

To date, our assumptions have been shown to be correct, as wolf depredation on livestock and subsequent agency control actions have remained at low levels, while the wolf population has expanded its distribution and numbers and is approaching recovery goals. Using this experience, we developed special regulations for the experimental population areas that would also promote wolf recovery while reducing wolf conflicts with livestock. Thus, we have incorporated important aspects of the interim control plan and the experimental population rules in the new 4(d) regulation that replaces the interim control plan.

In the areas that were covered by the interim wolf control plan and experimental population rules, control measures were continued until livestock depredations cease, even if all wolves in an area or a pack eventually had to be removed. When five or fewer breeding pairs are in a recovery area, wolves were relocated on their first offense. When at least six breeding pairs are present, wolves were killed after their first offense. Wolves that repeatedly depredated on livestock were killed.

In experimental areas, the more flexible special regulations allow landowners on private land and livestock producers on public land to harass wolves at any time. In the experimental areas, wolves attacking livestock on private land can be shot by landowners with a permit, and, after six breeding pairs are established, our permit can allow permittees to shoot wolves attacking livestock on public land. Special permits can be issued in areas of chronic livestock-wolf conflict that allow qualifying landowners and their adjacent neighbors to shoot a wolf on sight. In addition, other special permits can be issued to take wolves and approved State management plans can liberalize the conditions under which wolves may be taken. A private program has compensated ranchers full market value for confirmed and one-half market value for probable wolf-kills of livestock and livestock guard animals (Defenders of Wildlife 2002, Fischer 1989).

In northwestern Montana, and while wolves were listed as endangered, wolf control under a section 10(a)(1)(A) permit was conducted only when livestock were attacked. In the experimental areas, wolf control could also occur when other domestic animals, such as dogs, are attacked on private land more than once in a calendar year. Control in both of these situations consisted of the minimum actions believed necessary to reduce further depredations. The spectrum of

control measures used included intensive monitoring of the wolves and livestock (including providing a telemetry receiver to the affected rancher), aversive conditioning (*i.e.*, capturing, radio-collaring, and releasing wolves on site or harassing wolves with noise-makers such as cracker shells), relocating or killing some wolves, or some combination of these approaches.

In northwestern Montana, agency wolf control removed 53 wolves from 1987 through 2002. Control actions removed an average of 6 percent of the population annually, with a range of 0 to 29 percent. In only 3 of those 15 years (1987: 29 percent, 1997: 20 percent, and 1999: 12 percent) did agency control actions remove more than 10 percent of the estimated wolf population in that area (Service *et al.* 2002). At no time did agency wolf control remove more than one-third of the wolf population annually, the human-caused mortality level that must be exceeded to prevent wolf population growth. The percentage of removal by agency control in northwestern Montana has been higher than in either the Idaho or Yellowstone areas, because northwestern Montana does not have similar large areas of refugia (millions of acres of contiguous public lands with year-round resident big game populations). This results in an overall lower wolf habitat and social carrying capacity and a higher level of conflicts than in either the Idaho or Yellowstone areas. We expect that under threatened status and the accompanying 4(d) rule, which replaces the interim wolf depredation control plan, the level of wolf mortality caused by agency and public control will be similar to that occurring (less than 10 percent annually) under the experimental population regulations in central Idaho and the Greater Yellowstone Area.

The control of problem wolves depredating livestock resulted in the removal of less than 5 percent of the wolf population in the northern Rocky Mountains from 1987 through 2002 (Service *et al.* 2002). During that period, a total of 148 wolves were killed by agency control because of chronic livestock depredation. Only in 1987 did wolf control remove more than 9 percent of the wolf population. Only 3 of the 150 wolves that have been removed were legally killed by landowners who saw them attacking their livestock on private land; the rest were removed by agency actions. Three wolves were also killed under permits to shoot wolves attacking livestock on public grazing allotments or under the permits that allow landowners to shoot a wolf on sight in areas of chronic wolf-

livestock conflict. Human-caused mortality below 10 percent annually has not been shown to prevent a wolf population from growing. The EIS on wolf reintroduction predicated that about 10 percent of the wolf population would be removed by agency control actions annually. To date, agency control has been about half of the expected level, but that percentage may increase as the wolf population expands into areas where conflicts with domestic livestock are more likely.

At the end of 2002, nearly all of the most suitable wolf habitat in the northern Rocky Mountains of Montana, Idaho, and Wyoming was occupied by resident wolf packs. As the wolf population continues to expand, wolves will increasingly attempt to settle in areas intensively used for livestock production, a higher percentage of those wolves likely will become involved in conflicts with livestock, and a higher percentage will need to be removed. For the wolf population to become stabilized, human-caused mortality would have to remove 30 percent or more of the wolf population annually.

This final rule replaces the interim wolf control plan with the wolf control actions specified in the 4(d) rule for the Western DPS. While wolf control actions will continue to remove wolves that attack livestock in the Western DPS, we still expect that wolf population recovery was achieved by the end of 2002. Management of wolves under the management regulations finalized in this rule (see the *Special Regulations under Section 4(d) for Threatened Species* section below) is not expected to significantly increase wolf mortality rates, because relatively few wolves attack livestock.

The only significant difference in the management of problem wolves between the previous management under the interim control plan and the new management of wolves under the 4(d) rule once they have been reclassified from endangered to threatened outside the experimental population areas will be the taking of wolves in the act of attacking livestock or domestic animals on private land by private landowners. In the past 6 years in Idaho and Wyoming, only 3 nonessential experimental wolves have been legally taken under such circumstances by landowners, and we believe the level of take of nonexperimental threatened wolves under the new regulations will be similar. That level of take could not significantly increase wolf mortality rates or decrease the rate of wolf population recovery. Through the end of 2002, 15 lambs (in Utah), but no other