so forth. But an important aspect of the survey was to find out how Nevada citizens believe decisions

about the uses and management of these lands should be made, including who should be involved and what kinds of local interests and impacts should be considered.

Those surveyed were registered voters. A total of 1,111 completed questionnaires were received. The response rate from the urban counties was 48% and from the rural counties was 58%.

The Results

Only 26% of the urban and 24% of the rural respondents indicated that they were satisfied with the management of Nevada's public lands. Both strongly disagreed with decisionmaking only at the national level; they agreed with decisionmaking at the state and local level. They also strongly agreed that informed citizens should be allowed to work together with agencies in the decisionmaking process, and that decisions must be fair to the local people most directly affected. They also agreed that the general public, local communities, wildlife organizations, agricultural interests, and recreation and hunting and fishing interests should all have greater inputs into the decisionmaking process.

Both urban and rural respondents strongly agreed that hiking, camping, bicycle riding, horseback riding, wildlife habitat, livestock grazing, and fishing were appropriate activities on or uses of public land. Seventy-five percent of the rural and 68% of the urban respondents agreed that livestock grazing is an appropriate use on

(con't on page 18)

recreational activities near the main road; and the condition of the sacaton delta grasslands.

The Donaldsons got a big “thumbs up” by the team for their efforts. Even the anti-grazing activist grudgingly conceded that the Empire looked good and was being well-managed. In fact, one participant said later that the team now needs to focus more on the rising tide of recreational impacts on the land.

By way of illustrating this point, of the 30 people in attendance that day, only one represented a recreational organization.

A Wider Plan

As a result of its success, the Empire Ranch, with its team approach to progressive management, has become a key element in broader efforts to preserve the rural flavor of southern Arizona while protecting and restoring its natural ecosystems

One such effort is called the Sonoita Valley Planning Process (SVPP) whose goals include: improving watershed health and wildlife habitat; restoring plant diversity; protecting water quality and quantity; maintaining scenic beauty and open space; and sustaining compatible traditional and recreational use of the land. To do this, the SVPP has assembled a diverse group of individuals, agencies, and organizations interested in finding solutions to problems.

Another example of broader planning is Pima County's Sonoran Desert Conservation Plan, which features six elements: Ranch Conservation, Cultural Preservation, Riparian Restora-

tion, Mountain Parks, Biological Corridor Conservation, and Critical Habitat. According to its authors, “when fully implemented, the proposed plan will dramatically effect regional urban form, arrest urban sprawl, and protect those lands that contain the highest quantity and quality of regional resources.”

Central to the county's plan is the Empire Ranch, which is involved in nearly every one of the aforementioned categories. Success on the Empire demonstrates to multiple constituencies that these plans are realistic, and achievable, goals.

However, balancing rising recreational use with ecosystem health and the economic self-sustainability of rural communities remains a key piece of the puzzle. The Empire has succeeded, so far, mostly as a result of its willingness to do things differently.

Or, as one participant observed: “To keep things the same, you've got to change something.”

The Empire Ranch

(con't from page 11)



Mac Donaldson.



Public Opinion Survey Indicates Support for “Green” Grazing

by Patrick J. Baca

Recent public opinion surveys of citizens of New Mexico indicate strong support for both protecting the environment and preserving ranching as a way of life. Respondents were asked to choose the most important priority from a list of three “multiple uses.” Figure 1 shows that 51% of respondents preferred environmental preservation as the most important priority in managing the public rangeland. Twenty-three percent thought that commercial uses were the most important priority, while recreation

important and ten being extremely important. Figure 2 shows the results. Sixteen percent chose among the points 0 to 4 which are below the midpoint and indicate not important. Fifteen percent chose the midpoint 5 on the scale and indicates a neutral stand. Sixty-nine percent chose among the points 6 to 10 which indicates they think preserving ranching is important. An impressive plurality of 31% chose point 10, the highest place on the scale of importance.

Public preferences for environmental protection and recreation might seem inconsistent with the desire to preserve ranching as a way of life. But combined, this set of preferences represents the hallmark of the new rangeland management heresthetic. Groups such as the Malpai Borderlands Group and the Quivira Coalition are encouraging ranchers to realign their management practices in ways that increase forage while benefitting wildlife habitat. If the new heresthetic fits the profile of public preference we should be able to

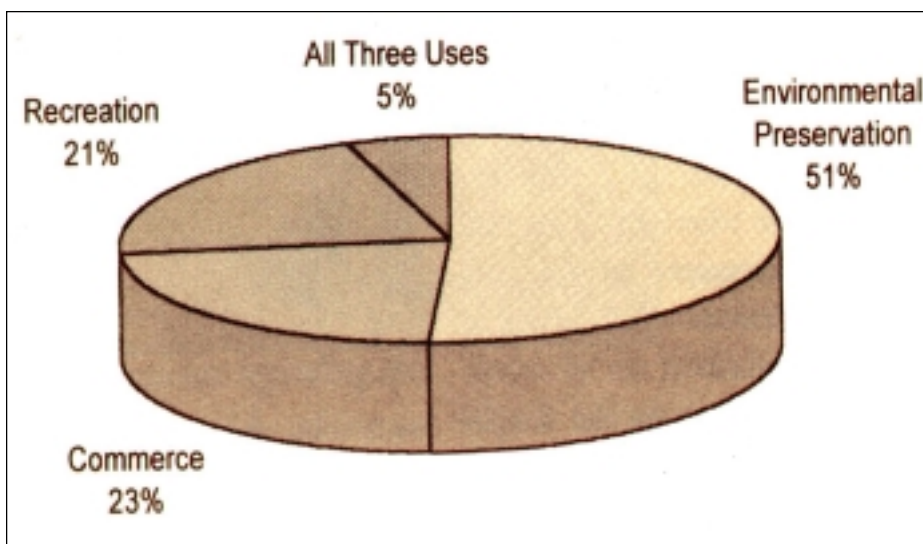


Figure 1. Percentages of New Mexico Citizens Ranking Environmental Preservation, Commerce, or Recreation as the Most Important Priority for Public Land Management.

was chosen by 21%. Five percent considered all three uses to be equally important.

Strong support for protecting the environment does not seem to hinder the public’s support for preserving ranching as a way of life, however. The following question was asked: “Some people argue that ranching in New Mexico represents a tradition of culture and custom that goes back over three hundred years. How important do you think it is to help preserve this traditional way-of-life?” Respondents then chose a point on a scale of zero to ten with zero being not at all

observe this through properly designed survey questions. The following hypothesis was developed: if the public supports rangeland management for environmental protection and recreation, as well as preserving ranching as a way of life, they will support a new niche in the retail beef market that represents those attributes.

To test the hypothesis the following question was asked of respondents:

“Suppose that an association of

(con’t on page 17)



ranchers decided to market a special brand of beef. This beef would be raised in a manner that would rehabilitate damaged rangeland as well as preserve streamside habitat. Only ranchers who raised cattle in this manner would benefit from the sale of this new brand of beef. If this kind of beef cost no more than conventionally raised beef, would you buy it?"

Eighty-three percent of respondents said "yes" to this question.

Requirements To Develop A Market Niche For Green-Grazing

For a green-grazing market niche to develop several requirements would need to be met. First, interested ranchers would need to be able to learn the science and the art of what the Quivira Coalition calls "The New Ranch." For this to occur, substantial work needs to be done on the objective validation and documentation of the practices and also on how best to disseminate them. Second, consumers of the new product must feel secure that they are paying a premium for a legitimate product. Hence, some type of verifiable certification must be developed.

Conclusion

By being aware of the pattern of preferences and values held by the general public in this important issue area, we are able to address the environmental and economic problems with more creative solutions. A market-based solution that allows the public to reward ranchers for practicing good stewardship might accomplish results that, over the last 50 years, lawsuits and Congressional lobbying have not deliv-

ered. Underlying this approach is the need to transcend the exclusionary tactics practiced by the professional interest groups that make a living off of conflict. Underlying this approach is the need for communication and understanding across the cultural divides that have historically separated ranchers and environmentalists.

Developing the technical

Public Opinion Survey Indicates Support for "Green" Grazing

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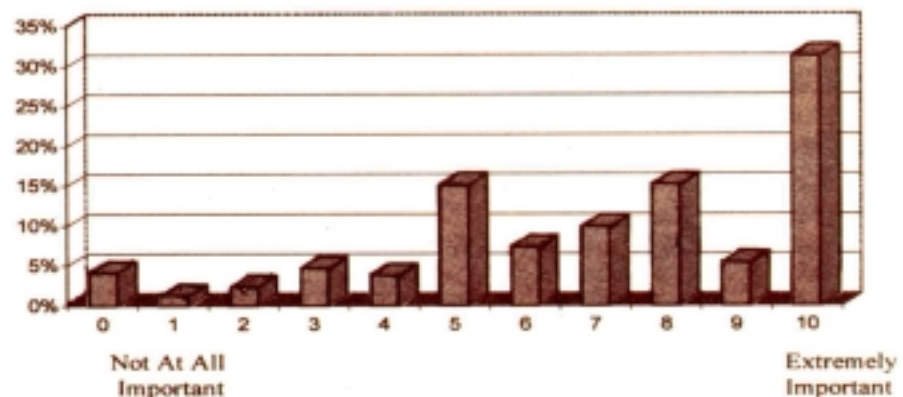


Figure 2. Perceived Importance of Preserving Ranching as a Way of Life

and educational apparatus to support The New Ranch will take no small amount of hard work, as will developing the potential for a market niche that would reward this approach. Foundations should seriously consider supporting these endeavors.

***Mr. Baca** is Program Manager of the Center of Excellence at the UNM School of Medicine. This article reports data from a survey done in 1995 by the UNM Institute for Public Policy.*



The Far Horizon

(con't from page 13)



with recreation further estranges us from nature. Under the recreational paradigm, the land becomes something “out there,” precious and remote. We love the land, we seek its pleasures, and we delight in its aesthetic qualities, but we don’t really know it in detail. Not anymore.

When we lose intimacy with the land, we lose knowledge; and when we lose knowledge, we begin to make flawed decisions. Evidence of this abounds at almost every level of the debate over the role of public lands. For example, someone told me recently that there is a shortage of trained botanists available for work. They said it was verging on a crisis.

There is certainly no shortage of lawyers.

Of course, work is only one way to gain an intimate knowledge of land; scientific study is another. There are others, but the question remains: do we really want to replace work with recreation on our public lands?

Isn’t there room for both?

It is my profound hope that, if we can tear down the false wall that separates recreation from grazing, we can make real progress toward sustainable use of our public lands. The first step on this road is to stop the finger-pointing. The second is to listen to the land. The third is to get to work.

It’s not as crazy as it sounds.

Nevada Public Land Use Survey

(con't from page 14)

public land. Both urban and rural respondents agreed that ranching makes a positive contribution to our rural communities.

Most respondents agreed that wildlife habitat is important on public land. More rural respondents (82% to 58%) agreed that hunting was appropriate. The response to whether or not wildlife habitat is improving was mixed and uncertain. Respondents agreed that proper management can result in compatible use by both livestock and wildlife and that hunting of some wildlife species is a useful management tool.

Both urban and rural respondents strongly agreed that rural community economic health and community and family values should be considered in land management decisions. They agreed that we should reach a balance that equally considers both rural communities and the environment, and that ranching is a part of our heritage and should be protected.

Both urban and rural respondents agreed that we should manage for healthy ecosystems and trust that endangered species will recover. They both strongly agreed that we should be concerned about endangered species.

Both urban and rural respondents agreed that controlled burns are appropriate if they help the natural plant community, and that vegetation management should be used to prevent wildfires.



Refuge, photographers were most likely to disturb waterbirds because of their tendency to closely approach the birds. She also found that visitors who spoke to refuge personnel early in their visit were significantly less likely to disturb waterbirds than those who did not. Fast-moving snowmobiles appeared to be more disturbing to white-tailed deer than those moving at slower speeds (Richens and Lavigne 1978). Furthermore, when snowmobilers stopped to view the deer, the deer invariably flushed.

Timing: Although an animal's inclusive fitness can be affected any time of year, recreational disturbance may elicit different responses depending on the season. Disturbance during the breeding season may affect an individual's productivity while disturbance during other times of the year may alter habitat use or foraging patterns and, thus, its survival. During the breeding season, nesting success was lower near recreational trails, where human activity was common, than at greater distances from trails (Miller et al. 1998). Even within the breeding season, the severity of impacts can depend on when during the breeding phenology the disturbance occurs. For example, disturbance during the middle of the incubation period was most severe for nesting ospreys (Swenson 1979). Additionally, some species may be more sensitive to disturbance during certain times of the year. Disturbance during winter when animals are energetically stressed may be more severe than during summer when food is, presumably, more abundant.

Location: Responses of wildlife can be influenced by the spatial context in which disturbance occurs. For example, when vegeta-

tive cover was abundant white-tailed deer did not flee from nearby snowmobile traffic; however, in open areas deer readily fled the vicinity (Richens and Lavigne 1978). Pedestrians approaching from over a ridge above bighorn sheep elicited a greater response than did pedestrians approaching from below (Hicks and Elder 1979, MacArthur et al. 1982). Wildlife responses can differ depending on whether activities occur on or off recreational trails. Marmots (Mainini 1993), western meadowlarks, vesper sparrows, American robins, and mule deer (Miller et al. In Review) showed greater reactions when pedestrian use occurred off-trail.

Frequency: The number of disturbance events that occur during a given time period can influence the level of response. For example, in Denmark the disturbance distance of roads on pink-footed geese increased with increasing traffic volume (Madsen 1985). Reproductive success of a variety of avian species has been shown to decrease due to frequent visits to the nests (see Gotmark 1992). Densities for eight of 13 breeding bird species were negatively associated with the intensity of recreational activity by park visitors in the Netherlands (van der Zande et al. 1984). In another study, abundance of 11 of 12 species was lower in areas where recreation intensity was high than in areas with fewer visitors (van der Zande and Vos 1984). Home-range size and daily movement of white-tailed deer increased with increasing snowmobile activity in Minnesota (Dorrance et al. 1975).

Predictability: When disturbance is perceived by wildlife to

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The Dark Side of Outdoor Recreation

(con't from page 5)

"Densities for eight of 13 breeding bird species were negatively associated with the intensity of recreational activity by park visitors in the Netherlands (van der Zande et al. 1984). In another study, abundance of 11 of 12 species was lower in areas where recreation intensity was high than in areas with fewer visitors (van der Zande and Vos 1984)."



The Dark Side of Outdoor Recreation

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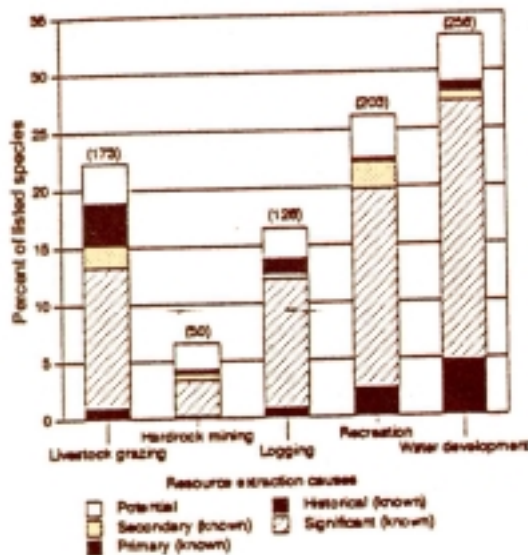


Figure 2. Identification of resource extraction activities affecting listed US species.

This graph and the one on page 21 are from *Taxpayer-Subsidized Resource Extraction Harms Species*, E. Losos, J. Hayes, A. Phillips, D. Wilcove, and C. Aldire, *BioScience*, Vol. 45, No. 7 (July/August 1995), p. 448.

be expected, either in time or space, responses may be minimal. For example, although western meadowlarks, vesper sparrows, American robins, and mule deer still exhibited a flush or flight response to pedestrians on recreational trails, a greater

response occurred when the same activity took place off-trail (Miller et al. In Review). In this study, it was concluded that wildlife have habituated to on-trail activities because they are predictable spatially, whereas off-trail activities are spatially random and, thus more disturbing. bighorn sheep in the Sheep River Wildlife Sanctuary, Alberta, exhibited minimal response to road traffic which was routine, and thus predictable (MacArthur et al. 1982). In areas

where human activity was common, birds tolerated closer approaches than in areas receiving less activity (Cooke 1980, Burger and Gochteld 1991).

Origin of Wildlife Responses to Recreational Activities

It has been shown that there can be a tremendous amount of both intra- and interspecific variation in wildlife response to recreational activities. For example, peregrine falcons in New Mexico showed large (22-fold) differences in flush distance when exposed to similar stimuli (Johnson 1988). Numerous studies have reported that different avian species exhibit varying levels of response when exposed

to the same recreational activity (Cooke 1980, Burger and Gochteld 1991, Holmes et al. 1993, Klein 1993, Miller et al. In Review). Additionally, vehicular traffic in Denali National Park elicited greater responses by moose than by caribou (Singer and Beattie 1986). Both learned and innate components influence the degree of intra- and interspecific variation in wildlife response.

Learned Responses: The learned component of wildlife response is influenced by the number and outcome of interactions between individuals and stimuli over the individual's lifetime (Poole 1981, Buitron 1983, Knight and Temple 1986). There are three categories of learned responses to recreationists which wildlife may exhibit: 1) avoidance, 2) attraction, and 3) habituation. Interactions between recreationists and wildlife individuals resulting in a negative experience, such as pain, could produce avoidance behavior, while a positive experience, such as feeding wildlife, could result in attraction behavior. Interactions involving neither a negative nor positive experience could result in wildlife habituating to recreationists.

1. Avoidance. When humans are perceived as a threat, wildlife will tend to avoid humans or habitats where human activity is common. For example, in areas of where common ravens, American crows, and black-billed magpies were persecuted, they exhibited strong avoidance behavior and decreased nest defense than individuals in areas without persecution (Knight 1984, Knight et al. 1987, Kenney and Knight 1992). Many species,

(con't on page 21)



even though not actively persecuted, will avoid areas where human activity is common. For example, grassland nesting songbirds were less likely to establish nest sites in close proximity to recreational trails where nature viewing, hiking, and jogging were the primary activities taking place (Miller et al. 1998).

2. Attraction. Attraction is defined as the strengthening of an individual's behavior because of rewards or reinforcement (Knight and Temple 1995). The most common example of attraction behavior is wildlife such as squirrels, chipmonks, or gray jays gathering at campsites or picnic areas anticipating a food reward. In some cases attraction behavior can result in potentially dangerous interactions between humans and wildlife. For example, in Great Smoky Mountains National Park, 33% of interactions between bears and park visitors resulting in injury occurred while people were feeding or petting bears (Singer and Bratton 1980).

In extreme cases, ecosystem function may be altered due to attraction behavior. For example, in Rocky Mountain National Park, Clark's nutcrackers are attracted to scenic turnouts where they are fed by park visitors. Because this species plays a key role in the dispersal of limber pine seeds, it is hypothesized that if park visitor activities discourage normal foraging behavior, a decline in afforestation rates of limber pine may result (Tomback and Taylor 1986).

Although the best examples of attraction behavior involve some sort of food reward, other situations will also cause wildlife to be attracted to humans. For example, red fox track counts revealed an attraction to snowmobile trails, pre-

sumably because the packed trails allowed for easier movement (Neumann and Merriam 1972).

3. Habituation. Habituation is defined as a waning of response to a repeated stimulus which results in neither a positive nor a negative interaction (Eibl-Eibesfeldt 1970). Numerous studies have documented at least anecdotally, that wildlife can habituate to recreational activities if they are predictable and perceived as non-threatening. Bighorn sheep appeared to habituate to predictable vehicular traffic, which they have learned is not a threat (MacArthur et al. 1982). Miller et al. (In Review) found that wildlife responded less to activities occurring on-trail than to the same activity off-trail, presumably because on-trail activities are spatially predictable and off-trail activities are spatially random and, therefore, unpredictable.

Genetic

Responses: Although it is accepted that animals are genetically predisposed to certain behaviors which can be stimulated by environmental factors (Hailman 1967), few studies have documented the innate component in wildlife response to recreational activities. Newton (1979) hypothesized that intraspecific variation in nest-defense behavior was influenced by historic levels of persecution (through the elimination of

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The Dark Side of Outdoor Recreation

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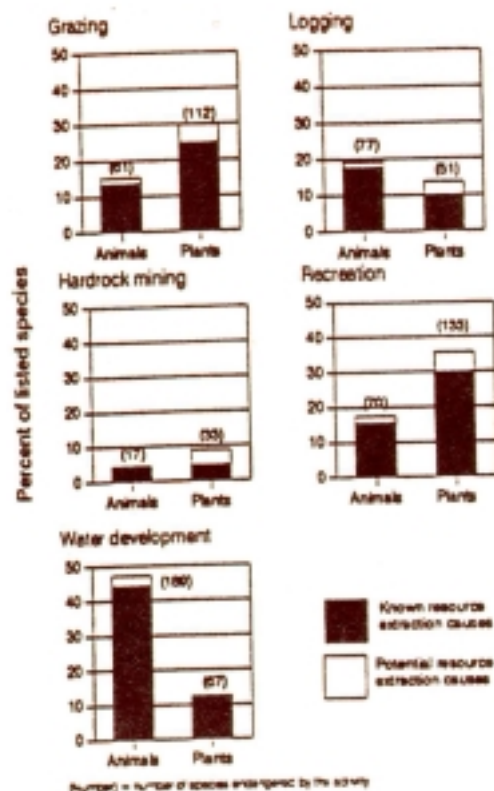


Figure 3. Percentage of listed US plants and animals affected by resource extraction activities.



The Dark Side of Outdoor Recreation

(con't from page 21)

Sign at Jenny Lake, Grand Teton National Park.



aggressive individuals). Knight et al. (1989) found a negative correlation between the number of years since European settlement (assumed to be positively correlated with the duration of persecution) and the aggressive behavior of red-tailed hawks to humans, with the most aggressive birds occurring in the areas of most recent Anglo settlement. The alarm response exhibited by chamois to airplanes is believed to be due to their innate fear of golden

eagles (Hamr 1988).

Case Studies

Influence of Recreational Trails on Breeding Bird Communities

We investigated the influence of recreational trails on breeding bird communities

in forest and mixed-grass prairie ecosystems in Boulder County, Colorado during 1994 and 1995. Species composition, nest predation, and brood parasitism by brown-headed cowbirds was examined near and away from existing recreational trails. Bird species composition was altered due to the presence of trails in both ecosystems. Generalist species were more abundant near trails whereas specialist species were less common. Within the grassland eco-

system, birds were less likely to nest near trails. Within both ecosystems, nest success was reduced alongside trails. In forests, the rate of brood parasitism was not influenced by trails. No brood parasitism was found in the grassland ecosystem. Our results may be useful to natural-lands managers faced with implementing management policies regarding the spatial arrangement of trails and trail-use restrictions.

Wildlife Responses to Pedestrians and Dogs

We measured the responses of two grassland passerines, one forest passerine, and mule deer exposed to a pedestrian, a pedestrian accompanied by a dog-on-leash, and a dog alone, both on and off-trail. Responses measured were flush response (whether the animal flushed or not), flush distance (distance between treatment and animal when flushed), distance of flush (distance animal moved after flushing), and the perpendicular distance between the animal and the trail (on-trail treatments) or our line-of-movement (off-trail treatments). All wildlife species in our study exhibited greater responses when the treatment occurred off-trail than when on-trail. In the grasslands, the dog alone treatment elicited the least response by vesper sparrows and western meadowlarks, whereas pedestrian alone and dog-on-leash treatments elicited greater responses. In the forest, American robins responded similarly to pedestrian alone and dog-on-leash treatments. Mule deer exhibited the greatest response when a pedestrian was accompanied by a dog.

Our results have implications for the design and implementation of management policies, such as using spatial and behavioral restrictions, to promote the coexistence of wildlife and recreationists.

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7%, and 20% by the year 2000.

Thus, whether on foot, by horse, motorcycle, mountain bike, ski, or snowmobile, people will increasingly enter our public lands to seek spiritual elevation, aesthetic enjoyment, the companionship of family and friends, exercise, or just to escape from the stress of our urbanized cementscapes. That is the present and more of it will be in our future.

Change in Use of Public Lands

Isn't this O.K.? Hasn't this been the struggle that has defined the environmental movement for almost a century in this country? Out with the damaging extractive uses of logging, mining, and livestock grazing and in with the more environmentally friendly and benign pursuits of outdoor recreation. Haven't we been told that livestock grazing destroys riparian areas and has sent dozens of species to extinction? That logging levels old-growth forests, increases siltation in our streams and rivers, and clogs the gills of fish on the brink of extinction? And haven't we been successful in our endeavors to decrease commodity uses? In 1988 we harvested 12 billion board feet on Forest Service lands. This year we will harvest less than four billion board feet. Livestock numbers across the West are down from 20 million a century ago to two million animals today. And every Forest Service plan revision calls for fewer livestock grazing leases and reductions in AUMs on the remaining leases.

From where I stand, there appears to be a certain degree of duplicity in our discussions to substitute amenity uses for commodity uses. Listen to these two quotes by Steve Hinchman who is the Executive Director of the Western Slope Environmental Resource Council, based in Paonia, Colorado. *"Most existing environmental problems have been caused not by*

recreationists, but by loggers, utilities, miners, ranchers and motorized vehicle users." Another quote: *"Charging fees to use public lands will generate money, and therefore power, to influence federal land management in favor of recreation and the environment."*

What these quotes suggest regarding outdoor recreation in the New West is that the environment will be better served when the public

Outdoor Recreation: For the Birds?

(con't from page 1)



Parking lot, valley floor, Yosemite National Park, California.

lands are devoted to recreation rather than logging, mining, and livestock grazing. But that assumes either: 1) that outdoor recreation is benign, or 2) if it is not, that we can better manage recreation than we managed logging, grazing, water development, or mining.

We stand at a watershed signaling change in the uses of our public lands. These issues require serious discussion and the involvement of all Americans who care about the natural heritage of our public lands. For, whether we like it or not, America's natural lands will experience ever-increasing levels of outdoor recreation. And, importantly, just as historically we overgrazed, overlogged,

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Outdoor Recreation: For the Birds?

(con't from page 23)

"Nearly one-fourth of all federally listed threatened and endangered species on public lands in America owed their declines to recreation. . . . In a review of scientific studies that examined 'nonconsumptive' effects of recreation on wildlife, 81% reported negative effects."

overmined, and overdamned our public lands, today we are gathering together the forces that may overrecreate these lands in the future.

How did this come to pass? I believe it can be attributed to three factors, one rooted in demographics, one in economics, and one in innocence.

Recreation is Right for Today's Americans

First, the demographics. America is an urban nation. Most of us live in cities, suburbs, or, even when in the country, we still think city when it comes to jobs, entertainment, or friends. Our happiness is derived from enjoying the amenities of the land, its sublime beauty, its sense of hope and opportunity. The time we spend on the public domain is time spent escaping the tensions associated with making a living in our urban worlds. We express these sentiments when asked. A recent poll of more than 11,000 randomly selected migrants and residents in 15 counties in the American West concluded that: "Amenities and quality-of-life factors are increasingly important to people's decisions about moving" and that "newcomers appear to want more access for recreational use of wilderness, preservation of established wilderness and designation of additional wilderness in the same area."

In short, we are a nation quite different from even the mid-half of this century. We no longer depend on public lands for our livelihoods, we covet them for their amenities.

Recreation is Economically Potent

Second, this transition to public lands viewed as sources of recreation rather than commodities has an important economic aspect. Let Secretary of Agriculture Glickman do the talking:

"I'd like to start by taking a brief account of our national forests. By the year 2000, our national forests will generate more than \$130 billion for America's gross domestic product: \$3.5 billion will come from timber, \$10.1 billion will come from mining, \$12.9 billion will come from fish and wildlife, and \$97.8 billion will come from recreation."

Translation: The public lands are worth more when valued on their recreational potential.

The economic argument has strong support. With the publication of Thomas Michael Powers' ***Lost Landscapes and Failed Economies***, the true economic potential of our public lands has been unlocked. Powers convincingly demonstrates that the extractive uses of our public lands have not been managed in a sustainable fashion. To make his point he traces the boom and bust nature of American towns dependent on logging, mining, and, sometimes, ranching. Powers sees public lands as being vast vaults of untapped economic potential for nearby communities, and that this promise lies in underappreciated amenity values. Viewing public lands for their amenity and lifestyle merits, Powers argues, will both be more lucrative to local economies and will avoid the boom and bust cycle which has characterized resource-dependent communities of the past.

This amenity-based promise of a more sustainable landscape in which public lands are embedded has not gone unchallenged. Indeed, considering that it is the very amenity values associated with public lands that is fueling so much of the growth in these rural landscapes, there appear to be inevitable conflicts between amenity-based economic growth and urban sprawl and loss of biological diversity.

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Recreation is Benign

I believe a third motivation for the enthusiastic reception of an amenity-based vision of public lands is premised on innocence, the belief by people that outdoor recreation is benign. And, when you think of it, outdoor recreation does seem benign. After all, how much harm could someone mountain biking through a national forest do during a day? The land looks unchanged, particularly when compared to how it would look after a person with a chainsaw had been there an equal amount of time. Recreation does not visibly alter the land as extractive uses do. Therefore one use is harmless, the other damaging.

The answer, however, to the question “Is outdoor recreation benign?” suggests otherwise. In a recent survey of causes for the decline of threatened species, outdoor recreation was second only to water development as the primary culprit. [Losos et al. See graphs on pages 20 and 21.] Nearly one-fourth of all federally listed threatened and endangered species on public lands in America owed their declines to recreation. Other summaries of the evidence reinforce this opinion. In a review of scientific studies that examined “nonconsumptive” effects of recreation on wildlife, 81% reported negative effects.

Recreationists can modify vegetation, soil, water, and even microclimates, which in turn can impact species dependent on these habitats. Many behavioral responses are of short duration. For example, deer disturbed by snowmobilers return within hours to areas they had fled. Long-term behavioral changes, however, also occur. Examples include the abandonment of preferred feeding sites and changes in food sources. Vigor of wildlife is reduced due to elevated heart rates, an increase in energy expended during flight, or a decrease in

energy acquired because foraging is disrupted. Alterations in animal energy budgets may cause death or reduced birth rates. When deer were disturbed by motorcyclists, they failed to breed the following year, while undisturbed individuals bred successfully.

Other recreational activities, such as hiking along trails, can interfere with mating and alter reproduc-

Outdoor Recreation: For the Birds?

(con't from page 24)



Off-road vehicle damage in a BLM Wilderness area, southern California.

tion as well as displace wildlife. In a study of recreational trails in Boulder, Colorado, a variety of songbirds avoided nesting alongside trails and those that did experienced higher nest failure. These results suggest markedly different levels of sensitivity to humans among wildlife.

To illustrate this point, consider wintering bald eagles, crows, and gulls that scavenge at salmon carcasses along mountain rivers in Washington. Eagles prefer to forage during early and midmorning hours. However, the presence of anglers and rafters causes them to forgo foraging when these activities are present. In contrast, crows and gulls were more tolerant of humans and were able to

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Outdoor Recreation: For the Birds?

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feed throughout the day, even in the presence of humans.

In short, outdoor recreation is not benign. We were perhaps naive to think it was. Indeed, is there anything humans do in excess that does not alter our environment, whether it be logging, grazing, mining, or recreating? The picture that is beginning to emerge regarding its environmental effects is this: **recreation simplifies communities of plants and animals**. It results in increased numbers of human-adapted species and reduced numbers of species whose evolutionary history and ecological requirements puts them at odds with people. Regretfully, this new American West with its robust tourism-dependent economy will result in an altered natural heritage. Rather than seeing more species that have figured prominently in our imagination of the West, we will see fewer.

A Future Premised on Responsibility

What is the upshot of these points? Both by our presence and through the activities of plant and animal species that thrive near humans, the biological diversity of our public lands will be altered over time. To the uninitiated, our wildlands will appear to be the same, but there will be differences. There will be red-tailed hawks rather than ferruginous hawks, starlings rather than mountain bluebirds, more coyotes and magpies and fewer pine martens and hermit thrushes. As recreational use grows and becomes increasingly pervasive across the public lands, there will be more and more species that show declines and become vulnerable to extinction events.

There will also be increasing confrontations between those who argue for the land and its natural heritage and those who wish unrestricted use of the land. This is because, in addition to there being more

recreationists, there are increasing numbers of conflicts among them. Ask cross-country skiers if they enjoy sharing a trail with snowmobilers, ask bird watchers if they prefer to watch falcons along cliff lines or climbers bouncing up and down on brightly colored ropes.

So what can we begin today that will minimize the harmful effects of increasing levels of recreationists and allow for coexistence between recreationists and biological diversity? First, land managers need to think strategically regarding the placement of recreational facilities, including roads and trails. Because trails and roads fragment landscapes, function as ecological edges, and result in altered plant and animal communities, it would be appropriate to place them adjacent to already existing edges rather than through the interior of habitats. New roads should not be placed near the edges of wilderness areas; ones already present should be considered for closure. The future will not see the large increases of formally designated wilderness areas as defined our past; closing roads along wilderness boundaries will serve to expand the de facto borders of these remnants of America's land legacy. And serious consideration should be given to closing roads elsewhere. Indeed, there are enough roads from which to chose. To those who say that the greatest cost from cutting so much of America's national forests was clearcuts, I say "trees grow." Now, instead, consider the roads built to access these cuts. Our bequeathment from a near-century of rapacious use of public lands for mining, logging, and grazing is roads. On Forest Service lands alone, we presently have 378,000 miles of them—eight times the length of the entire Interstate Highway System. Since there will be

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less logging on the public lands of the future, what is the purpose of keeping them open? For access by recreationists, obviously. But, considering that these roads were built and maintained, at least in part, from revenues from logging, will the recreationists pay the tab today?

Evidence suggests otherwise. A 1996 report by the federal General Accounting Office finds that the Forest Service loses millions of dollars each year by not charging enough to private and commercial recreationists. Investigators say the outdated permit fees charged to ski areas, commercial hunting guides, and rafting companies do not even cover the cost of processing.

Limits

Finally, responsible stewardship will also require that limits be placed on recreational activities. There are too many recreationists and too many different types of recreation to believe they can coexist alongside each other. Accordingly, land managers will need our cooperation, for only by thinking of our responsibilities to the land can we possibly accommodate the levels of recreation that exist.

Perhaps land managers should consider resting lands used for outdoor recreation. After all, haven't we expected ranchers to only seasonally graze our public lands, and loggers to reseed and allow forests to grow back after logging? Why shouldn't public land stewards either seasonally or yearly allow recreational sites to be rested, for wildlife and plant communities to recover from trampling and harassment? Indeed, if federal budgets are slashed and land management agencies do not have the resources to steward recreation, isn't it appropriate to expect that recreational use be curtailed entirely?

There is evidence that some outdoor recreationists will be amenable to these demands. A recent survey

of bird watchers found that their primary motivation was to contribute to wildlife conservation. This study highlighted two important points. First, people care about wildlife; indeed, it may often be the primary motivation for going outdoors. Second, people's goals can change over time as they gain greater insights into and appreciation for the outdoors. Accordingly, land managers can use the "authority of the resource" to educate people about their impacts on nature. When people understand that outdoor recreation, unmanaged, can alter plant and animal communities, natural resource managers will experience greater compliance in building a level of coexistence between recreationists and wildlife.

There are three general categories that pertain to the relationship between outdoor recreationists and wildlife: 1) parasitic, where recreationists exploit and are detrimental to the natural world, 2) coexistent, where there is relatively little contact or effect of recreation on wildlife, and 3) symbiotic, where natural assets are conserved and people garner physical, aesthetic, cultural, scientific, educational, or economic benefits.

This final category is where concern for our public lands is located and where we need to be. Stewardship of public lands, where humans can enjoy all the benefits of a healthy landscape and where our native plant and animal communities can also exist, is required. In the years to come, we must never lose sight of the realization that the New West and our own search for a land ethic and a sense of place will require us to first ask what are our responsibilities to the land, rather than what can the land provide us individually.

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JOIN US!

Would you like to join the Quivira Coalition? While we have finally received our non-profit status from the IRS and are beginning to receive grant money, we still rely on donations. If you would like to help us continue our educational mission, please send your contribution with this form to our Santa Fe address.

Yes! I would like to join the Quivira Coalition. I can contribute:

___\$15

___\$30

___\$50

___\$100

___Other

Contributions entitle you to receive this newsletter, notices of upcoming events and publications, and preference in enrollment for our Outdoor Classrooms.

Thank You!

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UPCOMING EVENTS

Tour the Rowe Mesa Grass Bank Saturday, July 10, 9am-3pm

We will tour the Conservation Fund's grass bank with author and historian Bill deBuys. This pathbreaking project is making all sorts of waves in northern New Mexico. Come find out why on this free tour. We will meet at the Pecos Ranger station (45 minutes east of Santa Fe) and caravan to the grass bank. Bring lunch, a hat, and water.

Ecologically Sensitive Ranching Is Possible! Find out how at a Free Workshop, Saturday, August 7, 8:30am-4pm, at the Sheraton Uptown Hotel in Albuquerque (NE corner of Louisiana and Lomas)

Speakers include: Environmentalist Dan Dagget, Scientist Dr. Kris Havstad, and Ranchers Jim Winder and Terry Wheeler. Progressive ranch management is changing the West! Come learn more at this important and provocative workshop.

Outdoor Classroom on Rangeland Health August 28-29 (Sat-Sun) at Sid Goodloe's Carrizo Ranch, near Capitan, New Mexico

We will spend two days at Sid's ranch. Under the overall guidance of a Quivira instructor, we will explore what "health" looks like on the ground. We will study plants and animals and learn in detail how to recognize a healthy landscape. Sid will give us a tour of his ranch and talk about how he integrates progressive ranch management into ecosystem function. Space will be limited and preference will be given to our members. A \$35 fee will be charged. More details will be provided soon in a mailer to our readers.

Tour the Valle Vidal Labor Day Weekend

Joe Torres of the Valle Vidal Grazing Association will lead a free tour of their innovative and successful herding operation in the Carson National Forest. We will meet in Angel Fire. More details will be provided in a mailer.

The National Riparian Team Comes To Peñasco September 25-26 (Sat-Sun)

The Quivira Coalition will host the National Riparian Team for a two-day workshop on grazing and riparian health. Space will be limited. More details will be provided soon in a mailer to our readers.

For more information on these events, call Courtney at (505) 820-2544.



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