THE DENVER POST NOV 18 2000

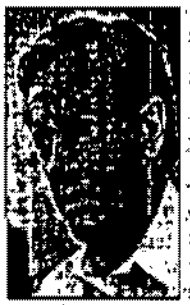
Law reform group hosts Babbitt

Environmental rules targeted

By Theo Stein
Denver Post Environment Writer

Major changes in the Endangered Species Act and other landmark environmental laws won't happen during the next two years — even if George W. Bush becomes president, Interior Secretary Bruce Babbitt told a group of agricultural and business interests meeting in Westminster on Thursday.

But Babbitt told members of the National Endangered Species Act Reform Coalition that they could achieve some of their goals, and secure a stronger state and local voice in how the law is administered, if they can focus on reform instead of repeal.



Babbitt

Thomas

The coalition, which includes farmers, ranchers and rural electric cooperatives, wants payments for landowners who help protect wildlife habitat; federal decisions based on more rigorous science; and a focus on recovering and delisting species.

"You folks are verging on the common ground where we can have a debate that can get a result of enormous value," said Babbitt.

Sen. Craig Thomas of Wyoming and Sen. Mike Crapo of Idaho, both Republicans, agreed that there might be opportunities for Congress to pass limited, "rifle-shot" changes in the act that Bush would likely sign into law — but Al Gore would not.

They said it's more likely relief would come in the form of a Republican administration.

"You can operate under the same law with different administrations and get dramatically different results," said Thomas, a member of the Senate Environment and Public Works Committee.

Babbitt urged that legislators codify into law flexible new programs developed during his tenure, such as the "No Surprises" and "Safe Harbors" programs, which give landowners who shelter endangered species a little more leeway under the law.

But he warned them not to revive the "takings debate" on compensation for the taking of private land for public use. That debate could so polarize the discussion over endangered species reform that it would result in gridlock, he said.

"We've seen several failed attempts that demonstrate radical change is not in the cards," Babbitt said. "I think there's reason to be hopeful that in the next four years, we can find some common ground."

Greg Walcher, executive director of the Colorado Department of Natural Resources, said states have to learn to live with the law. "The fact is there is enormously strong public support for it," he said. "That's true here in Colorado and across the Rocky Mountain West."

Walcher said the state has focused on working with landowners to preserve habitat as a way of keeping species off the endangered list. State biologists are performing species inventories as a check on federal data. And some state research programs are rewriting the book on how to manage animals such as the Canada lynx.

THE WASHINGTON POST NOV 14 2000

Atlantic Salmon Placed on Endangered Species List

By MARC KAUFMAN
Washington Post Staff Writer

Federal agencies yesterday took the unusual step of listing the once-abundant Atlantic salmon as an endangered species, after concluding that the number of wild salmon had declined below minimum levels for survival in the only U.S. rivers where they still spawn.

"Without protection," said Jamie Rappaport Clark, director of the U.S. Fish and Wildlife Service, "chances are this population will die out completely."

The listing comes after years of controversy and despite strong political opposition from most elected officials in Maine, the only state along the eastern seaboard that has rivers where wild salmon return. They fear that the new protections that come with the listing will destroy the $65 million salmon industry that has grown along the Maine coast in the past 15 years.

"I am profoundly disappointed—but certainly not surprised—by today's announcement," said Maine Gov. Angus King (I). He said the federal government has been on "a single-minded mission to list the salmon regardless of objective reasoning."

King has supported scientists who question whether a distinct population of wild salmon even exists in Maine rivers, which have been stocked with salmon from different rivers for decades. Aides said yesterday that King was considering a legal challenge to the listing.

In making the decision, federal agencies determined that wild Maine salmon found in eight rivers make up a "distinct population segment" that deserved protection under federal law.

The decline of the Atlantic salmon started decades ago as dams and other development along spawning rivers made breeding impossible. But federal authorities also concluded that the 6 million salmon farmed in sea pens along the Maine coast pose a threat to the mere hundreds of wild salmon returning to nearby rivers. The listing is believed to be the first of a species that is also being farmed in large numbers.

In particular, federal officials concluded that some farmed fish are escaping from the sea pens and are both competing—and possibly breeding—with the wild salmon. Interbreeding between wild salmon and farmed salmon is believed to be harmful to the wild salmon, whose legendary drive to return to the rivers of their birth is at least partly based on their genetic makeup.

"We are looking for a change in the way the aquaculture industry does business," said Paul Nickerson, chief of the Northeast regional endangered species division of the Fish and Wildlife Service. In particular, the federal agencies want the industry to phase out the use of its European salmon hybrids, to provide better containment and to ban all genetically modified salmon for now.

Des FitzGerald, general manager of Atlantic Salmon of Maine, said that fear of the listing already has depressed his industry for two years, and that yesterday's announcement could put companies out of business.

"This is a very competitive international business, and we are already latecomers into it," he said. "All the new regulations have to hurt us. But even worse, we don't think salmon farms have anything to do with the fact wild salmon are not returning here. Hobbling us won't bring a single wild salmon back to the rivers."

William Brown, science adviser to Interior Secretary Bruce Babbitt, applauded the decision, saying it will give federal agencies much more leverage in negotiations with industries that affect wild salmon. He also rejected criticisms that Atlantic salmon have been so decimated along the Maine coast because of habitat destruction and overfishing that protecting the last stragglers makes little sense.

"All the time we hear that animals proposed for endangered species status are too abundant to list, and that it should be only used for animals on the brink of extinction," he said. "Well, here these fish are at that point, but some people are saying there's no reason to try to save them because they're already too far gone."

Endangered species listings are uncommon for Atlantic fish and mammals. Federal officials said that only a handful of whales, sea turtles and sturgeon have been listed since the designation was established in 1972. The last species listed that is specific to the Northeast region was the bog turtle, which was listed in 1997.

After a listing is made, federal authorities must devise a plan to increase protection and restore habitat for the endangered species. Federal officials said yesterday they did not expect to have the new regulations in place for 30 months.

Special correspondent Pamela Ferdinand contributed to this report from Boston.

November 02, 2000

Babbitt OKs plan to balance wildlife, growth

By Adrienne Packer
<adrienne@lasvegassun.com>
LAS VEGAS SUN

Ten years of sometimes turbulent discussions on how to protect desert wildlife paid off Wednesday when Interior Secretary Bruce Babbitt signed Clark County's Multiple Species Habitat Conservation Plan.

"I'm here simply to salute your efforts; it's really extraordinary," Babbitt told dignitaries and wildlife experts who gathered at Red Rock Canyon. "Clark County's a model that must continue throughout the West."

The county adopted a plan six years ago that requires developers to pay $550 per acre of desert tortoise habitat that is disturbed.

The plan signed Wednesday extends the mitigation fee to cover 78 more plants and animals that are threatened but not yet on the federal endangered species list. The county estimates 5 million acres include the targeted species.

Wildlife activists hope aggressively protecting the species today will prevent them from being placed on the federal list, a status that could halt growth and development in Southern Nevada.

"This is a proactive conservation plan, not reactive," said Cynthia Truelove, a county comprehensive planner who oversees the plan. "We're buying an insurance policy on these species."

Like many in attendance Babbitt remembers the uproar in 1989 when desert tortoises were given emergency status on the endangered-species list. Major construction projects -- including the development of Summerlin -- were stopped, ranchers' cattle were not permitted to graze and the

mining industry suffered.

Paul Selzer, a California attorney, was called in to facilitate creation of the conservation plan. Among his responsibilities was to convince off-road enthusiasts, ranchers and developers why tortoises were worth saving.

Selzer recalled Wednesday meetings that were held in the Clark County Courthouse so that metal detectors could be used. During one discussion, a man threatened Selzer, holding his hand as if he had a gun.

"The guy said, 'Some people don't understand anything unless it comes out of a 9 mm gun,' " said Selzer, now amused by the conflict.

The desert tortoise protection plan was the building block for the new policy, which makes Clark County owners of the second-largest conservation plan in the nation. The plan will help the county fund the creation and maintenance of a desert area where species will be relocated for survival and recovery.

Truelove emphasized that the plan is still in its early stages; it eventually will cover 200 plants and animals.

Babbitt commended the county for pursuing additional species after the controversial desert tortoise plan.

"My initial reaction was (to tell the county), 'Take a step down and see if you can get unhooked from the caffeine addiction,' " Babbitt joked.

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Las Vegas SUN main page

Problems or questions

USA TODAY

Missouri River levels may change

The U.S. Fish and Wildlife Service's actions could help 3 species, but hurt some farmers

By Traci Watson
USA TODAY

A federal wildlife agency plans to recommend today that the level of the Missouri River be changed for the sake of a strange-looking fish and two small birds, a move sure to stir outrage among farmers whose fields border the river and companies whose barges ply its waters.

The U.S. Fish and Wildlife Service will recommend that the Missouri's flow from southern South Dakota to St. Louis be raised in the spring every third year and lowered every summer. This is designed to give a new lease on life to the least tern, piping plover and pallid sturgeon. All three are on the endangered-species list.

The plan could essentially rule out barge traffic from mid-July through mid-August. The Wildlife Service will also recommend higher spring flows below the Fort Peck Dam in eastern Montana, to help the sturgeon.

When Meriwether Lewis and William Clark traveled the Missouri in the early 19th century, much of it was wide, slow and changeable, with complex side channels and wetlands. Now dams and dredging have made it faster and straighter, and the Army Corps of Engineers takes steps to keep its water levels nearly constant.

The Army Corps will decide how much of the Wildlife Service's advice to take. The corps plans to issue a draft plan for the river next month. Opponents said they're hopeful the corps will reject some of the service's recommendations.

The taming of the river has decreased flooding and made shipping easier and cheaper. But the Wildlife Service says the tern and plover need higher spring levels and lower summer levels for nesting and protection from predators.

And the sturgeon, a nearly extinct fish that dates back to the age of the dinosaurs, needs surges of high water in the spring to trigger spawning, the service says.

"The risks ... are slight," said Mike Olson, Missouri River coordinator for the Wildlife Service. "The benefit to this species, which has been in the river for 150 million years, could be significant."

Environmentalists were pleased and said a change in river flows could also benefit canoeists and fishers who enjoy the large lakes behind the Missouri's dams. "This is a huge step forward," said Chad Smith, director of American Rivers' Missouri River field office.

But others fiercely disagreed, saying that there were ways to help rare species without raising the risk of flooding. Barge traffic would be basically eliminated because of the high costs of vacating the river during the summer, said Christopher Brescia, president of the Midwest Area River Coalition 2000, a group of farmers, shippers and others.

Seventh-generation farmer Tom Waters of Orrick, Mo., who grows corn, wheat and soybeans, said 3,000 acres of his land would be affected if the service's plans are carried out. That land would be at higher risk of flooding, which could ruin or prevent the planting of one-third of his crop.

"You take a third of my crop away, that's like taking away a third of my income," Waters said.

Both environmentalists and industry representatives said they'll consider legal action after the Army Corps makes up its mind.

By Jay Gravholt, AP

Endangered species: An adult pallid sturgeon is released into the Missouri River in July near Verdel, Neb. It needs surges of water to spawn.

Breaks as a National Resource Conservation Area, a status less restrictive than monument designation and one that requires Congressional approval.

But failing that, he said he would recommend to Mr. Clinton that he use the Antiquities Act to make it a national monument.

"The Missouri Breaks is still a live issue," Mr. Babbitt said. "We had been moving toward legislation at one point; now we're drifting. But it's not a dead issue by any stretch of the imagination."

Here at Pompeys Pillar, which Clark named in honor of the son of the expedition's guide Sacagawea whom he called Pompy or Little Pomp, no such friction has emerged.

Each member of the state Congressional delegation has requested that the mesa overlooking the Yellowstone River 28 miles east of Billings be afforded greater protections, especially in light of the approaching Lewis and Clark bicentennial. As Mr. Burns wrote in a May 9 letter to a local preservation group, "There is no doubt that Pompeys Pillar is a special and historic place that merits protection."

Standing at the carving today, Mr. Babbitt looked out the river bluffs. "This is a tremendously evocative place," he said. "I can almost see Clark's flotilla of canoes coming down the river. This is a fabulous asset — for Yellowstone County, Montana and the whole country."

James Woodcock, Billings Gazette

Interior Secretary Bruce Babbitt yesterday visited Montana's Pompeys Pillar, which he will recommend for designation as a national monument.

Form 1120-7
(January 1987)

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BUREAU OF LAND MANAGEMENT

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Species extinction risks grow

▶ A comprehensive study of world wildlife lists 11,046 plants and animals in danger.

By Mara D. Bellaby
The Associated Press

LONDON

A wild cat that roams the Iberian Peninsula, a dolphin off the New Zealand coast, a caviar-producing sturgeon and a red-flowered shrub clinging to the mountains of Mauritius — all are teetering on the edge of extinction.

Some 11,046 plants and animals risk disappearing forever, according to the most comprehensive analysis of global conservation ever undertaken, the World Conservation Union's 2000 Red List of Threatened Species. The report, released Thursday, examined some 18,000 species and subspecies around the globe.

But scientists acknowledge that even a study of this magnitude only scratches the surface. Earth is home to an estimated 14 million species — and only 1.75 million have been documented.

Many may become extinct before they are even identified, much less assessed by scientists.

"Global society would be horrified if someone set fire to the Louvre in Paris or the Metropolitan Museum in New York, or if someone blew up the Pyramids or the Taj Mahal," said Russell Mittermeier, president of the Washington, D.C.-based Conservation International.

"Yet every time a forest is burned to the ground in Madagascar or the Philippines, the loss to global society is at least as great, yet no one pays very much attention — and sadly it happens every day."

Conservationists estimate that the extinction rate is 1,000 to 10,000 times higher than it should be under natural conditions. That means that in the first decades of the 21st century, many creatures — from a majestic Albatross to Asian freshwater turtles — may join the ranks of the flightless Dodo bird.

The primary reason: humans. Everything from expanding cities to deforestation, agriculture and fishing pose a significant threat to the planet's biodiversity. In the last 500 years, some 816 species have disappeared — some permanently, while others exist only in artificial settings, such as zoos.

Since the last assessment, carried out in 1996, the number of mammals identified as critically endangered — those closest to extinction — increased from 169 to 180. The number of birds rose from 168 to 182.

According to the 2000 Red List, one in every four mammals and one in every eight birds is at risk.

Statistics for plants are more difficult to assess because so many are yet to be analyzed. But conifers, the most studied group, suggest a depressing trend — some 16 percent are at risk, according to the report.

The Red List is produced by the World Conservation Union's Species Survival Commission, a network of some 7,000 species experts working in almost every country in the world.

Indonesia, India, Brazil and China are among the countries with the most threatened mammals and birds, according to the 2000 report. The United States fell out of the top 20 list, replaced this time by Cameroon and Russia.

Disappearing life

A study released Thursday of some 18,000 species and subspecies around the world found many stand a strong chance of becoming extinct. The main reason, experts say, is humans — growing cities, farming, hunting and pollution destroy the species' habitats and threaten the planet's biodiversity.

Wandering albatross

Iberian lynx

Species closest to extinction

	1996	2000
Mammals	169	180
Birds	168	182
Reptiles	41	50
Amphibians	18	25

Source: The World Conservation Union

The Associated Press

NEWS SUMMARY

U.S. Department of the Interior Office of Communications

THE NEW YORK TIMES PICK-UP IN ROOM 1063

TUESDAY, OCTOBER 3, 2000

Move to Save Wildlife Snags Spending Bill

By STEVEN A. HOLMES

WASHINGTON, Oct. 2 — The three oddly named species — two birds and a fish — are unfamiliar to most people. But the piping plover, the least tern and the pallid sturgeon have emerged as central players in the drama surrounding passage by Congress of a $23.6 billion spending bill for energy and water projects.

The fate of the three species, all of which live on the upper reaches of the Missouri River, is, according to the environmentalists and Clinton administration officials, tied to increasing the river's spring flows every three years and reducing water levels by about one-third for 8 to 10 weeks in the summer.

That idea, however, has led to a major water fight between environmentalists and the recreation industry in up-river states like South Dakota on one side and farmers and the barge industry in downriver states like Missouri on the other.

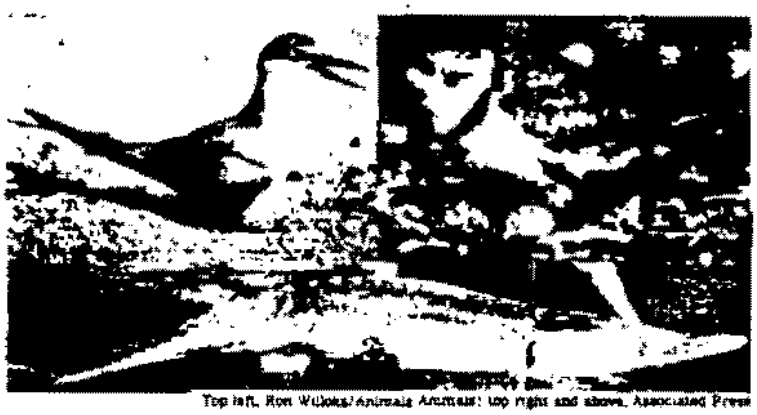
Senator Christopher S. Bond, Republican of Missouri, has attached a provision to the spending measure blocking the Army Corps of Engineers from implementing its plan to change the river flows.

Mr. Bond has argued that the plan increases the risk of catastrophic springtime floods in his state and that keeping the water levels low in the summer will harm barge operators on the Missouri.

The Senate approved the energy and water projects measure today despite a threat issued last week by the White House chief of staff, John D. Podesta, who wrote Congressional leaders that if Mr. Bond's amendment remained, President Clinton would veto the bill.

Today's vote, largely along party lines, was 57 to 37, less than the two-thirds necessary to override a veto.

Yet in the calculus that often surrounds spending bills where state political interests often clash with national ones, the fight over the flow of the Missouri River presented the administration with a difficult choice.



Top left, Ron Wilkins/Animals Animals; top right and above, Associated Press

A plan to change the flow of the Missouri River to aid the least tern, top left, the piping plover and the pallid sturgeon is under attack.

Should it side with environmentalists, an important constituency, and the minority leader, Tom Daschle of South Dakota, a key ally in the Senate? Mr. Daschle is trying to protect the $85 billion recreation industry in up-river states, where lakes, streams and reservoirs favored by anglers are often drained to maintain high river flows for barges on the lower stretches of the river.

But choosing to support the environmentalists and Mr. Daschle, who favor the Corps plan, may exact a political toll.

The Army proposal is opposed by Missouri Democrats, like the House minority leader, Richard A. Gephardt, the mayors of St. Louis and Kansas City and Gov. Mel Carnahan, whose close race for the Senate could be affected by the veto.

And, some Republicans warn that if Mr. Clinton carries through with his veto threat, he might alienate enough Missouri voters to cost Vice President Al Gore that state in the presidential election.

"People in Missouri know about this," Mr. Bond said, "and if the Gore campaign believes it is in their interest to have Clinton veto this, I guarantee you this will have political ramifications."

Much of this fight is over one small, stocky, insect-eating bird, the piping plover; another forked-tail member of the gull family, the least tern, and the pallid sturgeon, a prehistoric fish whose ancestors date back 150 million years, according to fossil records.

"Certainly they have been on this planet a lot longer than the politicians who are currently debating this issue," said Mike Olson, the Missouri River Coordinator at the United States Fish and Wildlife's office in Bismarck, N.D.

Once abundant in the Missouri and on its banks and sand bars, the three species are all threatened, and the pallid sturgeon is approaching extinction.

Fish and Wildlife biologists and environmentalists blame management of the Missouri for the species' problems.

Dredged to create a deep, fast-moving channel and with upstream dams releasing water at constant and high rate — all to accommodate barge traffic — the Missouri has become increasingly unfriendly for the species. Biologists say that the sturgeons' spawning behavior is set off by a rise in water flow in the spring.

"The spring rise helps give them the urge to do the right thing," Mr. Olson said.

The fast-flowing spring river also washes organic material into the Missouri, which helps increase the number of insects that the piping plover feeds on, and helps create sand bars that are nesting areas for the plovers and the terns.

Reducing water flows creates small pools where the baby sturgeon can grow without fear of larger predatory fish or being buried by sediment.

Environmentalists and the Fish and Wildlife Service argue that for years the Army Corps of Engineers has operated the Missouri River primarily for the benefit of the barge industry, spending $7 million to $8 million for an industry whose Missouri River operations only generate $8.8 million in economic benefits.

But a coalition of farmers, grain companies and barge operators say they are concerned that lowering the water levels and in essence creating two shipping seasons would mean the demise of the barge industry on the Missouri, leaving railroads with a virtual monopoly on transporting bulk cargo. They also argue that the increase in the spring flows will make down-river states more vulnerable to floods like the record 1993 deluge that devastated the region.

"The reason we manage the waterway system was to provide a low cost transportation system on the river and prevent these flooding events. What Fish and Wildlife wants to do is reverse that trend," said Christopher Brescia, president of the Midwest Area River Coalition 2000, a group of agricultural and industrial producers, shippers and barge operators that oppose the Corps plan.

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Activists Criticize Plan to Expand Ft. Irwin

■ **Environment:** Army base will add 200 square miles to its training center. Opponents say parcel set aside for endangered desert tortoise is insufficient.

By SCOTT GOLD
TIMES STAFF WRITER

RIVERSIDE—After two years of negotiations, officials announced Thursday that Ft. Irwin will expand into more than 200 square miles of desert land. But environmentalists are charging that the plan—described by backers as a "win-win" agreement—amounts to a death knell for threatened desert tortoises.

Ft. Irwin, an Army base in the San Bernardino County desert between Barstow and Death Valley National Park, has been planning to expand since the mid-1980s, but the desert tortoise issue has blocked repeated attempts.

An agreement announced Thursday afternoon allows Ft. Irwin's National Training Center to expand to the south. The base, already one of the largest Army training centers in the nation, wants the room to allow for a variety of operations, including battlefield exercises designed to test and incorporate new weapons and strategies.

The pact—made between the Army and the U.S. Department of Interior, and announced by Sen. Dianne Feinstein (D-Calif.) and U.S. Rep. Jerry Lewis (R-Redlands)—sets aside land on the fort's southeastern side for the desert tortoise habitat.

"Training and retraining is absolutely vital if we are going to be the force for peace that we strive to be," Lewis said. "I'm very comfortable that we have dealt with the environmental problem."

Many environmentalists disagree.

Though the agreement requires the Army to realign its training area to the southwest to avoid what may be the tortoise's best remaining habitat in California, environmentalists object that it sets aside just 10 square kilometers of land for the tortoise.

The agreement appears to dismiss the findings of a panel of environmental experts that the Army itself commissioned last year. That panel determined that if the Army expanded the Training Center, more than 2,000 square miles of the Mojave Desert should be reserved for the desert tortoise.

Please see LAND, A32

LAND

Continued from A3

Even that recommendation came grudgingly—most on the panel said Ft. Irwin should not expand at all, because the tortoise's survival is more in doubt than ever.

"They are totally ignoring the best available science," said Daniel Patterson, a desert ecologist at the headquarters of the Center for Biological Diversity in Tucson.

"They are ignoring their own scientists, and they are ignoring reality. This is a death warrant for the tortoise and an unmitigated disaster for the tortoise's best habitat left in the west Mojave."

Major Rob Ali, spokesman for the National Training Center, declined to respond to those charges, saying only that "we're pleased with the agreement and we're grateful for the leadership involved."

NEWS SUMMARY
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PICK-UP IN ROOM 1063 MONDAY, JANUARY 11, 1999

TROUT *WINTER 1999*

Catch and Restore

A Birthday Greeting From 1849 C Street, Washington, D.C.

THE SUNLIGHT THROUGH the lodgepole pines is incandescent. The stream at my feet—Roaring Creek in the Colorado Rockies—is exhilarating. But the biggest delight is the brightly-colored fish tugging on my fly line: a greenback cutthroat trout.

By Bruce Babbitt

U.S. SECRETARY OF THE INTERIOR

It's not the seesaw struggle that moves me, although landing a greenback is an experience not to be forgotten. Nor is it the satisfaction that comes from learning the fine points of fly fishing—how to skitter a dry fly across the surface, for example, to entice a strike. No, the real joy on this summer afternoon comes from what the greenback cutthroat is teaching me.

I am the one who is fishing. But this greenback cutthroat trout—a species back from the brink of extinction—has me hooked. It is showing me the value of a healthy ecosystem, inspiring me with stories of grassroots conservation, infusing me with wonder. In doing so, it is following an old path. Like salmon in the Northwest, it is rising to totem status, an emblem of hope, an object of reverence.

But it is something more as well. In the splash of crimson and gold at my feet is a powerful spirit that is rippling through trout streams across the country, one that transcends fisheries conservation and reaches into the brave new world of watershed restoration.

Skeptics call me a dreamer. Native trout and salmon are in trouble nearly everywhere, they point out. I agree: I am a dreamer. And yes, there is too much dark news. But one can dwell in darkness, or move into the light. As Secretary of the Interior, I prefer to move into the light. After all, I see plenty of it in my travels around the country.

I see it in the California Bay Delta, where one of the largest watershed restoration efforts in history—aimed in part at saving salmon—is underway. I see it in the dismantling of environmentally-harmful dams from North Carolina to Oregon and, as habitat improves, in the return of Atlantic salmon to New England. I see it in riparian rehabilitation projects on the Marys River in Nevada, the Sheepscot River in Maine, Currant Creek in Wyoming, and elsewhere.

And when I see it, more often than not, I see Trout Unlimited. I see people who love salmon and trout and watersheds. And I see something else, too: the footprints of history. For Americans have long been stirred by nature—and dire threats to it. A century ago, we refused to let the buffalo slip into oblivion; two generations ago, we said no to the wanton slaughter of waterfowl. Today, the plight of salmon and trout is stirring a similar resoluteness in you and me. We simply cannot let them vanish.

I am no philosopher of fishing. But there is something about salmon and trout that makes them non-expendable. They are more than food. They are more than sport. More than living indicators of stream health. Like the sound of migrating geese in autumn or the smell of a campfire, wild, native salmon and trout are a part of us, links to an older, mysterious world. They are swimming, spawning compass points, biological coordinates that give us a sense of where and who we are. Lose that and you lose something basic, something that all the museums and mitigation projects in the world can never repair.

At right, Secretary Babbitt fishes Montana's Big Blackfoot River with guide Paul Roos. For more than a decade, TU members and landowners have been working to protect the Blackfoot's native bull trout and restore the river from past logging, grazing and mining activity. Last summer's "threatened" designation for the bull trout could help stop a cyanide heap-leach gold mine planned for the banks of the Blackfoot.

Wild salmon and trout move us like the wind; they sweep through us like a tide. We need them when we're young—for adventure. We need them when we're old—for contemplation. But wild salmon and trout need us, too. They need us to heal riparian areas, tear down harmful dams, restore floodplains, replant forests, restock streams with native species, and do all the other things necessary to rebuild stocks.

That is what makes salmon and trout conservation so exciting—so different from setting aside land for a national park or wildlife refuge. To protect wild salmon and trout, we must transcend traditional boundaries. After all, no stream—and no trout or salmon species—can be healthy if the land around it is sick. Moving water is a mirror of its surroundings. To save salmon and trout, we must heal the land itself. We must dream big dreams; we must think like a watershed.

Thinking like a watershed means realizing everything counts, that all parts of a watershed are connected. It means seeing linkages—understanding the science of stream health. Cut too many trees in the headwaters, for example, and you send a pulse of sediment into the mainstem, hurting aquatic life. But the inverse is also true. Cut the right trees, in the right way, and you improve forest health and safeguard trout and salmon. But there's more to it than ecology.

Thinking like a watershed is about possibilities, too—about imagining the future by rediscovering the past. It means dreaming about the day when all wild trout and salmon can reclaim a significantly larger percentage of their historic haunts, when streams and rivers will again pulse with something akin to their natural rhythms and richness in pre-European settlement times. Many say it can't be done. But I have a simple reply: It is happening already. And in case after case, watershed after watershed, Trout Unlimited is leading the way.

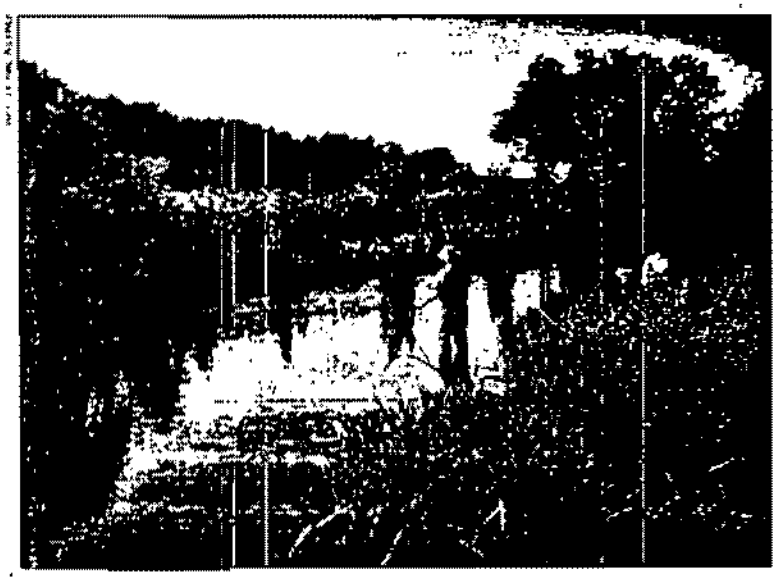
One example is TU's involvement with greenback cutthroat trout restoration. In the early 1970s the greenbacks became the subject of an

intense recovery effort when remnant populations were discovered in remote streams in Colorado. From the beginning, local TU volunteers, working with agencies and community groups, have assisted with reintroductions, stream rehabilitation, and public education, resulting in the species' return to more than a dozen streams and five lakes.

More than most groups, Trout Unlimited sees "the big picture." You realize that trout and salmon, like spokes on a wheel, radiate outward, taking us to the larger world of ecosystem health. You know that by restoring trout and salmon, we repair more than ecosystems. We heal more than watersheds. We recover some of the lost grandeur of our nation.

That is why, on your 40th birthday, I salute you. It is why, every chance I get, I leave Washington, D.C. to join you streamside in another celebration of some ambitious stream restoration project. For through your actions, you have become more than just another interest group at the door of government. You have become a source of inspiration.

For example, your work on Vermont's Clyde River, Maine's Kennebec River, Washington's Elwha River, and California's Lagunitas Creek has inspired me to see dams in a new light. Dams are not monuments. They are not ancient pyramids. They're tools that serve the needs of the people who oversee them. Those needs change, often quite rapidly, over the course of a generation. Our challenge today is to find a new equilibrium for dams that balances economic goods with other intangible goods and services, that evaluates dams by the health of the watersheds to which they belong.



Launched in 1996, TU's "Home Rivers" project on the Kickapoo River in Wisconsin is taking a multi-pronged approach to watershed restoration. It includes scientific research, public education, economic studies, and hands-on habitat work.

You have also inspired me to see more clearly the social side of fisheries conservation. Your "Home Rivers" watershed initiatives on the Kickapoo River in Wisconsin and the Beaverkill in New York demonstrate how saving trout brings people and communities together, and revitalizes rural economies. That point was driven home not long ago when a colleague spotted a new pro-business message in a Main Street window out West: "This Business Supported By Steelhead Dollars."

More importantly, you have inspired me through your actions—by seeing opportunities and seizing them. There are numerous examples but let me cite one I know well: your recent work with a Nevada Indian tribe to restore the legendary Lahontan cutthroat trout to its native home in the Truckee River, which links two of America's great bodies of water, Pyramid Lake in Nevada and Lake Tahoe in California.

No bureaucracy encouraged you. No team of biologists gave you a road map. You simply did it—not with federal grants or high-tech gear but with old refrigerators converted into miniature fish incubators that will help naturally restock the Truckee River with wild trout. Last year I helped you place one of those contraptions in the river. I made that journey because your work on the Truckee transcends the status quo. In fact, it might even be called visionary. You are imagining the future by understanding the past—by seeing the Truckee River as it was a century ago and one day could be again: a marvelous desert stream filled with an awesome spawning run of gigantic Lahontan cutthroat trout. You are combining the act of creation and restoration into a powerful tonic, a kind of prescription medicine that can be applied to ailing ecosystems everywhere. And by focusing on trout, you are taking the conservation community—and the debate about conservation—beyond boundaries, into watersheds, where it belongs. ■

Interior Secretary Bruce Babbitt is charged with the stewardship of over 440 million acres of public lands. Hallmarks of his six-year tenure include restoring Florida's River of Grass; old growth and salmon streams in the Northwest; wolf packs back into the Rockies; spawning fish runs by removing old, unsafe, fish-killing dams; and the luster of the Endangered Species Act by conserving whole, integrated habitats. He packs a 4-weight fly rod on his frequent travels afield, using it to showcase (and reap the benefits of) conservation laun, while whispering, "Can you believe I get paid for this?"

"Like the sound of migrating geese in autumn or the smell of a campfire, wild, native salmon

and trout are a part of us, links to an older, mysterious world."

Don't 'Snooz' on Salmon

By Bruce Babbitt **(840 words)**

Hear that alarm?

That's the sound of 13 Pacific salmon runs crashing from Puget Sound to Central California, plunging toward the Endangered Species Act, and possibly to extinction.

Like every rude awakening, alarms leave two options. The tempting one is to hit the 'snooz' button and roll over. Call in sick. Point fingers and say it's someone else's problem. That's what we did in the early 1980s with warnings about a critter called the spotted owl. By the time we finally got moving -- in the eleventh hour -- the train wreck had already begun.

Our other option is to get up, eat our Wheaties, and get an early jump on the work ahead, using three valuable lessons we've learned so far.

First: states and tribes must take a leadership role conserving species, as soon as possible. Just because a species isn't yet endangered, doesn't mean it ain't broke, and can't be fixed. State wildlife managers didn't and don't wait for deer, elk, wild turkey or waterfowl to reach the "Emergency Room" stage before taking steps to rebuild game populations. Their expertise and authority is essential to the process.

Oregon has already stepped forward to the challenge. Under a "Candidate Conservation Agreement (CCA)" the Administration agreed to hold off listing coho salmon if the State took fast, serious steps towards recovery. Gov. Kitzhaber asked his legislature for $32 million, and got it. His rules-and-incentives "Oregon Plan for Salmon and Watersheds" will modify timber and agricultural practices to improve water quality in coastal estuaries where coho spawn.

Will it go far enough to avoid listing? That largely depends on Oregon's farmers, ranchers, loggers, and state officials, not to mention El Nino. Yet either way it *should* become the focal point for slamon recovery. A jump start.

Second: private landowners must fully participate. Without their help we have no chance

of rescuing listed species, let alone restoring them. Steelhead and salmon ignore property lines and city limits, spawning up watersheds dominated by private holdings. Yet every year, their habitat shrinks due to collective changes, growth and development. Extinction is not an option. Nor is rigid blanket regulation. Nor *status quo*.

Enter the Habitat Conservation Plan(HCP).

An HCP is an environmental blueprint negotiated with landowners which says, in effect: 'Build here, log there, farm that, and keep this dam. OK? Now, in exchange, leave that field open, steer chain saws away from those river banks, leave a stream buffer along here.'

In Washington state, landowners have pioneered this concept. Why? Because in return, we ensure their right to pursue legitimate business productivity -- "no surprises" -- knowing that regulators won't come back in a few months or years with a different agenda. They get certainty.

To restore listed spotted owls, bald eagles, and marbled murrelets the President's Forest Plan spawned half dozen major HCPs with timber companies like Weyerhaueser, Plum Creek, Murray Pacific and the state itself. These already cover 3 million acres, protecting stream buffers, steep slopes, and unbroken corridors *on their own land*.

Now Gov. Locke is poised to go further, drafting a comprehensive "State Salmon Strategy Framework." That way, even if runs should ultimately be listed, Washington will be ready with the equivalent of a huge statewide HCP for its native chinook salmon and steelhead.

Third, we must engage counties, cities and suburbs in the recovery process. Bring them to the table, set a firm goal for them, and match their efforts to reach it.

Five years ago California quietly passed legislation that does just that. It's time for Oregon and Washington to take note, for that law -- creating the Natural Communities Conservation Program -- has begun to bear real fruit in Orange and San Diego Counties.

Like the Willamette Valley or Puget Sound, Southern California's explosive growth was pushing one of that region's natives towards extinction. A bird called the gnatcatcher inhabits

the last remaining undeveloped coastal zone south of Los Angeles. To protect it we faced a powerful, billion-dollar real estate industry, a major regional recession, a county bankruptcy, and opponents who predicted the Act would derail any economic growth in the region.

Instead, the Act harmonized growth and conservation. People shared an affinity for the landscape. They knew protecting habitat for endangered species kept open space for human species. They saw what L.A. had lost to unchecked sprawl, congestion and asphalt.

So local governments accepted the challenge, hashed things out with landowners, until ultimately city, county, state and federal planners set aside a total of 210,000 acres of open space habitat for 85 imperiled native plants and animals.

If Oregon, Washington, and California can respond to the wake-up call, so must Congress. It can and should reauthorize the Act to make these reforms of the past five years -- from 'No Surprises' to Candidate Conservation Agreements -- permanent.

In addition, Congress has never provided states with matching grants to rescue native species. It must do so now, as an incentive for us all to take early action, roll out of bed, and hit the floor running. The clock is ticking. One year to reverse the decline of Oregon's and Washington's state fish. It isn't much time. But if used right, it may prove just long enough.

UNITED STATES DEPARTMENT OF THE INTERIOR

SPEECH BY SECRETARY OF THE INTERIOR

BRUCE BABBITT

Before:

SOCIETY OF CONSERVATION BIOLOGISTS

College Park, Maryland

June 17, 1999

P R O C E E D I N G S

MR. BABBITT: Thank you very much. It's a pleasure to be here with you. I guess I was slightly taken aback tonight when I drove in and like all of you, saw a group of demonstrators out there. I looked at the group and I said to my aide who was with me, "You know, that's really great. This is terrific."

My aide looked at me as if I had just gone insane, and said, "Well, why is that? I said, "Well, you know, I haven't had any demonstrators picketing an event in more than a year now and it's getting kind of lonely."

I was starting to think even ominously, maybe I'm losing my edge. Now, as to the message for the demonstrators, are they here in the hall? Well, somebody invite them in.

Let me say this: how many of you are deeply interested in issues of critical

habitat and its relation to Section 7 of the Endangered Species Act? Here's what I want to propose to do. I actually want to talk about some other things.

So, I am going to propose this: I will try to shorten my speech a little bit, then I will have a question and answer. With respect to the Endangered Species Act, we can cut it two ways.

One, everyone stay, or you can walk about at that part, or we can convene separately. Maybe if there really are not many of them, let's just sort of put it in a box. You can pick it up in the question and answer, and anybody who gets tired of the metaphysics of critical habitat, just pack up and leave.

I don't mean that too lightheartedly. The Endangered Species Act is without any question the most visionary and far-reaching environmental legislation that has ever been passed anywhere in the

world; and it is one, of course, that I am deeply committed and deeply interested in.

I came to office in 1993 feeling -- most prior administrations basically said we do not like this law and rather than trying to make it work we will just step back, let it drift into contention and then say see, we told you it would not work.

Well, I believe it can work. I have spent a lot of time admittedly producing policies out of whole clothing, getting in on the ground and looking at this stuff, getting engaged and trying to flesh this thing out. I have had a lot of success, and in fact, I am planning to take on the critical habitat discussion, but there are other things I would like to talk about as well.

In the invitation from Gary Raffley and others, he said, and I do not think he was intending to demean anyone, but he said, "Look, these are a bunch of scientific wonks, and I would like for them to hear from a

policy wonk."

So, he invited me to kind of see if we can cross the bridge between science and policy, because the Endangered Species Act uniquely is about a really complex, rich and difficult intermixture.

I think we are headed into a lot of big questions. I was reading in your newsletter last week Mike Scott's discussion of reserve systems and there was a big scale meeting between conservation biology and policy and raw politics. That's it.

That is an example of a bridge. Words that I had to say about bio planning in the journal. Let us just start with another example, and it takes us straight into urban sprawl, urban form, habitat, open space and how it is to be resolved and merged together.

Well, I was thinking this afternoon the USGS, Biological Resource Division, establishes trends reports and it is just out. I hope you will all have a look at it.

I do not know how much they are charging for it. It is pretty heavy, but it is beautifully done. That is a policy issue too.

What it is talking about is kind of broad-scale science, monitoring quantitative data to begin looking at all these issues, not just one species at a time, but in a context of the entire country, entire planet. The whole world, for that matter.

What I wanted to come down on tonight, there was something that I would like to take you through an emerging sense that I have about how we connect all of this with the American people, because that is the ultimate challenge. This will not get done, the center will not hold, unless there is public support.

I got to tell you, I do not get very far talking about critical habitat at the local Kiwanis Club. Bio diversity does not seem to have much slack when I am out

talking to the Democratic Central Committee. I am constantly searching for a metaphor for developments for ways that we relate to the American land.

Here I want to just use a few examples. I think Dave mentioned most of them. The Everglades' forests, roads, dams. Talked about a little economy -- I have made over the last it is almost 7 years. It seems like 700 sometimes, but the amazing thing is I am still here. I am still standing and I am proud of it.

I think we are actually entering in the large sense of history a brand new era at the end of this century that I would call the Age of Restoration, and I would contrast it this way. A century ago at the end of the 19th Century, we embarked upon an era of preservation and it has been a long and extraordinarily productive run.

But the basic concept behind much of the nature conservation in the last

century has been this: We will go out there and set aside that mountaintop, that canyon, that wilderness, put a fence around it to protect them forever. The words of the Wilderness Act which I paraphrase, places untravelled by man where man is a temporary visitor but is not part of the landscape.

Implicit in this model, in this paradigm -- that if we set aside the back 40, then we have met our obligation. We are pretty much free to do what we want with the rest of the landscape. There is kind of a duality, a dichotomy there that says that is for nature, the rest of it we will just have at it.

Now, of course the emerging and deepening lesson to be drawn from conservation biology is that is interesting, but nature does not work that way. Everything relates. You cannot do it so tidily and painlessly as saying the back 40 is out there, the rest does not matter.

My journey of discovery into this of course began in the Everglades, but just happens to be the most dramatic -- a national park of a million acres down there buffered by another million acres of big cyprus and a whole variety of other land designations. I went down to look at the Everglades.

Actually, I had never been there before. The reason for that is I am a Westerner, and I grew up with the Westerner's view of the natural landscape, mainly that there is nothing worth looking at east or the Rocky Mountains.

When I went to the Everglades I was overwhelmed. What I found was a park which was fading away toward extinction as a place. It was not the fault of the National Park Service, but gradually I started to understand the problems are all external to the park.

The problems begin 200 miles away in the suburbs of Orlando in the upper

tributaries of the Kissimmee River, exacerbated in the watershed, by the sugar fields, by all the activity on the land.

All of a sudden we are -- in the new reality, and that is even to protect the back 40, we got to look at the whole thing. That talks about restoration, and it talks about a massive injection of science.

We began that in 1993 in the Everglades and 1994. We have been spending $10 million a year, a little more in some years, on basic interdisciplinary science directed at two issues that all of you know well. The first one is, what do you mean by restoration? What is the base line? What is it we want ideally at the end of the process?

In a system like the Everglades, we got an unbelievable mixing of sea water, fresh water, land, all in sort of a fragile equilibrium. It is a tough issue. A lot of facts out there that are complicated by the

fact that there is of course no static base line. —

In the case of the Everglades, that is an understatement because since the end of the Pleistocene Era, sea level has been moving steadily in cycles, upwards, downwards. In some periods, glacial periods, Florida is not there -- so we have, first of all, an extraordinarily difficult science issue.

We know there is no such thing as a static base line, but there are some clues to the evolutionary track, and we have to start somewhere to make some good judgments.

The second one, once we decided roughly by reference to some kind of base line, how much restoration we can do. We need to monitor carefully. Now, that is not sexy stuff, man. I never will wake an audience anywhere talking about monitoring -- something that we are beginning to understand as being critical out of which can be

extracted some extraordinary insights of the functioning of ecosystems.

The other thing I with the Everglades was that the public really took with this notion that we can restore the landscape to something that is different from what we have known. It is a large reach, and I am going to come back to that issue.

The Everglades Restoration Plan will be publicly released in about a week, and I invite you to have a look at it. It is the most ambitious restoration project that has ever been undertaken anywhere on this planet. It has enormous -- it is a very positive harbinger for the future.

Next in line with Dave's introduction, let me say a word about forests. My introduction to this problem came in the summer of 1974 in the wake of a tragic accident in South Canyon, Colorado, where 14 hotshot helipack members and smoke jumpers were killed in a fire -- mountain

site.

I was there the next morning and resolved that I was going to figure out to the last detail what those people under my leadership had been subjected to this kinds of risks and why they were on that landscape and why it was we were having what I felt was an inordinate number of these kinds of accidents.

I did that by joining a hotshot crew and I spent a good amount of time all summer out on fire lines just packing up and going out, sleeping on the ground and chopping the line and doing that stuff and I learned a whole lot from the people that were out there on those lines.

What they awakened me to was that the forests were changing, that they really were in a lot of danger. I worked with people that had been out 20 and 30, in some cases 40 years. Again, think of my own experience growing up in the West.

Again, think about mental images of the San Francisco peaks which rise above the town. I could see them out the window of my bedroom as a little kid and I have all these snapshot images, and I went back to Flagstaff, Arizona, and God, these forests have changed. Something is wrong out there.

Of course, that is about the point that I rediscovered the guy named Wally Covington who said, "Bruce, you know, well, we've got this all figured out. I think you've made a discovery." "Well, can you tell me what it is?" "It's domination of fire suppression." You all know the story.

In fact, Aldo Leopold had it all pieced out from his own observation up on the Melee Gap back in 1924, and the question then became can we do forest restoration, and the Ponderosa dominated forests in the Rocky Mountain West.

That of course led in turn to a document called -- Fire Policy that Dan

Glickman and I put out in 1995. Now, through a very aggressive effort, we are going -- it is essential to forest health, keeping down the fuel load so that when fires do occur naturally they do not incinerate the whole place. They burn lightly, clearing out the thickets and keeping the thing healthy and vigorous.

We have had a lot of science. Take a look at the Rocky Mountain Forest -- from the University of Idaho, Boise National Forest. A wonderful project -- north of the Grand Canyon. We are just beginning. We are going by the seat of our pants. We are dead certain that this restoration is conceptually correct and validated by historical studies. Is controversy arising? Probably.

Well intentioned activists who do not pay attention to you people, their mantra is it is a sin to --

What I mean by that is in some of these places, in order to put fire on the

land without it turning the place into a cinder, in some cases we got to get that fuel load down so that when we do a controlled fire that does not happen. That means in some places we actually got to go -- we are going to need a lot of science, a lot of monitoring, and a lot more insight to validate and persuade people that we cannot give up.

I remember Wally. He was sort of a renegade Secretary of the Interior and a colorful and eccentric guy. I was with him in Alaska once -- fabulous landscape: "The problem, you can't just let nature run wild." He was coming at this from shot of shoot everything in sight, plow everything, but in a rehearsed way.

There is of course a small ring of truth in that, and the reason is that we have altered landscapes to the point that it is a cop out to say step aside and leave it alone -- all over the Northwest, the absence

of fire. You are all aware of those issues. Restoration must be part of the solution.

I am going to finish on this theme and to persuade you about the importance of this concept as a century transition -- preservation of the back 40 to in all matters it all relates and we must live rightly in balance with the whole system.

The next two that I am going to finish with I think are going to take me back into this -- we got to connect with the American people. The first one is the wolf. Of everything I have been associated with in 7 years in this job, the wolf has animated the American public more than the next 10 things put together.

When we arrived the following day on that winter morning and took those wolves and released them into the acclamation pen and went back and watched them moving across the valley, they took to the landscape. These guys do not need any Viagra. They do

not need any training. They do not need anything.

They took to it and increased and multiplied. It of course just animated the ecosystem. Just electrified the landscape. The -- and bison were sort of standing around like lazy tourists. Well, they ain't doing that anymore.

The coyotes were the kind of the mountain in Yellowstone. No more. No more. As all these changes were rippled in, you see increases in some of the mammal populations that the coyotes were working on, and the coyotes have been put in their place.

The carrion left by the wolves is having all sorts of impacts on all sorts of critters up in the sky and elsewhere. The American people have -- the reason is the wolves really sends stories, because the dog in your back yard is a wolf and the extraordinary relation and powers that come out of this evolutionary sequence, people see

it in its purest form.

— It is magic, magic -- explain why it is that all of the other parts have an important, central and magical place.

Let's kind of phase out on dams and rivers because I think that maybe has much generating power as wolves, or even more. I was frankly kind of surprised when I went out to McFarrin Dam about a year ago.

It's on Butte Creek which is a tributary of the Sacramento River. Butte Creek is one of the last relatively free-flowing rivers coming into the Sacramento Range, and salmon and steelhead have just about disappeared because low down in the central valley is this dam.

I went out with much fanfare, proclaiming that I was going to single-handedly remove this dam. I took a sledgehammer out and took a couple whacks at it and understood very quickly why I was not meant for a life of manual labor.

But the dam did come down, and of course the results were -- there have been a few hundred salmon struggling around the bottom of this diversion dam, and last year or a year later there were 20,000 salmon clocked going past that sight in the foothills of the Sierra.

The reason people are so angered and sort of kind of confused by tearing down dams is because -- the hardest thing of all is to persuade people at the Rotary Club, at Sunday mass -- that there can be something, that what we have that it is possible to imagine a visionary landscape.

We tend to think of landscapes as static, that all we can do is go preserve another 40 acres up there before we mess it up. We live in the present validated by our own snapshots and experiences on the landscape.

All of a sudden it is being challenged. People say, "Look, you know,

dams were not meant to be the Pyramids of Egypt. These were utilitarian devices, and look what happens when you take them out." It is a -- like the wolf for making a statement that we can imagine something greater.

I think that was what was in the Glen Canyon Dam -- ,released the artificial flood. "We can't take down that canyon dam. At least not on my watch." But we can go out and look at those dams and say can't we operate them in a way to replicate a little bit the original -- cycle of floods and low periods, and of course, we did it -- came back to the Grand Canyon forever -- that's really incredible.

What they do not appreciate is that was preceded by 10 years of science in an effort costing I would guess $20 million over that 10 years, maybe a little more, because we have to figure it out. Set some base lines. Monitor the hell out of that river, all the way from Lee's Ferry -- to Lake Mead.

But again, it is about getting the science moved up against the policy and then making certain -- what it can all mean.

That is the beauty of the power of watershed restoration. Every one of you can look at your community and see what is happening with the idea of watershed restoration. People really understand the value. They understand water. They are not getting excited about bio diversity or ecosystem management or critical habitat or any of that stuff.

When you talk about the river or the stream in your neighborhood, they understand how it relates to the whole thing. Say watershed, there is sort of a tune they will understand. Get them out there.

Salmon tributary in Oregon planning the salmon -- and all of those things and they have made a commitment for life. It happens. You see, that is about involvement; the vision and the ownership of the vision

doing hands-on stuff.

— I cannot take somebody out to a wilderness and get them -- I can get you to do that by going out there and studying it. I can get somebody to take ownership of that stream in your neighborhood because they understood.

Water has a sacramental quality in every religious tradition. It leads us back and forward. It raises our sights to the integrity of creation.

I guess it is time to wrap up. I would just say this. We have got to do it together. You got to be passengers on this trip. Gary says, "We need to blend science and the policy."

The answer is yes, yes, yes, because if we can partner this thing and interpret it and get some state behind it, it is going to be a very, very exciting ride. Thank you.

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"To See the Forest AND the Trees"
Establishing the roots of New Forestry for the 21st Century

Remarks of Interior Secretary Bruce Babbitt
Yale University School of Forestry
December 10, 1996

I appreciate your invitation to speak at the Yale School of Forestry. For it was here, nearly a century ago, during a protracted national debate over natural resources, that the science of American forestry began. Today the controversy over forest policy is raging once again. And this same campus can and should take a lead role in formulating new policies for the century ahead.

The forest controversies of our time are rooted in a century long struggle between the utilitarians, who view forests primarily as trees to be farmed for their cellulose, and those who see forests in a wider perspective of values - whether wildlife, recreation or as a part of our spiritual heritage which obliges us to be stewards of God's creation. At risk of oversimplification, the controversy is an extension of the debate between Gifford Pinchot and John Muir, a debate that was underway at the time this school was established.

During the past four years the Clinton Administration has launched new initiatives to resolve these controversies by using interdisciplinary science to look at forests in new ways. These initiatives are now in progress in the old growth forests of the Pacific Northwest, the Tongass forests of Southeast Alaska, the Sierra Nevada of California, the ponderosa forests of the

Intermountain West, and the longleaf pine forests of the South, to name a few. They have been carried out cooperatively by the Forest Service, the Bureau of Land Management, the Fish and Wildlife Service and the Environmental Protection Agency, and other agencies working together to invent new methods of managing forest landscapes both to preserve their structure and diversity and to assure sustainable harvests.

These initiatives have come to be known collectively as "New Forestry". By whatever name, they represent one of the great success stories of integrated, interagency resource management in this Administration. My purpose today is to discuss in some detail both the content of these New Forestry initiatives and to give some flavor of the working relationships within the Administration that have made them possible.

Our first opportunity to shape New Foresty concepts was right at hand when the Clinton Administration arrived in 1993. The northern spotted owl had triggered the crisis in the old growth forests of the Pacific Northwest. Yet like a sneeze, the owl was only a symptom warning us that the entire Northwest forest system was sick, overstressed and in need of treatment.

Across the years, timber companies in the Northwest had carried Pinchot's utilitarian legacy to new heights of apparent efficiency. They clearcut vast mountainside tracts, burned the slopes free of slash and replanted bare slopes, from mountain top to stream's edge, with carefully tended monocultures of Douglas fir that can be recut and processed every forty years.

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But over time these practices have generated a rising tide of public reaction. Salmon streams choked on dirt slides and runoff from bare mountainsides. And the resulting tree plantations were not authentic forests that families wanted to look at, much less hike through or camp in.

Asked what it expects from their forests, the public responds to the scent of spruce and incense cedars, the sound of wind swaying the bough of ancient trees, the sight of morning dew sparkling on a profusion of ferns and mosses, and the chance to eat wildberries and catch native salmon.

The Administration's response to the crisis can be found in the work of the Forest Ecosystem Management Assessment Team (FEMAT), carried out by an interagency team under the leadership of Jack Ward Thomas, then the chief wildlife research biologist of the Forest Service. The FEMAT report is already being recognized as one of the most important documents in the history of American forestry; for the first time it lays out a general ecological basis for the coordinated management of 24 million acres of land administered by the Forest Service and the Bureau of Land Management.

The FEMAT report tells us that an old growth forest is a complex, living, integrated whole, much like the human body. The scientists told us what good physicians tell their patients: systematic treatment won't work; in the words of FEMAT, " There is no technolocigal fix." Instead we must prescribe treatment for the whole forest - in this case a vast landscape that stretches from

California to British Columbia. On that scale we had to use interdisciplinary science, like a giant CAT-SCAN, to analyze and catalog more than 1,700 species, components of the forests and to formulate a plan that would restore the forest to its original health.

For all the science and all the complexity, however, much of the resulting Forest Plan expresses the intuition of any local angler or birder. Consider the salmon. A fisherman seeks stretches along a river bank kept cool and stable by trees, a stream spotted with logs and overgrowth that in turn provide shelter, oxygen, leaf litter and insect habitat. He knows the forest holds soil in place, keeping water clear and gravel beds free of silt and good for spawning.

The fisherman felt what we confirmed through good science: that you can't have healthy salmon streams unless the adjacent banks are permanently protected from timber cutting. The President's Forest Plan reflects this with wide stream buffers along all fish bearing streams, from headwater to tidewater.

Upland habitat tells a similar cautionary tale, as we learned by retracing the food chain of the owl. The spotted owl, like the salmon, needs a network of unbroken corridors textured by a mixed canopy of trees varied by age, size and species. Even "salvage" of dead, rotting fallen trees has an impact: for these logs release nutrients, which feed fungi, which feed truffles and ferns, which feed voles and flying squirrels, which feed, among other things,

the spotted owl. Finally, we also factored in the lessons of island biogeography: If you fragment habitat too much, species extinction becomes inevitable. All these lessons led to a plan to protect and restore structure, health and diversity. We set aside several million acres of interconnected old growth forest reserves. Outside those cores and corridors, we modified all cutting techniques to protect forest structure, encourage natural reseeding, and maintain habitat corridors throughout the entire landscape.

By this time you may be asking whether the Forest Plan leaves room for Gifford Pinchot's timber economy at all. It does. President Clinton addressed the economic issue in his charge to us at the forest conference in Portand in April, 1993; "Here in the Northwest, as in my own home state, people understand that healthy forests are important for a healthy, forest-based economy; understand that if we destroy our old growth forest, we'll lose jobs in salmon fishing and tourism and eventually in our timber industry as well."

Under the forest plan, logging has been scaled back from the massive, unsustainable cuts of the 1980s. For, at that rate, the forests (and the forest economy) would be destroyed within a generation, just as they were in an earlier time in New England and the upper Midwest. By doing so, we ensure a steady, predictable supply of timber for loggers and mills in the century ahead. And we ensure that the forest towns will continue to diversify, where new people and new industries come for the quality of life and health

of the natural landscape. Four years after the President's challenge, it's already working. Unemployment in the Northwest forest communities has hit the lowest level in generations. We didn't lose 100,000 jobs, as skeptics predicted; we created them.

By developing policy up from the scientific and moral grassroots, the President's Forest Plan opens a new chapter in the history of forestry. And there is of course still more to be written. The Administration is now completing a comprehensive interagency study of the public lands on the east side of the Cascades -- the entire drainage of the Upper Columbia River Basin, from the snowy crests of the Cascades across the high deserts of Eastern Oregon and Washington, to the headwaters in Idaho and Montana.

These "East Side" forests differ dramatically in aridity, temperature, elevation, soils, and frequency of fires started by lightning. When we excluded fire and boosted logging under Pinchot's utilitarian legacy, these forest underwent stress from drought, disease, insects, overcrowding, and an unnatural successional change from ponderosa pine toward shade tolerant species of spruce and fir.

For any student who may want a deeper look into these successional changes, I recommend a book by Nancy Langston, Forest Dreams, Forest Nightmares, that documents in depressing detail how decades of excessive timber cuts have accellerated these changes in the Blue Mountains of Oregon. On the brighter side, next month, the Forest Service and Bureau of Land Management will release two

comprehensive environmental impact statements that analyze these changes and lay out pathways to restore health across the entire upland watershed.

Well, yes, you may say. New Forestry may seem all well and good for 250 million acres of federal forest lands in the West. If the American public wants so badly to scale back timber harvests and protect old growth to bring back health and integrity to their forests, that is their right. But what about private land owners?

Fully two thirds of American forests are privately owned. The owners range from individuals with five acre woodlots to corporations like Weyerhaeuser Co. and International Paper Co. with millions of acres. East of the Mississippi, eight of every ten trees are privately owned by someone who has a constitutionally protected right to an economic return on that investment. Federal laws like the Endangered Species Act and the Clean Water Act do apply to private forest lands. But on private lands we must apply them with restraint and respect for the rights of the owner, demonstrating early on that an ounce of careful forestry prevents a pound of painful and invasive regulation.

For example, what would we do if a clear symptom -- decline of a forest bird that, like the spotted owl, nests only in old growth -- were to suddenly break out across the private timberlands of the Southeastern United States? It happened. The bird is called the red-cockaded woodpecker, and it's been on the endangered species

list longer than the spotted owl. But the reason you have not heard as much about it is because there hasn't been a train wreck like that in the Northwest. And that, in turn, is because we've applied the lessons of the New Forestry early, often, and everywhere we could.

In 1993, Pete Correll, the head of Georgia-Pacific Corp., the largest landowner in the region, came to my office. He made a suggestion that I quickly agreed to: Match his foresters with our biologists from the Fish and Wildlife Service to create a sustainable woodpecker plan for 4.2 million acres of the company's timberland. Our result was a landmark, common sense agreement whereby 50,000 acres -- 1 percent of the company's private property -- would be preserved in the company's sustainable forest plan as core habitat clusters for approximately 100 remaining woodpecker groups. That Georgia-Pacific process has led to five more similar timber industry agreements within the South alone.

After these, our next step was to forge more formal covenants, plans that were over the long term broader and more flexible in scope. To that end, we teamed with the Potlatch Corp. in southern Arkansas to develop a full-fledged habitat conservation plan on a 230,000 acre tract. Potlatch, which has the fourth largest population of woodpeckers on private land in the U.S., will keep 15,000 acres on rotations that guarantee there will always be at least 6 percent of the land retained in old growth within the shifting mosaic of age groups across the landscape. More than a

dozen similar plans are now under development in other parts of the South and on private forest lands in the Pacific Northwest.

With each success, we have expanded the search for new remedies tailored to specific conditions. For example, could we create positive incentives for landowners to protect and improve habitat? Our biologists in North Carolina set out to try. Two years ago, they came up with a concept now called "Safe Harbor." Here's how it works: Landowners agree to take affirmative steps to improve habitat for woodpeckers, such as controlling the hardwood understory through prescribed fire or cutting. Then, if and when owners want to cut their trees -- to sell as timber or firewood, to farm, even to build a golf course -- they give notice and the Fish and Wildlife Service will capture and transfer the birds to suitable habitat elsewhere. It's simple and effective. Even with some development, properly structured plans will always result in a net increase in suitable habitat. So far, 34 landowners, including the famed Pinehurst Resort, have opted into plans which could yield 67 new woodpecker colonies.

We have also come to understand the special needs of small landowners, who have neither the time nor the resources to produce complex plans that can fairly be requested of a large timber company. And because of insights gleaned from 15 years of research, we know that in some cases isolated birds in habitat fragments are at high risk of extinction, suggesting they will do better overall when moved to larger unfragmented forests. The result? In August we reached an agreement with the State of Georgia which eases the

regulatory burden on the owners of small woodlots located in fragmented landscapes by allowing the removal of isolated breeding pairs to better habitat in adjacent national forests and other public lands. Five more Southern states -- North Carolina, South Carolina, Louisiana, Texas, and Alabama -- are all drafting similar plans to accommodate the needs of both landowners and woodpeckers.

And lest there be any doubt about the level of public concern in the south for the fate of our forests, in a regional opinion poll conducted by the Forest Service three months ago, the public was asked how much logging should be allowed on 3.2 million acres of national forests in that region. The surprising answers from the overwhelming majority of those rural residents was: "None." Indeed, two thirds responded that they would prefer to see those national forests set aside permanently as wilderness. Perhaps this response indicates an intuitive appreciation of an important land management reality - in regions such as the South where there are few public lands, those lands should have proportionately more management emphasis on protection of ecosystem health and public use.

Just as New Forestry created a comprehensive forest plan in response to the spotted owl, these Southern success stories show how, in quite different circumstances, the health of private forest lands can be reconciled with sustained timber production. Which leads us to the final question for New Forestry: What about those

forests where there are as yet no listed threatened or endangered species? Is it always necessary to let a crisis of forest health boil over before facing up to these issues?

There can be little doubt that the public concern for the future of our forests extends well beyond public lands and well beyond the confines of the Endangered Species Act. Consider Maine, where the pulp and paper industry owns half the state and employs half the rural towns. There, the days of labor intensive, selective logging of forests are nearly gone. In their place, $600,000 machines called "feller bunchers" now cut and stack trees like chopsticks, snipping one every thirty seconds, clearcutting hundreds of acres a day. Since 1980, 2,000 square miles of Maine forests have been stripped bare. And the citizens of Maine are in rebellion; last month, 80 percent of the voters, proudly rooted to a landscape of history and beauty, voted to restrict clearcutting and to improve forestry practices.

Fortunately, there are an increasing number of cases where timber companies are taking the initiative. For example, Champion International Corp. has on its own initiative invited state and federal agencies to join in a cooperative research program on a 6,000 acre tract of its property, with the objective of learning more about how to both maintain a healthy species diverse forest and a better sustainable harvest. Asked how the forest would benefit, Champion's executive vice president, Richard Porterfield answered, "We don't know yet, but we'll make this a working laboratory and adapt as we learn."

On other forests Champion has applied this approach on a landscape scale. Assuming that the national forest and other public lands in higher elevations will constitute the core of habitat and species protection, Champion manages adjacent lands by designating as much as 15 percent of its forested areas for special management, including stream buffers, wetland protection, and wildlife corridors connecting to adjacent public lands.

In North Carolina, Georgia-Pacific has initiated a unique partnership with the Nature Conservancy to jointly manage an ecologically important tract along the lower Roanoke River where foresters have established buffers along streams, banned all timber harvest on a particularly sensitive 6,500 acre tract, and required helicopter logging on the rest of the area. And in adjacent areas, Georgia-Pacific has also established guidelines, including stream buffers and set back zones, for responsible logging among private landowners, from whom the company buys 75 percent of its timber.

Full implementation of New Forestry concepts will also require active participation by the states. There are still many states that have no forestry codes at all, and others in which codes are on the books but seldom implemented. There are, however, encouraging signs of progress. For example, in New Hampshire's sensitive reforested land above 2,700 feet, state regulators and timber companies have established a detailed plan to limit harvests, roadbuilding, and to maintain cover protection of native

species on more than 33,000 acres. Even more recently, foresters from Hancock Timber Resources have begun to restrict development and to provide fishing, hiking and hunting access to 31,000 acres of forestland in Vermont's Northeast Kingdom.

Yet with all these hopeful examples, the New Forestry is only beginning to take root. The innovations which I have described still apply to only a small percentage of forest lands, federal, state, and private. There are still many foresters in the private and public sector who subscribe to the strictly utilitarian mindset -- that the sole measure of good forestry is board feet of timber and tons of wood chips, that all fire is evil, and that the ideal forests is a monoculture of even aged, sawmill friendly trees.

The New Forestry initiatives are solidly grounded in good legislation. The Endangered Species Act is probably the best known of the statutes that we have drawn upon. Less appreciated is the role of the National Forest Management Act which also mandates forest practices that protect biodiversity. In fact the NFMA regulations (promulgated in a Republican administration) go somewhat beyond the Endangered Species Act to require that "fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area." Another example is the 1978 Weeks Act amendments which specifically encourage federal support for prescribed fire programs to maintain forest health.

Unfortunately, however, in recent years the Congress has

repeatedly attempted to circumvent these laws and to undermine the emerging success of the New Forestry by mis-using the budget and appropriations process to create special exemptions that do not receive the scrutiny and debate that is a part of the normal legislative process. These are the infamous "budget riders." The "salvage rider", by which Congress evaded environmental laws and mandated an expedited 5 billion board feet of cuts from national forests, is just one example. And in the past two years, Congress at various times attached to Interior appropriations bills a rider to suspend provisions of the Endangered Species Act applicable to the marbled murrelet, a rider to waive environmental laws in the Tongass National Forest, and a rider to terminate the Upper Columbia River Environmental Impact Statement process. These riders were unhorsed only by the threat of Presidential vetoes.

I would, however, like to conclude on a note of optimism. Just as the great forest debates of the last century finally produce a consensus for reform, so the forest controversy of our time must, I believe, finally produce a new era of reform, responsive to the clearly expressed will of the American people that our forests need more protection.

And there are some encouraging signs that the new Congress will be listening more carefully. The leaders of the new Congress have in recent weeks stated their intention to move away from the extreme positions of the 104th Congress and to seek consensus that reflects the will of the American people. In recent weeks Senator John McCain, a westerner and a Republican, has written, "Polls

indicate that the environment is the voters' number-one concern about continued Republican leadership of Congress...Only by faithfully fulfilling our stewardship reponsibilities can we expect to remain the majority party."

Our mission is clear and simple: Our obligation, as stewards of God's creation, is to protect the structure, integrity, and biological diversity of our forests. We must harvest timber in ways and at levels that maintain and restore the health and diversity of our forests. The result of this New Forestry will be more jobs, better communities, and a legacy for our children.

"OUR SHARED MISSION: EXPLORE, MAP AND PROTECT AMERICA'S HERITAGE"

Remarks of Interior Secretary Bruce Babbitt before the
American Defense Preparedness Association
Orange County Convention Center, Orlando Florida
Tuesday, March 19, 1996

* * * * *

I'd like to start this morning by boasting of one of the most famous federally protected nature preserves in the United States of America.

It lies in the heart of North Carolina, and I was down there with our Fish and Wildlife Service one sunny day last fall. Morning light washed down through the protected longleaf pine forest to an understory of golden turkey oaks and wire grass. We moved through the trees, binoculars in hand, searching for a rare, native, black and white woodpecker with a tiny red crest.

Eventually we came upon a tall, longleaf pine with a telltale clue: sticky, protective sap dripping down the bark like candle wax. Tracing its flow up the trunk we saw the source, a nesting cavity thirty feet off the ground. In the hush, we waited for the appearance of the red-cockaded woodpecker.

Suddenly, the silence was shattered by a column of Amphibious Assault Vehicles roaring through the forest less than fifty yards away.

That's right, as some of you no doubt guessed, this beautiful longleaf pine forest -- one of the last remnants of an ancient woodland ecosystem which once covered 90 million acres across the Southeast -- is located on Camp LeJeune. It's not only home for an endangered bird, it's home of the First Marine Division, perhaps the most aggressive landowner in the world.

And one of the least disruptive.

Above the roar of the engines, Maj. General Patrick Howard explained to me that his AAVs coexist just fine with woodpeckers. Troops and training vehicles learn to maneuver around the nesting trees just like any other obstacle, and the rare birds don't mind the noise, as long as they have old growth nesting trees and enough space to forage.

As the AAVs roared past, General Howard glanced at me with a smile. "We even have a new slogan," he said: "THE MARINES: We're saving a few good species."

They're not the only ones. On 400 military bases around the country, the Army, Navy, Air Force, and Marines are all practicing environmental stewardship as never before.

Which might lead some to conclude that these remarkable examples of land management, these partnerships between the military and the Interior Department represent a new direction for the Department of Defense.

Nothing could be further from the truth.

To the contrary, the heart of my message today is that military and civilian land managers have always worked together under our shared mission: to explore and map and protect America's natural heritage.

That shared mission began not on Earth Day, but nearly two centuries ago, on July 5, 1803 when President Jefferson sent Captain Meriwether Lewis and Captain William Clark to lead a band of experienced woodsmen in the Corps of Discovery.

As they set out to scout a route to the Pacific, Jefferson instructed that they must "enter observations about the exact latitude and longitude, climate, geography, Indians, minerals, animals and plants - especially those forms of life not known in the U.S."

This tradition of military/civilian partnerships flowered in the 19th century with the great Pacific Railway Surveys, carried out under the War Department and led by both civilians and army officers like Gov. Isaac Stevens, Captain Gunnison and Lieutenant Whipple, all accompanied by cadres of civilian scientists.

And those civil/military partnerships continue today with one of our most fundamental shared responsibilities: the making of maps. Right here in Florida, the first significant map of the Everglades was drawn by a young lieutenant of topographical engineers -- Joseph C. Ives.

I cite these not as historical footnotes but because our partnership continues and remains vital even today. The Florida Everglades is but the closest example.

Just after World War II, Congress enacted a comprehensive flood control program for South Florida. It partitioned the management of South Florida into two pieces: water management by the Army Corps of Engineers, and land management by the Department of Interior. Of course, we have since discovered that it just doesn't work that way, that you can't separate the land from the water.

So in the past three years we have embarked upon a comprehensive plan to restore the natural hydrologic systems that once nourished the Everglades and Florida Bay. It is the largest environmental restoration project in the history of the world

This time, the Army and the Department of Interior are sharing the leadership of the restoration committee and the scientific task force that supports it.

Now, if there are still skeptics who consider it a novelty to see Army Corps Generals working side by side with federal rangers and biologists at Everglades, let me offer some precedent. For there are many times throughout history when we have called on the military for some unusual forms of assistance.

When Yellowstone Park was created in 1872, it wasn't long before the poachers moved in to begin slaughtering the herds of elk, deer and bison.

Unable to restore order, my predecessor asked the Secretary of War to station troops in the park. And so, late on August 17, 1886, Troop M of the U.S. Cavalry rode into Yellowstone and relieved the superintendent of his duties. The troop remained there for the next 30 years and did an excellent job until the National Park Service was created in 1916.

Our challenge today is a more complex. It involves compliance with many strong environmental laws enacted in recent decades. The law at the heart of our shared mission as land managers, of course, is the Endangered Species Act.

This Act sets forth a national policy to preserve the biological diversity of God's creation. And the key to protecting species is the protection of their habitat on the landscapes that we live on, train on, and, in time, pass on to future generations.

That has deep implications for the armed forces. For there are 400 bases and 25 million acres under the jurisdiction of the nation's third largest landowner, the Department of Defense.

But over the past year, since that tour of Camp LeJeune, I have witnessed your efforts to protect biodiversity in over a dozen regions of the country:

- At Fort Stewart in Georgia the base commander showed me how he had implemented a habitat conservation plan to restore the forest landscape, protecting endangered species, bringing back the wild turkey and deer, and providing hunting and fishing opportunities for the surrounding communities.

- At the Norfolk Naval Base I saw the Seabees planting native trees in a wetland restoration site converted from an abandoned gravel pit.

• Out in the California Desert, I have seen a unique partnership developing between the Department of Defense and Interior. It includes the China Lake Naval Weapons Test Center, the Twenty-Nine Palms Marine Corps Base, the Chocolate Mountains gunnery range, Fort Irwin and Edwards Air Force Base.

It also includes Death Valley National Park, Joshua Tree National Park, the Mojave Preserve and a number of Congressionally designated wilderness areas.

Working together across one of the most unique desert landscapes in the world, we have initiated an unprecedented ecosystem initiative to assure species protection and landscape conservation.

• Another striking example of our cooperative effort is at Camp Pendleton in California where the base commander took me to a bluff overlooking the Pacific and explained how he had designed amphibious landing exercises to protect migrating terns that nest on the beach during early summer. He also told me how Camp Pendleton has become an oasis of biodiversity -- the last block of undeveloped shoreline between Los Angeles and San Diego.

That pattern of stewardship is recurring again and again, all over the country; military bases are natural areas, like islands, in the midst of the development that is taking place on all sides.

Even as we celebrate our military's extraordinary stewardship tradition, we might ask: how did it come about?

One answer is quite simple. When I tell my subordinates to do something, chances are they'll prefer to think about it for a year or two, ignore the directive completely, or get back to me in several months with a long memo about why it can't be done.

Generals, in my understanding, usually don't get those responses.

A deeper reason may be that military leaders -- by training and by the realities imposed by warfare -- instinctively see the natural landscape around us as a whole; all the details are relevant and must be factored into decision making.

Battlefield management calls for understanding the whole landscape. As the historian John Keegan tells us about one of our greatest generals: "Grant had an acutely developed feel for the landscape. He had always been fascinated by maps...he possessed an almost intuitive knowledge of topography."

The third and most important reason is more personal: your love for our natural heritage.

This love is manifest everywhere and throughout history. During War II, one homesick soldier in Europe wrote home the following letter:

> "I had no conception of how much the national parks could mean in wartime until I came here. If you could hear the men talk of our parks and forests, you know how great a part they play in the American scene. When the talk turns to "before the war," it is invariably...the hours spent with rod and reel on lake and stream, the camping trips, the quiet nights in the pine woods...and it is those things that these men are fighting for, as well as for their homes, sweethearts, wives and families."

I heard a modern echo of that soldier when I toured Eglin Air Force Base last spring. After a briefing, the base commander Major General Stuart Chapman led us through the forest to a cluster of trees, marked by red flagging, which held woodpecker nests. He then explained Eglin's use of prescribed fire to control undergrowth and thereby maintain the health of the forest. Impressed by his knowledge of the ecosystem and his dedication to restore it, I asked him, "How did you come to be so interested in these issues?"

He replied quietly: "I was in Russia recently. I saw the devastation that comes when a country does not value its lands, and when a military abandons its stewardship role. I have devoted my entire life to defending America, and our natural heritage is a big part of what makes this great country worth defending."

I can't say anything more eloquent than that. You are doing your job extremely well; I speak for millions of grateful Americans in saying, "Thank you."

THE THIN GREEN LINE

(2,800 words)

By Bruce Babbitt

I recently mounted over my desk in Washington a color photograph of what I consider perhaps the most complex and intriguing landscape in the world.

It is not one of those "Sierra Club" pictures of some precolumbian Garden of Eden, untouched by the hand of Western man. To the contrary. It is a landscape where architects and engineers have tried -- with the best of intentions -- to control and subjugate that garden to make it more productive and useful.

To do so, they dug drainage ditches, straightened out rivers, built dikes, imported exotic trees like melaleucca, Brazilian pepper and Australian pine. They even installed a long retaining wall so that heavy rainfall would not run off from the garden to flood nearby homes. But because of their hasty efforts to make over an entire landscape, I can today clearly see in the photo the extensive damage they have done to the garden. I see a deeply flawed landscape.

And an epic opportunity.

For my photograph was snapped by a satellite orbiting 300 miles above the surface of the United States. The damaged garden is the Everglades ecosystem. And the Clinton Administration has now organized a unique interagency effort under the leadership of

the Corps of Engineers to restore the entire South Florida watershed.

This undertaking is, without exaggerating, the most ambitious environmental restoration project in the history of civilization. It involves 11,000 square miles of a complex ecosystem, employs hundreds of full time earth scientists, reworks 1,400 miles of diversion canals, demands many years of hard work and will require hundreds of millions of dollars to complete.

Yet scale is not the real issue. At stake is whether we can use good planning and careful science to restore equilibrium between the built environment and the natural landscape, or, in this case, between 6 million people crowded into a coastal strip right up against the most unique and fragile wetland ecosystem on the planet. Can it be done? We're starting to find out.

The origins of our restoration challenge go back more than a century. At a time when nature -- especially the sharp sawgrass wilderness of the Everglades -- was still considered something to conquer, developers and their political leaders began "draining the swamps" in the name of progress. As long as capital was scarce and settlement slow this process of eating away the Everglades merely proceeded at a gradual pace, acre by acre.

But then came World War II, economic growth, and the postwar push to provide tens of thousands of new, air conditioned homes in the comfortable climate of coastal Florida. And then, in 1947,

amidst the early stages of this regional boom, came the torrential rains and back-to-back hurricanes that put most of South Florida under water. That's when the conquest of the Everglades began in earnest: Congress authorized the Central and South Florida Flood Control District and contracted the U.S. Army Corps of Engineers to take care of the problem once and for all.

Of course, Congress wasn't the only powerful client involved; the Corps had to satisfy the demands of Florida's farmers, urban residents, and the environmental movement emerging throughout the nation. All at the same time. Under pressure to act quickly, it came up with a neat solution: Like Caesar in Gaul, the Corps divided the entire Everglades ecosystem into three distinct parts.

First came the farmers. In the north, on the shores of Lake Okeechobee, my satellite photo shows a checkerboard of sugar plantations. To establish a stormproof agricultural industry, the Corps continued the old tradition: drain, drain, drain until the landscape was at last free of water. The first step was to redesign Lake Okeechobee, diverting the natural overflow of 2.5 million acre-feet of water through two artificial outlets: west through the Caloosahatchee River to the Gulf of Mexico and east through the St. Lucie River to the Atlantic. It then widened and deepened the drainage canals across the farmlands and out to the Atlantic. The resulting 430,000 acres of land, with the help of considerable agricultural subsidies, make up the lucrative Florida sugar industry.

Next, the thirsty cities. Below the sugar fields, the photograph shows a series of huge, enclosed irregular polygons, like those mysterious Inca lines in the desert. These are the water conservation areas, a million acres in extent. Essentially a flattened version of mountain storage reservoirs, the vast shallow ponds were created by enclosing the landscape with dikes. The Corps designed them to store both natural rainfall and runoff from the sugar fields, helping to recharge the urban wellfields to the east, as well as providing flood protection.

Third and, in the order of priority, last, the Corps left the amputated remnants at the bottom, and in 1947 Congress turned those 1.5 million acres into Everglades National Park. In the photo the park is marked by deep shades of green and blue merging into the brackish then salty waters of Florida Bay. The Corps had completed its work -- characterized as the largest earth moving project since the Panama Canal -- in record time, satisfying all three clients and the Congress who contracted it. Temporarily, as it turned out.

Fifty years later, even from the distance of a satellite photo, huge parts of the landscape appear sick and discolored. As far back as 1964 a writer for Audubon magazine reported on the changes in the Everglades:

> I found no Eden but rather a waterless hell under a blazing sun...Everywhere I saw Everglades drying up, the last drops of water evaporating from water holes, creeks and sloughs....The sawgrass was a brown and lifeless tinder, the sky was darkened by great pillars of smoke billowing from a rampaging,

crackling fire. (Peter Farb, "Disaster Threatens the Everglades" Audubon Magazine, Sept.-Oct. 1965 p. 302-306)

How could the nation's best engineers have overlooked the consequences of their grand plumbing scheme? Easy. At that time the dominant vision of the natural world was scenic, not ecologic. In the era of Henry Ford, America typically visuallized and managed nature as an assemblage of unrelated parts, each to be used, removed, or substituted without much regard to the others: Native trees and exotic ones were considered much the same; wetlands could be transformed into farmlands with no effect beyond the fence line; and a swamp was just acreage whether the water was six inches or six feet deep.

Today of course we know better. With the insights of modern ecological science, we have come to understand that neither the Everglades nor any other protected landscape is an island unto itself, that every part of the ecosystem is tributary to the whole; and that diversion dams, dikes and levies in the northern part of the photo have unintended consequences for the entire watershed, especially for a biological system so finely balanced as the River of Grass.

The first unintended consequence was water pollution. Drainage waters from the sugar fields, saturated with 200 tons of phosphorous and other fertilizers each year, stimulated the growth of huge cattail thickets that spread inexorably across the

entire landscape, crowding out the native sawgrass and water lily swamps.

Next, too much water gathered in the wrong places. The stacking of storage water in the conservation areas began to drown the tree islands, known as hardwood hummocks, that sustain a variety of endemic species.

Farther down, within the National Park itself, the problem was not enough water. Cut off from predictable seasonal water flows, the great flocks of birds, ibis, egrets, spoonbills, herons, began to thin out and die off as their fishing sources and breeding periods were disrupted. The population of nesting wood storks, for example, crashed from 6,000 pairs before 1947 to 200 pairs.

Even in Florida Bay, great algal blooms began to appear, and the sea grass began to die, threatening the entire food chain that supports the fisheries of South Florida.

On the other hand, one thing that has grown exponentially as a result of all the die-offs has been the most contentious litigation in the continental United States. Suit followed by countersuit has been the old-fashioned way of settling scores. So over the past three decades Florida's state and federal courts have been clogged, hearings held, accusations made, fingers pointed, attorneys well paid and in the Everglades itself... nothing accomplished.

Nothing, that is, until this Administration intervened, took money away from the courts and lawyers and plowed it back into

the world's largest subtropical wetlands ecosystem, where it can actually do some good.

The Everglades restoration plan seeks to rectify the decades of biological and legal abuse by weaving the torn pieces of fabric together into one integrated hydrologic system. As ecological writer Thomas Berry puts it, we can no longer envision the landscape "as a collection of objects rather than a communion of subjects."

Fortunately, the dynamic, evolving science of landscape restoration has already given us instructive precedents that we can apply to the Everglades. Just months ago the Bureau of Reclamation gave one dramatic, large scale illustration: It released 45,000 cubic feet of water per second from Glen Canyon Dam to mimic the natural pattern of historic spring floods. This scientifically controlled flood was carried out to restore the sand bars and beaches along the Colorado River in the Grand Canyon. It succeeded beyond our highest expectations, and brought the river's riparian habitat back toward its natural pre-dam condition.

And in Florida, just north of the Everglades, we are learning from the restoration of the Kissimmee River Valley. The Kissimmee tributaries gather on the outskirts of Orlando, then flow (and often naturally overflow) south into Lake Okeechobee. But decades ago, the Corps of Engineers destroyed the original 106 mile meanders and wetlands by dredging a straight 52-mile

channel; now they're plugging and filling it to reverse the damage and restore the timeless flow.

These precedents show a fundamental difference between the old era and the restoration era: Rather than marching blindly into the fray to carry out a rushed, cut-and paste landscape job, they're approaching this watershed with care and foresight. In both cases, the restoration efforts were preceded by comprehensive and technologically advanced hydrological and biological studies. The studies were shared freely and compared openly with all stakeholders for criticism. This scientific review process takes time, and patience, but it ultimately lays the groundwork for lasting success.

To begin the Everglades restoration, the Corps first published a $1.8 million reconnaissance study with six alternative plans, all of which have common features. The central, organizing concept of each alternative is to repair the severed hydrologic arteries by stitching together the landscape that was sliced in thirds by the 1947 project. That means some sugar cane farms in the agricultural area must be purchased and returned to their natural condition to facilitate the natural storage and flow of water southward. There, polluted runoff will be cycled through manmade treatment areas -- giant, ecological kidneys -- where cattails and other vegetation will soak up phosphorous before releasing waters into the Everglades.

Then, in the water conservation areas the plan will require us to lower and reconfigure the dikes that maintain the storage

ponds, as well as filling in some of the drainage canals that carry precious freshwater out to Atlantic tides. Our goal is to keep more water in the system and to keep it moving south, filtering through marshes, flowing through Everglades National Park and on into Florida Bay in a seasonal pattern that more closely resembles the pre-development landscape.

Restoring the historic pattern will of course benefit the white, black and red mangroves, the scarlet milkweed, pink grass and slender goldenrod that grow in the Everglades. It can only improve the health of the 400 species of birds, 60 amphibians and reptiles, and 25 mammals that live within the River of Grass. But how will it affect the health and population of one particular species that lives <u>outside</u> that garden?

On the photograph above my desk the coastal cities that stretch from West Palm Beach southward to Miami show in blotches of pink and mildew colors. The population of six million residents has doubled in the past 20 years and will triple in the next 50. But the coastal cities are separated from the Everglades by what from above appears as a thin, luminous green line. Down on the ground, I can see that this line is a long earthen flood control levee that, ironically, acts as a two-way growth barrier, also holding the sprawling coastal communities back from the quiet, timeless expanses of sawgrass, tree islands and spider lily marshes to the west.

A clear line thus splits the world into two apparently unrelated parts. Develop one, goes the conventional wisdom, save the other. A classic example: In 1858, Frederick Law Olmsted designed his seminal park with an eastern border, Fifth Avenue, allowing for a metropolis of 8 million to spring up on the other side. A century later, the Army Corps of Engineers did essentially the same thing in Florida. Instead of a street, it dug the levee, which would always function like a demilitarized zone, allowing suburbs to grow right up to the line, while keeping the two worlds eternally separate.

But the Everglades and the coastal cities, it now turns out, are really not so separate after all. The reality that draws the two together is their increasing demand for water. The marshes, mangroves and manatees needs more water on one side, but so do the hot and thirsty millions on the other. What's more, the scientists have now shown us that the water must increasingly come from a shared water system, the Biscayne Aquifer.

Most of the water consumed in Miami and the other coastal cities is pumped from shallow spongelike limestone aquifers. And the constant pumping, together with the effect of surface drainage canals, acts like a black hole, sucking groundwater down and out from the Everglades. Why pour water back into the Everglades only to watch it fall into into the vortex of urban demand? Thus the cities have a lien on the future of the Everglades. The key to that future, then, is more water used more efficiently.

Not that there isn't enough to start with. South Florida gets a generous average 60 inches of rainfall each year. For millennia, those heavy drops from the sky fell, gathered and flowed as a wide, sprawling sheet of water from present day Orlando down to Florida Bay. In their haste and myopia, our predecessors simply did too good a job in draining the swamps, funneling the miles-wide sheets into six foot wide ditches, pumping the aquifer dry. To reverse that we would have to include in our "community of subjects" the urban water needs for the coastal cities, which requires broader, more comprehensive and complex participation.

And that's exactly what we did. In 1995, Governor Lawton Chiles appointed South Florida citizens to a group called the Governor's Commission for a Sustainable South Florida, charging it to help select the best restoration plan through public commitment with statutes and citizens.

The commission, working with the South Florida Water Management District, has endorsed a new concept called "Chain of Lakes." As the name implies, the proposal is to construct a series of lakes on the urban side of the green line, in the western areas of Dade, Palm Beach, and Broward Counties. The idea, originally an engineering solution to water shortage, is that by storing water just outside the Everglades, the lakes would reduce groundwater seepage out of the Everglades, recharge

the municipal well fields, and provide a place to store floodwater and urban runoff.

In recent months, urban planners have started to visualize an even larger role for the Chain of Lakes. Properly designed, the waters could also provide a great recreational resource for boating, water skiing and the urban activities not appropriate in a national park. And the lakes, thoughtfully designed and built, could provide still more opportunities -- housing developments could be designed with density transfers and integrated with lake lines to provide waterfront access.

The restoration process is accelerating from vision toward action. In April, Congress appropriated $210 million to the Interior Department to be used, with matching funds from the state of Florida, for the acquisition of land in the agricultural area and to accelerate the purchase of lands for the Chain of Lakes. Support continues to be high among the citizens of Florida for a comprehensive plan, although debate continues on method of financing, such the obligation of the sugar industry to pay its fair share.

The final result is still decades away. That may seem like a long, long time. And yet Olmsted's park took 16 years and over $14 million (roughly $200 million today) to build. And our task is even larger in its vision. In short, we need to remember what is at stake: The Everglades watershed is not just a fragile, incomparable garden, teeming with diverse biological life and

blessed with landscapes that seem to float in time and space. It is surrounded by and inextricably supports some of the largest and fastest growing cities in America.

We have seen again and again in the past how the blistering pressures of urban and suburban growth can, if ignored or unmanaged, destroy the natural world from which they came. But by finding the balance through good biology, we have learned, and are now able, to embody the values of nature in a way that integrates and enhances both our human and natural landscapes of complexity.