

and/or low birth rates and to trigger timely corrective action when necessary. Michigan and Wisconsin DNRs are currently monitoring their wolf populations in this manner, and this level of monitoring will continue following this reclassification. The goals of all three State wolf management plans are to maintain a within-State wolf population that is well above the 200 animals identified in the Federal Eastern Recovery Plan as needed for viable isolated wolf populations.

In Wisconsin, human-caused mortalities accounted for 58 percent of the diagnosed mortalities on radio-collared wolves from October 1979 through June 1998. One-third of all the diagnosed mortalities, and 55 percent of the human-caused mortalities, were from shooting. Another 12 percent of all the diagnosed mortalities resulted from vehicle collisions. Vehicle collisions have increased as a percentage of radio-collared wolf mortalities. During the October 1979 through June 1995 period, only 1 of 27 known mortalities was from that cause; but from July 1995 through June 1998, 5 of the 26 known mortalities resulted from vehicle collisions (WI DNR 1999a, Wydeven 1998); and from April 2000 through March 2001, 10 of 23 known mortalities were from that cause (Wydeven *et al.* 2000b, 2001a). Only 2 of those 23 mortalities were from shootings, but an additional 4 Wisconsin wolves were shot during the State's 2001 deer hunting season (WI DNR 2001).

In the Upper Peninsula of Michigan, human-caused mortalities accounted for 75 percent of the diagnosed mortalities, based upon 34 wolves recovered from 1960 to 1997. Twenty-eight percent of all the diagnosed mortalities and 38 percent of the human-caused mortalities were from shooting. In the Upper Peninsula during that period, about one-third of all the known mortalities were from vehicle collisions (MI DNR 1997). During the 1998 Michigan deer hunting season, 3 radio-collared wolves were shot and killed, resulting in one arrest and conviction (Hammill *in litt.* 1999, Michigan DNR 1999b). During the subsequent 3 years, 8 additional wolves were killed in Michigan by gunshot, and the cut-off radio-collar from a ninth animal was located, but the animal was never found. These incidents resulted in 6 guilty pleas, with 3 cases remaining open. Data from that 1999–2001 period show that human-caused mortalities still account for the vast majority of the diagnosed mortalities (79 percent) in Michigan. However, deaths from vehicular collisions now greatly outnumber shootings. Twenty-seven percent of the diagnosed mortalities

were from shootings (35 percent of the human-caused mortalities), while 48 percent of the diagnosed Michigan mortalities were from vehicular collisions (Hammill *in litt.* 2002). When viewing these figures it is important to remember that there is a much greater likelihood of finding a vehicle-killed wolf than there is of finding a wolf that has been illegally shot, unless the animal was being radio-tracked.

A continuing increase in wolf mortalities from vehicle collisions, both in actual numbers and as a percent of total diagnosed mortalities, is expected as wolves continue their colonization of areas with more human developments and a denser network of roads and vehicle traffic.

A significant portion of the intentional illegal mortalities may arise as a protest against the Federal government or from frustration arising from a perception of inadequate Federal or State depredation control programs or inadequate State compensation for depredated livestock and dogs. The application of this final rule in the Midwest—reclassifying Wisconsin and Michigan wolves to threatened and implementing a special regulation for lethal depredation control, with no change in the nearly identical protection currently provided to threatened Minnesota wolves—is expected to have both positive and negative impacts on illegal wolf mortality.

In Wisconsin and Michigan, the rapidly expanding wolf population is beginning to cause more depredation problems. For example, from 1991 through 1996 only 1 Wisconsin wolf was captured for depredation control. In 1997, 2 wolves were trapped and moved to eliminate depredation problems. In 1998, 4 wolves had to be captured as a result of verified depredation problems, and 8 were trapped (7 moved) in the first 9 months of 2001 (Wydeven *et al.* 2001b) in response to verified depredation incidents. Data from Michigan show a similar, but smaller, increase in confirmed wolf depredations on calves, cows, sheep, and dogs: 2 in 1996, 3 in 1998, 4 in 1999, 3 in 2000, and 6 in 2001 (Hammill *in litt.* 2002).

For Wisconsin and Michigan, the new special management regulations under section 4(d) of the Act provide increased flexibility and efficiency in dealing with these problem wolves (see the *Special Regulations Under Section 4(d) for Threatened Species* section below). This may result in greater public satisfaction with the States' abilities to promptly and effectively deal with depredation incidents, and may reduce the perception that wolves are out of control. Thus, the regulations may

counter the viewpoint that vigilante action is needed to reduce their numbers. Such vigilante action is likely to result in the death of nondepredating wolves, and may impede recovery progress, at least locally.

Wolves were largely eliminated from the Dakotas in the 1920s and 1930s and were rarely reported from the mid-1940s through the late 1970s. Ten wolves were killed in these two States from 1981 to 1992; 5 of the mortalities were in 1991 and 1992 (Licht and Fritts 1994). Two more were killed in North Dakota since 1992, and in Harding County in extreme northwestern South Dakota, a wolf was killed in 2001. There have been other recent reported sightings of gray wolves, including a confirmed sighting by USDA/APHIS-Wildlife Services personnel in 1996 near Gary, South Dakota, (near the Minnesota border), and a 1994 confirmation of a den with pups in extreme north-central North Dakota near the Canadian border. Several other unconfirmed sightings have been reported from extreme northeastern and southeastern South Dakota. Wolves killed in North and South Dakota are most often shot by hunters after being mistaken for coyotes, or else they are killed by vehicles. The 2001 mortality in South Dakota was caused by an M-44 "coyote getter" device that had been properly set in response to complaints about coyotes. Genetic analysis of the Harding County mortality showed it to be a wolf from the Minnesota-Wisconsin-Michigan area (Straughan and Fain 2002).

Additional discussion of past and future wolf mortalities in the Eastern DPS arising from depredation control actions is found under the *Summary of Factors Affecting the Species* section, factor D, *The inadequacy of existing regulatory mechanisms*.

Despite human-caused mortalities of wolves in Minnesota, Wisconsin, and Michigan, it is clear that these wolf populations have continued to increase in both numbers and range. Under these new regulations, as long as other mortality factors do not increase significantly, and the wolf populations receive adequate and timely monitoring to document (and counteract, if necessary) the effects of excessive human-caused mortality, we believe the Minnesota and Wisconsin-Michigan wolf populations will not decline to nonviable levels, nor will recovery slow, in the foreseeable future resulting from human-caused killing or other forms of predation.

*Western DPS.* Since wolves have been monitored in Montana, Idaho, and Wyoming, only two wolves been confirmed to have been killed by