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Current Issues concerning the Management of Golden Eagles in Western U.S.A.

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Abstract: This paper presents an overview of the problems facing Golden Eagles during the 1980s in the western United States. Electrocution, illegal shooting, and poisoning continue to be the major causes of eagle mortality. Continuing cooperative efforts between government and industry appear to be lessening the impact of the electrocution problem in many areas. Conservation education and law enforcement activities are credited with reducing mortality from shooting and poisoning. Increased demand for eagle feathers and other parts by American Indians has posed new problems for law enforcement officials. The most serious problem facing eagles today is the reduction of nesting and hunting habitats associated with an expanding human population. Accelerated development of western energy reserves has caused many conflicts with raptors, but most of these have been resolved through successful mitigation efforts.

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A recent survey on the attitudes of the American public toward wildlife showed that raptors, and specifically Golden (Aquila chrysaetos) and Bald (Haliaeetus leucocephalus) Eagles, are among the most popular wildlife species (Kellert 1979). In recognition of this fact and an awareness that conflicts between man and eagles seem to be increasing in recent years, the Fish and Wildlife Service (FWS) has designated the Golden Eagle as a "species of special interest". Other resource agencies, both State and Federal, also provide special mangement consideration for eagles.

Although current Golden Eagle populations appear to be large and viable, the future status of this species can only be assured through management that recognizes and addresses conflicts and provides for specific needs of eagles. Threats to the future well-being of the Golden Eagle take many forms. In this paper, I will attempt to outline some of the major management issues or conflicts facing eagles today.

From my perspective, the only way to permanently reduce Golden Eagle numbers in the western U.S. is to reduce their habitat and food suply. Two major land-use activities have produced this effect. The first is urbanization of rural areas. This has happened in many parts of the West such as southern California and along the Rocky Mountain Front in the Denver-Colorado Springs area. Eyries that were historically used by eagles are now abandoned because of encroachment by a dense human population and all of the other factors associated with man's activities (Boeker 1974).

Habitat losses in other parts of the West are more subtle, yet the end result is the same. These losses have not been as massive, but perhaps can best be described as a gradual "chipping away" at available habitats. It is most common in the inter-mountain West, where the human population has increased in the past 25 years with a growth in energy development activities. An example of this is south-west Wyoming where the human population has grown dramatically in the past 10 years. Even sparsely settled states like Wyoming have become victims of "urbanization" and the end result has been permanent habitat destruction.

The second major cause of raptor habitat loss is the conversion of rangelands to agricultural land. Each year thousands of acres of sagebrush are ploughed up and converted into wheatfields. When this is done over large blocks of habitat, the result is a biological desert for all forms of wildlife, including eagles and other raptors. Even though nesting habitat may not be lost, the reduction in prey habitat is so significant that raptors can no longer survive in these areas. Unfortunately, habitat losses from urbanization and agricultural development do not receive much environmental scrutiny as most of this activity occurs on private land.

Other land use practices, such as timber harvest and grazing, can have adverse impacts on raptors if significant nesting habitats are altered or destroyed. Wild fires that convert large sagebrush habitats to monotypic grasslands can result in localized reductions of raptor populations.

DIRECT CAUSES OF MORTALITY

The more obvious conflicts between eagles and man are those which involve direct mortality which is observable. Most of the reported eagle deaths result directly from man's activities. However, the methods used in assessing the mortality that does occur are biased in both assessment of cause of death and the age and sexes most affected by any particular factor.

Eagles, like all other wild animals, succumb to a variety of natural mortality factors including disease, parasites, starvation and old age. Little is known about the magnitude of natural mortality. Undoubtedly it is high, and it most likely varies from area to area and from year to year. I believe a reasonable estimate of the western Golden Eagle population is 17,000-20,000 breeding pairs which in an average year produces 14,000-16,000 young into the population. If the Golden Eagle population is to remain stable, approximately 14,000-16,000 birds die each year from a variety of causes. There is no systematic search for dead eagles, but for those that are processed by the FWS National Health Lab, an attempt is made to record the cause of death. The number of eagles handled by FWS's Law Enforcement personnel since 1977 has fluctuated from a low of 77 birds to a high of 345 in 1985. The number of eagles handled each year likely reflects a change in effort by law enforcement personnel in collecting dead eagles.

Electrocution

During the 1970s, it became apparent that the electrocution of eagles and other large raptors was occurring with regularitiy along many powerlines in the West. A number of raptor biologists documented the significance of the problem and the details on circumstances involved. Olendorff et al. (1981) reported that from 70-90% of all raptor mortalities reported along electric power distribution lines were eagles. Eagle mortality records and interviews with raptor biologists suggest that the magnitude of electrocution has dropped significantly in recent years - from 109 birds in 1980 to only 15 in

1984. I believe this drop in mortality is a direct result of cooperative efforts between government, the power industry, and conservation organizations.

Shooting

Prior to the amendment to the Bald Eagle Act in 1962, Golden Eagles were shot in relatively large numbers throughout the West. Few historical data are available, but nearly 5,000 were reportedly shot by hunting clubs in west Texas alone from 1941-47 (Buechner 1950). Shooting mortality may be responsible for the relatively low numbers of breeding Golden Eagles in parts of New Mexico and Texas today. Since 1971, when large-scale shooting of eagles was documented in Wyoming and Colorado, there have been only a few cases where numbers of eagles have been shot. These incidents occurred in 1974 in Texas and in 1982 in South Dakota. Available evidence today suggests that shooting is not a major cause of eagle mortality. This can be attributed to rigorous law enforcement and the general conservation education effort that has resulted in less shooting mortality for all raptor species in the past 15 years.

Trapping

Eagles and other raptors can be captured in leg-hold traps. An unknown number are trapped each year in traps placed by fur trappers. This problem results primarily from trapping sets that use exposed or sight baits. The number of eagles trapped each year increased in the late 1970s when Bobcat (Lynx rufus) fur prices rose dramatically. The most common set for Bobcats was using a jackrabbit (Lepus spp.) or bird wing for bait. Several states have recently enacted regulations which restrict or prohibit the use of sight baits.

Many of the birds inadvertently captured in traps are released unharmed by knowledgeable trappers. However, birds which receive leg damage and do not receive professional treatment quickly succumb to infection, exhaustion, starvation or accidental death. Twelve of 372 (3%) Golden Eagles whose cause of death could be determined (birds obtained from 1977-81 and examined by the FWS National Health Lab., pers. comm.) succumbed to wounds from leg-hold traps.

Poisoning

Eagles, like mammalian predators that feed on carrion, are susceptible to poisoning if they ingest a lethal dose. However, available evidence indicates that poisoning is not considered a major cause of Golden Eagle mortality today. There are several reasons for this. Since the executive order prohibiting the use of toxicants on Federal Lands in 1972, there has been little use of poisons in Animal Damage Control Programs. Cyanide used in M-44's capsules is the only toxicant currently used by the Federal predator control activities.

In the past 15 years there have been several incidents throughout the West which resulted in the death by poisoning of eagles. The most notable of these was the Jackson Canyon, WY, incident involving thallium-laced antelope (Antilocapra americana) which killed at least 25 Golden and Bald Eagles. The national publicity on the plight of eagles and subsequent legal prosecutions resulting form this incident did much for the cause of eagle protection in the U.S.

Road Kills

Several eagles are killed each year along major highways. This is generally associated with shortage of natural prey and occurs in areas where eagles

are feeding heavily on road-kills. During the 1984-85 winter, nearly 100 Golden Eagles were killed on highways near Rock Springs in south-west Wyoming.

CONFLICTS WITH ENERGY DEVELOPMENT

With the accelerated development of energy reserves in the West during the 1970s, it became apparent that there was substantial conflict with nesting Golden Eagles. In particular, the Bald Eagle Protection Act, as originally amended, prevented the "taking" of any Golden Eagle or its nest which interfered with resource development activities, with "taking" being defined to include "collect, molest or disturb". In 1978, in recognition of potential conflicts with the Act resulting from otherwise legitimate and appropriate activity, the Act was amended to authorize the Secretary of Interior to establish regulations to allow and regulate the "taking" of Golden Eagle nests on resource development sites. These regulations have been developed and currently allow the limited "taking" of certain nests, but do not allow disturbance of eggs, young or adults. Any nest removals only involve nests not currently occupied or under construction, and then only if such action is compatible with the preservation of the species.

Since 1978 there have been several studies to evaluate the effects of removing and relocating nests (Postovit et al. 1982, Phillips and Beske 1984). Most of these efforts have been successful. To date, nests have been removed and relocated to areas where they do not conflict with coal surface mining operations in Wyoming. Similar experiments have been done with other raptor species and these have met with limited success.

CONFLICTS WITH ANIMAL HUSBANDRY

Perhaps the most controversial aspect of Golden Eagle management is the species' propensity to kill young domestic sheep and goats under certain conditions. The true impact of eagles on the livestock industry is difficult to evaluate. Not only are various climatological and edaphic factors involved, but also the degree to which herds and flocks are supervised, the extent of disease among the livestock, the timing of livestock reproduction, prey abundance and other factors. The major conclusion from the limited studies which have addressed the eagle-livestock problem is that depredation is spasmodic. Nonetheless, there have been serious problems in Montana, Texas, New Mexico, Oregon and Wyoming (O'Gara 1981). In an attempt to alleviate reported depredations, the FWS initiated live-trapping and relocation projects in the three states - Montana, Texas and New Mexico. Several hundred eagles have been trapped and removed from depredation sites, but the results of these efforts are unclear.

DEMAND FOR EAGLE PARTS AND USE BY INDIANS

In accordance with the Eagle Protection Act, the FWS's regulations authorize the issuance of permits to allow eagles and their parts to be taken, possessed and utilized by Indians for religious purposes. The Service has established a depository in Pocatello, Idaho, for storing dead eagles that are confiscated or accidentally killed. Upon request through a permit system, eagles and their parts are furnished to Indians for religious ceremonies. The "Operation Eagle" case, which involved the shooting of several eagles (mostly Balds) in South Dakota in 1982, has raised questions about the legality of Indians taking eagles on Indian lands. The matter is currently under review by the U.S. judicial system.

SUMMARY AND CONCLUSION

I share the viewpoint of Nelson (1982) who predicted a positive outlook for Golden Eagles in the 1980s and 1990s. The management problems I have mentioned in this paper will continue to be with us into the foreseeable future. These problems and conflicts appear to be solvable if conservation agencies, members of the conservation community and those directly affected by eagles work together in a cooperative spirit.

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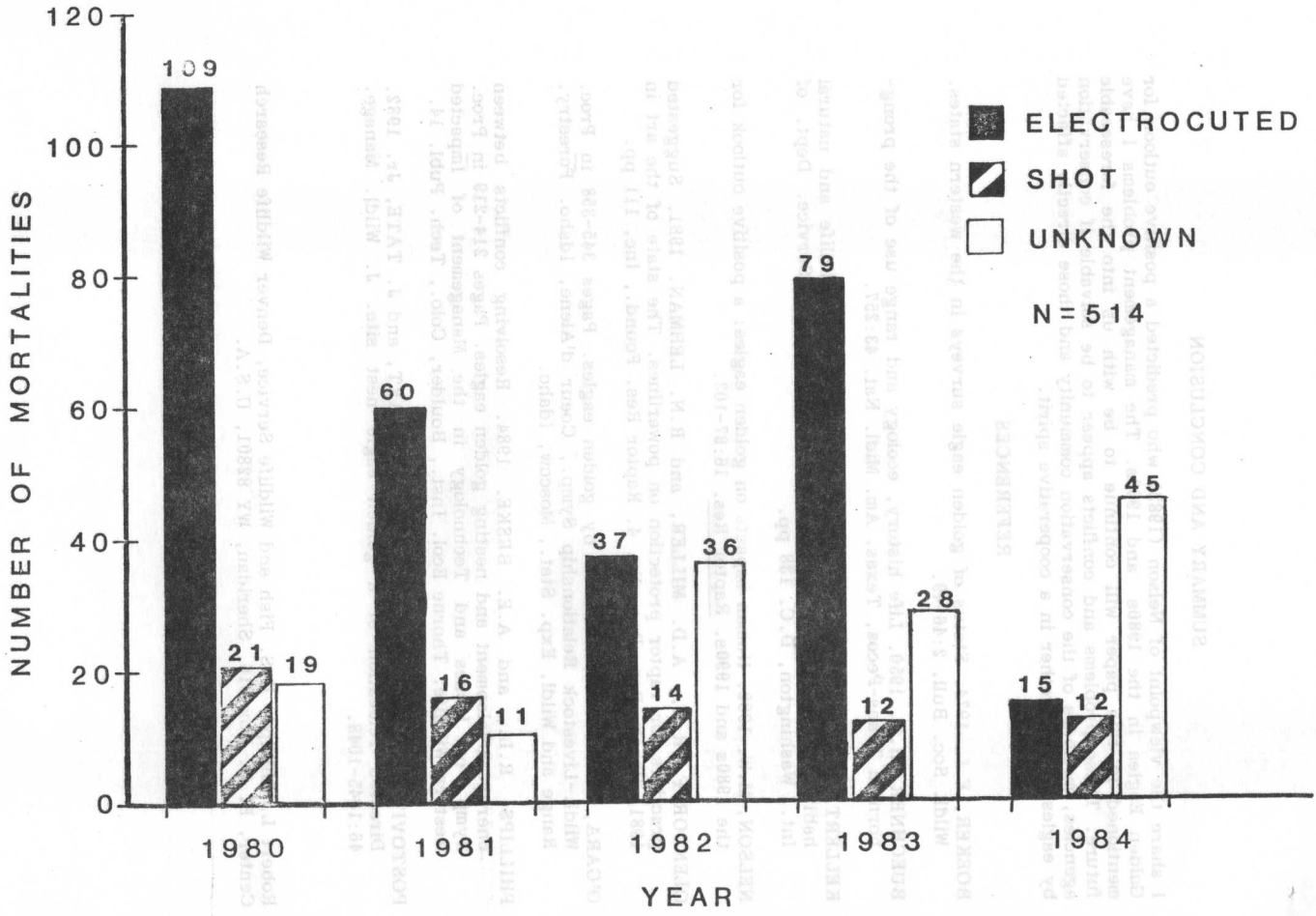
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NUMBER OF MORTALITIES
109
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60
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14
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1981
1982
1983
1984
YEAR
ELECTROCUTED
SHOT
UNKNOWN
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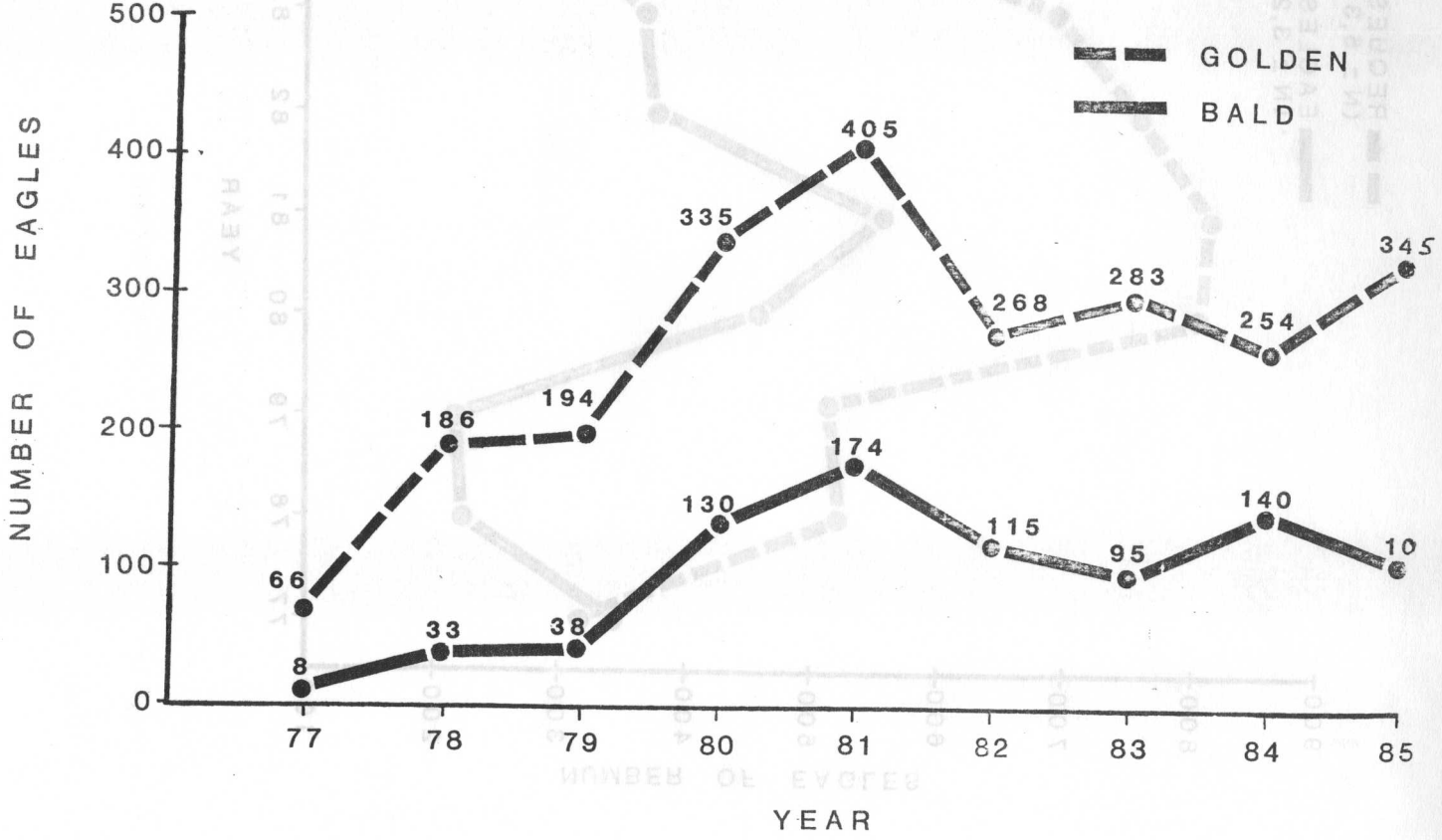
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405
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283
254
345
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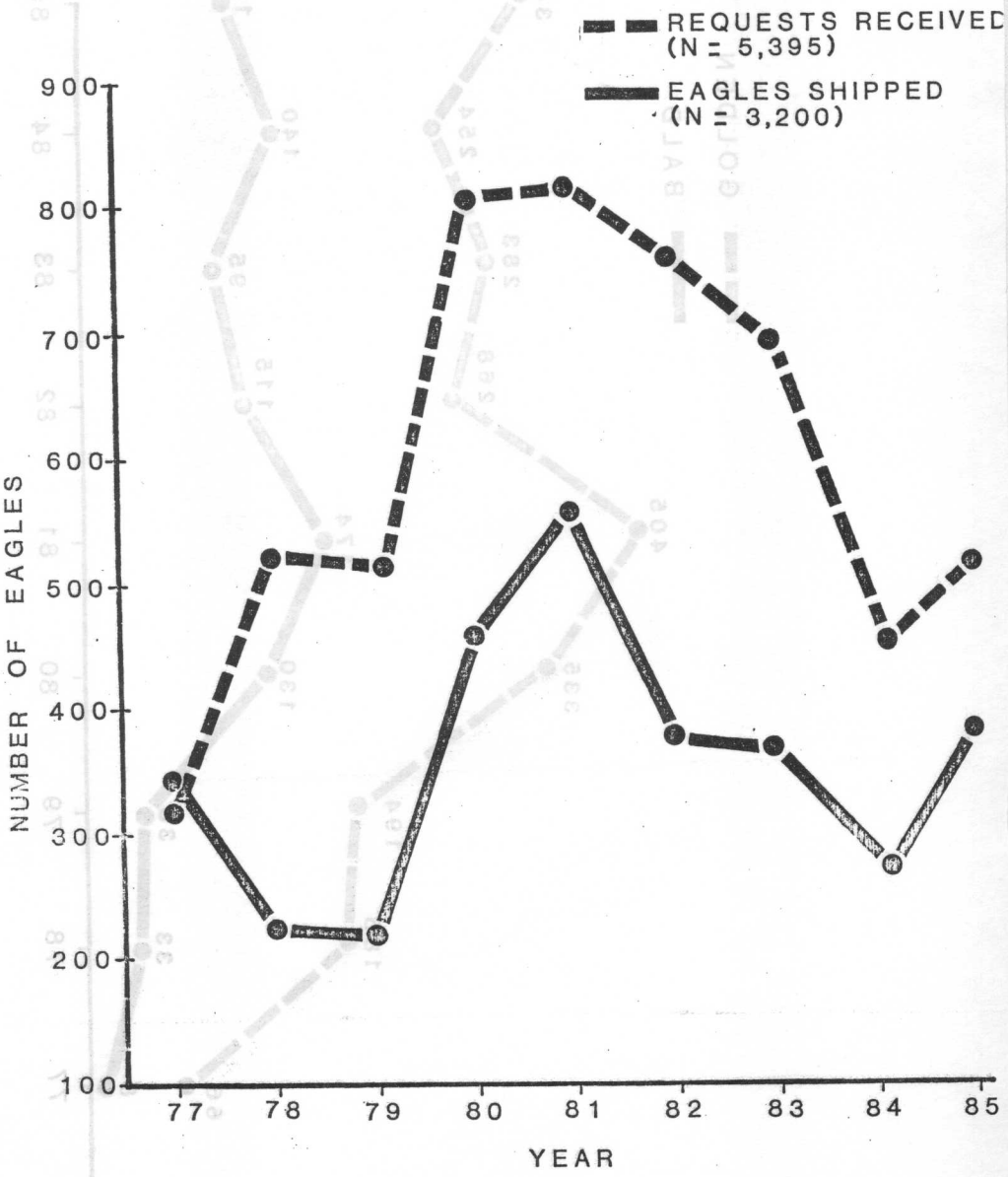
YEAR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100
77
78
79
80
81
82
83
84
85
YEAR