

The U.S. Department of the Interior has investigated the deaths of more than 4,300 bald and golden eagles (*Haliaeetus leucocephalus* and *Aquila chrysaetos*) since the early 1960's as part of an ongoing effort to monitor causes of wildlife mortality. The availability of dead eagles for study depends on finding carcasses in fair to good condition and transporting them to the laboratory. Such opportunistic collection and the fact that recent technological advances have enhanced our diagnostic capabilities, particularly for certain toxins, mean that results reported here do not necessarily reflect actual proportional causes of death for all eagles in the United States throughout the 30-year period. This type of sampling does, however, identify major or frequent causes of death.

Most diagnosed deaths of eagles in our

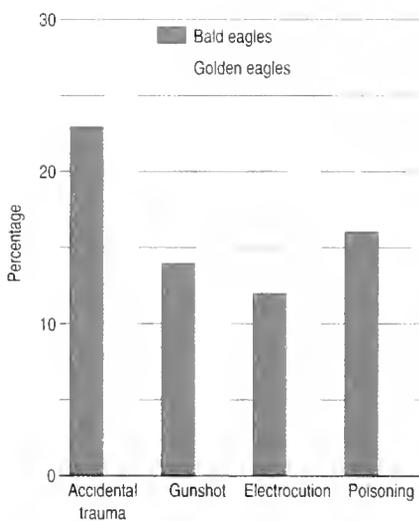


Fig. 1. Causes of mortality of bald and golden eagles over the past 30 years.

Causes of Eagle Deaths

by
 J. Christian Franson
 Lou Sileo
 Nancy J. Thomas
 National Biological Service

study resulted from accidental trauma, gunshot, electrocution, and poisoning (Fig. 1). Accidental trauma, such as impacts with vehicles, power lines, or other structures, was the most frequent cause of death in both eagle species (23% of bald and 27% of golden). Gunshot killed about 15% of each species. Electrocution was twice as frequent in golden (25%) than in bald eagles (12%), probably because of the preference of golden eagles for prairie habitats and their use of utility poles as perches.

Lead poisoning was diagnosed in 338 eagles from 34 states (Fig. 2). Eagles become poisoned by lead after consuming lead shot and, occasionally, bullet fragments present in food items. Agricultural pesticides accounted for most remaining poisonings; organophosphorus and carbamate compounds killed 139 eagles in 25 states (Fig. 3). Eagles are exposed to these chemicals in a variety of ways, often by consuming other animals that died of direct poisoning or from baits placed to deliberately kill wildlife.

Overall, poisonings were more frequent in bald eagles (16%) than golden eagles (6%). The reasons for this are unclear, but



Courtesy N. Runnigen

Necropsy examination of a bald eagle at the National Wildlife Health Center, Madison, Wisconsin.

may be related to factors that influence submission of carcasses for examination or differences in species' preferences for agricultural, rangeland, and wetland habitats.

For further information:

J. Christian Franson
 National Biological Service
 National Wildlife Health Center
 6006 Schroeder Rd.
 Madison, WI 53711



Fig. 2. Nationwide distribution of lead-poisoned eagles.



Fig. 3. Nationwide distribution of eagle poisonings caused by organophosphorus and carbamate pesticides.