

Unfortunately, an accurate estimate of the amount of lynx habitat across all land ownerships in the Great Lakes is still not available.

A large amount of the boreal forest in northeastern Minnesota where lynx are found is managed as the Boundary Waters Canoe Area Wilderness (4,160 km² (1,600 mi²)) (Superior National Forest website). Wilderness is managed to let natural ecological processes dominate, which is beneficial to lynx.

The final rule recognized that timber harvest is the predominant use of the forests where lynx habitat occurs in the Great Lakes region; the final rule also explained that timber harvest levels on National Forest lands in the Great Lakes have declined by approximately 20 percent over the past decade (R. Gay, U.S. Forest Service, in litt. 1999). As described in the final rule, mixed conifer/hardwood stands are often replaced and maintained in pure deciduous stands because of the importance of aspen as a crop tree (Agee 2000). On managed timber lands in all ownerships, the maintenance of aspen to produce pulpwood precludes the establishment of coniferous forest types, which in turn likely diminishes snowshoe hare habitat quality.

The final rule described natural fire regimes and the history of fire suppression in the Great Lakes. Fire suppression policies across all land ownerships in the Great Lakes are such that fire is unlikely to assume its natural role in creating a mosaic of vegetation communities and age classes across the landscape. However, the final rule established that on some Federal lands in northeastern Minnesota, where the region's highest quality and quantity of lynx habitat is found, and where numerous lynx have been documented in the past 3 years (Minnesota Department of Natural Resources in litt. 2003), fires are allowed to burn. The LCAS recommends that on Federal lands fire be restored as an ecological process. Locally, fire suppression may reduce the quality of lynx habitat in the Great Lakes.

Since the listing of the lynx in 2000, activities that may affect lynx on National Forest lands are addressed by the U.S. Forest Service's adherence to the LCAS in alleviating the impacts of actions on lynx (see Factor D). However, at this time, most Federal land management plans have not been amended or revised to provide long-term conservation of lynx.

We conclude that timber harvest and fire suppression on non-Federal lands may cause local impacts to lynx and snowshoe hare habitat in the Great Lakes Region. Since the lynx was listed,

lynx habitat on National Forest lands is managed to conserve lynx. As a result, we conclude the threat to lynx in the Great Lakes because of timber harvest and fire suppression is low.

Factor B. Overutilization for Commercial, Recreational, Scientific, or Education Purposes

The final rule explained that one of the primary reasons we proposed to list lynx, based on available information at the time, was our conclusion that the low numbers of lynx in the contiguous United States and southern Canada were the residual effects of over-trapping believed to have occurred in the 1970s and 1980s, in response to unprecedented high pelt prices, a concern that was widely shared (Brand and Keith 1979; Todd 1985; Bailey *et al.* 1986; Hatler 1988; Washington Department of Wildlife 1993).

The final rule explained the variables that influence trapping records and the use of such records as indicators of historic lynx population changes. The final rule recognized that trapping mortality can either compensate for natural mortality or be in addition to natural mortality, depending on when it occurs in the population cycle. The final rule described trends in lynx pelt prices, and we will not restate them here.

The final rule explained that based on information obtained after public review and comment of the proposed rule in 1998, we now recognize that the cyclic peak harvest returns of the early 1960s and 1970s were unprecedented highs for the 20th century (McKelvey *et al.* 2000b; Mowat *et al.* 2000). Wildlife managers may have expected harvest returns during the 1980s and 1990s to be comparable to the anomalous cyclic peaks of the 1960s and 1970s. When harvest returns failed to be as high as anticipated, managers interpreted the lower returns to be caused by overtrapping when pelt prices were high (Bailey *et al.* 1986; Hatler 1988; Hash 1990; Washington Department of Wildlife 1993). We compared the lynx harvest returns in the 1980s and early 1990s to harvest data dating back over a longer period of time (*i.e.*, prior to 1960) and found that lynx harvest returns were not unusual nor appreciably lower than those recorded prior to the 1960s.

To demonstrate that lynx harvest returns in the 1980s and 1990s were not substantially different from returns prior to the 1960s and that wildlife managers were inappropriately using returns from the 1960s and 1970s as the standard on which to compare subsequent returns and set seasons, the final rule thoroughly described historic trapping

data for Minnesota, Montana, and Washington, which will not be restated here.

The final rule explained that Mowat *et al.* (2000) suspected that over-trapping may deplete local lynx populations, particularly at the southern part of the lynx's North American range, but that dispersal of lynx from healthy populations has led to the repopulation of such areas. States and Tribes closed lynx trapping seasons prior to the listing of the lynx, which, in addition to the listing of lynx under the Act, eliminated the mortality of lynx through legal lynx-targeted trapping and we have no information suggesting that illegal lynx-targeted trapping occurs in the contiguous United States. We continue to believe that precautions taken by States and Provinces to restrict lynx trapping since the 1980s likely have prevented and continue to prevent the over-harvest of resident lynx. Most Canadian provinces control for potential over-trapping by closing the lynx trapping seasons during the lows in the lynx population cycle (*e.g.*, Environment et faune Quebec 1995). However, some theorize that lynx harvest in Canada reduces the numbers of lynx that could potentially disperse to the contiguous United States. In the final rule we explained that low numbers of lynx in the contiguous United States compared to Canada occur not as a result of over-trapping, but because the prey of lynx is limited by naturally fragmented habitat, topography, and climate.

As we emphasized in the final rule, legal trapping, snaring, and hunting for bobcat, coyote, wolverine, and other furbearers create a potential for incidental capture or shooting of lynx. We know that incidental capture and shooting occurs (Wydeven 1998; M. DonCarlos in litt. 1994; Colorado Department of Wildlife 2003; R. Naney, U.S. Forest Service, pers. comm. 1999, B. Giddings, Montana Fish, Wildlife and Parks, pers. comm. 2001; C. McLaughlin, Maine Department of Inland Fisheries and Wildlife, pers. comm. 2001; J. Cochrane, U.S. Fish and Wildlife Service, pers. comm. 2003; M. McCollough pers. comm. 2003); no reliable recordkeeping exists to determine how frequently such taking occurs. The effect on the individual lynx captured has varied, usually depending on the type of trap or the set and whether the trap was checked in time to successfully release or rehabilitate the animal. These captures have sometimes caused no injuries and the animal was immediately released back into the wild, sometimes lynx were injured but were rehabilitated and then