



## Wolf Recovery in Yellowstone National Park

Gray wolves, effective predators on large mammals, were native to Yellowstone. They were extirpated by 1927, when national policy was to exterminate wolves on all public lands. From the 1930s until recently, lands surrounding the park were strewn with strychnine baits, cyanide coyote getters, and, until 1972, Compound 1080 stations. Loaded rifles were at hand in every stock and hunting camp. An intensive study from 1975 to 1977 and sporadic sightings (nine possible 1980-1986) suggest that no viable wolf population lives in the park.

The wolf's ecological niche in the park is vacant - a departure from the purpose stated in the park's 1973 Master Plan to perpetuate the park's natural ecosystem. Management policies for resource management in national parks are to maintain and perpetuate their natural integrity. The policies encourage reintroduction of natural species extirpated by humans, where adequate habitat exists.

The gray wolf is listed as endangered in the contiguous states except Minnesota under the Endangered Species Act of 1973 (ESA). A Northern Rocky Mountain Wolf Recovery Plan was produced by an interagency team in 1980. A revised plan was signed August 3, 1987. The plan proposes reintroduction of an experimental group of wolves into the Yellowstone area. The 1982 amendments to the ESA allow experimental populations of endangered species to be reintroduced with added management flexibility to contain the population and remove problem animals. The plan recognizes that compliance with the National Environmental Policy Act requires an environmental impact statement, with public participation, before any significant recovery action is begun.

Following a management pattern similar to one that has evolved to recover and manage the threatened grizzly bear, three management zones would be set up to facilitate wolf recovery. Management Zone I would be a unit of more than 3,000 square miles containing key all-year habitat to sustain 10 breeding pairs of wolves, with less than 20 percent of the land devoted to livestock grazing. There, the first management priority, along with perpetuation of the natural ecosystem, including other native species, would be wolf recovery. Management Zone II would be a flexible buffer area where wolves can occupy some key habitat, but where management preference would be given to livestock grazing and other land uses. Problem wolves would be controlled. Management Zone III is where wolf-human conflicts would be minimized. If wolves were to pose a problem to humans, they would be controlled. Other established uses would take priority over wolf recovery.

When Yellowstone's experimental wolf population has grown to include 10 breeding pairs, probably in 10 packs of 5-16 wolves (50 to 160 total), and those 10 pairs have lived in Yellowstone for 3 consecutive years, they can be reclassified. Delisting wolves will be contingent upon their being protected by the three states surrounding the park and managed as game animals or furbearers.

The Yellowstone recovery area proposed in the 8/3/87 Northern Rocky Mountain Wolf Recovery Plan would be set in the center of a vast tract of park and wilderness - the largest intact ecosystem in the temperate zone of the earth - 2.2 million acres in the park, 3.6 million acres of national forest wilderness, and 2.7 million acres of undeveloped wildlands - 8.5 million acres, 13,280 square miles, or 34,395 square kilometers total. It already serves as the core of a grizzly bear recovery area, and contains a natural complex of other predators: black bears, mountain lions, bobcats, and coyotes.

Wolf recovery is dependent primarily upon habitat protection and prevention of human-caused mortality, central tenets of grizzly bear recovery. Both species require the same management practices, except that taking of individual wolves is not as threatening to their recovery, because they reproduce at a higher rate than grizzly bears do. Recovery of one species is not mutually exclusive of recovery of the other.

L. David Mech, one of the nation's foremost wolf authorities, said of Yellowstone, "This is just magnificent wolf country."

In part because of the proposed Yellowstone recovery area's large size, remoteness, and integrity, there is a low likelihood that wolves will prey on the cattle and sheep that are grazed seasonally on the periphery of the recovery area.

In contrast, on Minnesota wolf range, 1,200 wolves are interspersed with 12,230 farms with 234,000 cattle and 91,000 sheep. From 1977 through 1986, the highest annual cattle losses reported there were 4.5 per 10,000, and the highest sheep losses claimed were 26.6 per 10,000. As a result, 15 to 59 wolves were trapped per year (38 average) in Minnesota wolf range, and an average of \$22,963 compensation was paid to farmers. Alberta, British Columbia, and Manitoba offer better examples of wolf-human interfaces to study in considering restoration of wolves to Yellowstone.

In Yellowstone there are tens of thousands of elk, thousands of deer and bison, hundreds of bighorn sheep, pronghorn antelope, and moose. All these species are natural prey for wolves, and will supply ample food for them. Half of the elk and nearly all the bison remain in the park all year, and are not available for hunters. Alternative prey - countless snowshoe hares, twenty species of rodents, abundant waterfowl and grouse - are also available in Yellowstone. In terms of biomass, Yellowstone's ungulates total about 8 million kilograms, or about 900 kg/sq.km, compared to 450 kg/sq. km in northern Minnesota or Algonquin Provincial Park, Ontario. At 5 kg/wolf/day, 200 wolves would eat 1,000 kg/day X 365 days = 365,000 kg/year, or 4.56 percent of the available summer biomass. Wolves normally prey mostly on the most abundant prey. In Yellowstone, that is elk.

The absence of a viable wolf population is the single greatest departure from the objective of maintaining a natural ecosystem in Yellowstone. Indeed, wolves are the only one of five threatened or endangered species in the park for which there is no recovery program. The presence of wolves would provide a needed empirical test of their effects on their several species of prey, as well as insight into the interrelationships among wolves and other predators in the park. Restoration of wolves would also provide a test of the relationship of natural levels of food resources and social regulation of wolf numbers. It could "rewrite the book" on that topic. Detailed studies, then, must accompany restoration of wolves.

From studies elsewhere, it seems likely that wolf kills will offer a more stable spring, summer, and fall source of protein essential to grizzly bears in Yellowstone.

Large game animal declines attributed to wolves in Alaska, Alberta, and British Columbia are normally linked to other contributing factors such as overhunting by humans, habitat deterioration or destruction, exclusion of wildfires, and exceptionally harsh winters. In Minnesota, where forage is adequate, hunters kill twice as many deer as wolves do. Human hunting and wolf predation can both be accommodated in the greater Yellowstone area.

In the 8/3/87 recovery plan concerns of nearby residents and commercial interests are considered very carefully, with proposals to promote public understanding, means to protect the interests of hunters, outfitters, and commodity interests, to control depredating wolves, or those that may become problems, and to compensate ranchers for stock lost to wolves.

Natural factors tend to limit wolf numbers. (1) Wolf packs are territorial, and kill intruding wolves, (2) wolf pack territories are stable for decades, and (3) pack size varies with food availability, acting to: (a) inhibit breeding of adult females, (b) keep numbers of pups per litter low, (c) skew pup sex ratio to males, (d) lower pup survival, and (e) disperse pack members, who become vulnerable to being killed (Around Riding Mountain National Park, Manitoba, many are trapped). Wolves die, often as pups, from canine distemper, bovine tuberculosis, and infectious canine hepatitis, compounded by crowding, malnutrition, and parasites. More than half of wolf deaths at Riding Mountain National Park are from human harvest around the park.

Although grizzly bears, black bears, mountain lions, and coyotes have all demonstrated that they will attack human beings, there are no authenticated cases of healthy wild wolves attacking modern people in North America. Wolves are shy and avoid people. Isle Royale National Park, Michigan, Algonquin Provincial Park, Ontario, Riding Mountain National Park, Manitoba, and the Boundary Waters Canoe Area on the Superior National Forest are used by thousands of campers, hikers, and canoeists annually, yet wolves are rarely seen by recreational visitors.

Wolf recovery in Yellowstone need not interfere substantially with public use of the park, or preclude legal use of wilderness for recreation or multiple uses such as grazing, timber harvest, oil and gas extraction, big

game hunting, or animal damage control programs. Adjustments have already been made in those activities to accommodate grizzly bear recovery.

Temporary constraints on public use of small areas may be needed mainly to prevent wolf mothers from having to move their pups from one den site to another during mid-April through mid-June, and to provide secure rendezvous sites for wolf families from mid-June through September. These temporary measures would be similar to existing grizzly bear management areas that protect essential feeding, resting, and breeding sites.

Recovery of wolves is fully compatible with recovery of grizzly bears in an ecosystem managed to maintain its natural integrity and processes.

Overwhelming support for wolf recovery in Yellowstone was shown in 1985 by a random survey of park visitors (McNaught, University of Montana). Yellowstone National Park funded, through the University of Wyoming, a random survey of attitudes of Wyoming citizens toward wolf reintroduction. Preliminary results show very strong support among members of two Wyoming conservation organizations, three to two support by Wyoming citizens at large, and three to two opposition among residents in counties next to the park. Stockgrowers, who fear that they might be impacted economically by the presence of wolves in Yellowstone, oppose wolf recovery fourteen to one. A synopsis of public attitudes relevant to wolf restoration in Yellowstone is available from the superintendent, P.O. Box 168, Yellowstone National Park, Wyoming 82190.

Support for wolf recovery is widespread in the American conservation community. An 85 percent majority of the reviewers of the wolf recovery plan supported and favored it.

September 30, 1987, in the U. S. House of Representatives, Mr. Owens of Utah introduced a bill, H.R.3378, to require the National Park Service to reintroduce wolves into Yellowstone National Park. The bill was referred to the Committee on Interior and Insular Affairs. Section 1 says:

"The Secretary of the Interior, acting through the Director of the National Park Service, shall take such steps as may be necessary to reintroduce wolves into Yellowstone National Park. The project to carry out such reintroduction shall be commenced as expeditiously as practicable and shall be completed within 3 years after the date of enactment of this Act."

For further information:

Copies of the 128-page Northern Rocky Mountain Wolf Recovery Plan can be ordered by sending a check or money order for \$14.30 payable to Fish and Wildlife Reference Service to them at 6011 Executive Boulevard, Rockville, Maryland 20852. Ask for the plan by name or order publication number 80-8780330. Shipping is included in the price given.

A 31-page publication that responds to many questions about the recovery plan is Wolf Recovery in the Northern Rocky Mountains available by mail for \$4.00 postpaid from National Audubon Society, 801 Pennsylvania Avenue SE, Washington, DC 20003.

A classic book on wolves and a children's wolf book are available from The Yellowstone Association, P.O. Box 117, Yellowstone National Park, WY 82190. They are Barry Holstun Lopez's Of Wolves and Men, 309 pages, paper, @ \$14.95 plus \$3.75 postage and handling, total \$18.70, and Wolves ZooBooks, 19 pages in color @ \$1.95 plus \$1.50 postage and handling, total \$3.45. VISA or MasterCard are accepted on phone orders. Call (307) 344-7381 Extension 2349. The Yellowstone Association offers a wolf print, and many other publications on Yellowstone National Park.

The Yellowstone Institute, P.O. Box 117, Yellowstone National Park, WY 82190 will offer two courses on wolves in 1988, Wolves of Yellowstone July 16-17, and Wolves of the Mind July 18.

Teachers' Materials, 150 pages, are also available. Send \$13.45 with your school tax number, and request Wolves and Humans Teachers Packet from The Science Museum of Minnesota, 30 East Tenth Street, St. Paul, MN 55101.

Environmental education activities to teach wolf concepts for many grade levels are being developed by Special Projects in the Division of Interpretation, P.O. Box 168, Yellowstone National Park, WY 82190. The activities may be published as early as the 1988-89 school year.

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"How does the National Park Service feel about the proposal to restore wolves to Yellowstone?"

National Park Service Director William Penn Mott supports the idea wholeheartedly. "My personal feeling is that it would be desirable to introduce wolves to Yellowstone, but I also understand the feelings of ranchers would also have to be considered," he said. He has initiated a nationwide educational effort to inform the public about the ecology of wolves. He wants to win greater public support for wolves. "Wolves are symbolic of the wildness of this country and it would be quite proper for people to hear wolves in Yellowstone," he said in August 1987.

Yellowstone National Park Superintendent Robert D. Barbee voiced his opinion in February. "Our position is clear. We'd love to see wolves in Yellowstone. Biologically, the time has never been better to experiment with putting the wolf back in here. The prey base has never been higher. The Park Service position is it's a magnificent creature that should be here."

Every National Park Service manager recognizes the need to draft an environmental impact statement, in accordance with the National Environmental Policy Act (NEPA), on any action plan to restore wolves to Yellowstone. The NEPA process provides a forum for rational discussion of the potential effects of restoring wolves to Yellowstone.

See Page 4 of the Summer 1988 Yellowstone Today for more comments on wolf recovery. Copies of the 5-page paper, "Wolf recovery in Yellowstone National Park," are available at park visitor centers. An exhibit of wolf art will be on display at Grant Village Visitor Center this summer.

If you or park visitors you contact want to dig deeply into the complex biological and sociopolitical aspects of wolf recovery, feel free to call Norm Bishop at Extension 2200. Norm has a 30-minute wolf slide program he can give to groups in the park or in neighboring communities. 5/20/88