

Endangered species

The fate of the California condor

from David S. Wilcove and Robert M. May

CALIFORNIA CONDORS (*Gymnogyps californianus*) have soared over the foothills and valleys of the western United States since the Pleistocene. Whether they will survive the twentieth century is another matter. Recent counts indicate that only six condors remain in the wild, with another 21 in captivity. The future of North America's largest bird rests with these 27 individuals.

The heyday of the condor is long past. Fossil remains indicate they once occurred from British Columbia in Canada to the southern extent of Baja California in Mexico, and eastwards across the southern United States to Florida. The rich Pleistocene mammal fauna as revealed in the Rancho LaBrea tarpits must have provided abundant food (carrion) and one can imagine the condors squabbling over the carcass of a mammoth. At that time, there were a number of giant scavenging birds in North America, of which the condor is the only surviving species.

Within historical memory, condors still occurred all along the Pacific coast of North America, yet almost as far back as the records go, they have been in decline. By 1850 they had almost disappeared north of California; by 1940 there were none left in Baja California. For most of the past 50 years, they have occupied a U-shaped area of about 45,000 km² from Santa Barbara south along the coastal range to San Jose and along the western foothills of the Sierra Nevadas to southern Madera county.

The first condor census, published in 1953 (ref. 1), gave an estimate of 60 birds, but this was obtained without marking individuals and is now believed to have been far too low². By 1978, only 25–35 condors were thought to remain in the wild. Four years later, some of the wild birds were brought into captivity and eggs were collected for captive hatching. The captive population has grown steadily but so far only by supplementary wild eggs and birds, because it will be several years before most of the captive birds are old enough to breed. The wild population, meanwhile, had dropped to 15 by October 1984 and another six birds had disappeared by May 1985, when three of the survivors were brought into captivity. All the wild birds today are radio-collared, which should allow biologists to monitor them closely.

Many explanations have been offered for the decline of the condor. In the vivid but teleological language of some earlier ecologists, it was termed a senile species: a bird whose low reproductive rate (one offspring every two years), lengthy adol-

escence (six or more years) and vast home range ill-suit it for life in modern-day southern California. The demise of the condor may, therefore, be simply a protracted coda to the larger extinctions that occurred about 10,000 years ago as recorded at Rancho LaBrea. Although there is some truth in this, for conservation purposes it is more useful to focus on the specific environmental problems that plague the condor, including molestation by humans, food shortages, environmental pollution and habitat destruction.

At the turn of the century, when a con-

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End of the line? (Frank Lane picture agency). Condor egg was worth as much as \$300, many of the nests were robbed. Federal protection has eliminated this threat but it has not prevented the occasional loss of adult birds to hunters. There is debate about the extent to which such vandalism is responsible for recent losses.

Some have suggested that the extinction of the Pleistocene megafauna resulted in a food shortage for the condor, but there were large herds of antelope and elk in the San Joaquin and Sacramento Valleys until the mid-nineteenth century. The expansion of ranching in this region provided the condors with abundant livestock, chiefly cattle, sheep and horses³, although the switch to agriculture in the early 1900s probably did reduce their food supply. A programme providing food supplements was started in 1971 (ref. 4).

A far more serious problem has been contamination of the food supply. Condors ingest lead when they dine on animals that have been shot by hunters⁵; at least two birds have died in the past three years from lead poisoning and lead levels in the remaining wild condors are alarmingly high. Levels of DDE in tissue samples

from wild condors are high enough to cause reproductive problems, assuming that condors are as sensitive as most birds of prey to DDE⁶. Eggshells of California condors from 1964–1969 were 33 per cent thinner than in the pre-DDT era⁶.

As the condors live in one of the nation's fastest growing areas, not surprisingly their habitat is under assault. Oil production and urbanization are continually extending into the grasslands where the birds forage, and mining and timber interests would like greater access to the mountainous regions where the birds roost and nest.

The US Department of the Interior must weigh all of these factors when deciding what to do with the remaining condors. Some scientists have recommended that the remaining wild birds be brought into captivity for safe-keeping. Their argument, which seems unanswerable to us, is that a programme of breeding captive birds is the only thing that can save the species, but others think that removing wild birds will eliminate any chances for re-introducing captive-bred individuals to the wild. Without older birds to show them where to roost, nest and forage, new recruits have little chance of surviving.

This argument epitomizes the choice that is likely to face us increasingly often, as more species are driven to the brink by human population expansion: do we settle for preserving specimens of each species in some form of zoo or do we strive, possibly hopelessly, to preserve the ecological entity with its full panoply of behaviour in the wild? In the case of the condor, some urge that a few be left wild, because it may be politically impossible to fend off the assaults on their habitat if there are no wild birds left⁷. The most recent agreement hammered out between the State of California and the Department of the Interior proposes the capture of three of the six remaining wild condors with simultaneous release of three captive birds, but the agreement is contingent on the department purchasing a 14,000-acre tract of land needed for condor conservation, and will probably collapse if any more wild birds die in the next four months.

California condors were around long before the first humans colonized the New World. It may be a measure of the success of our own species that we have all but eliminated the condor. Another measure will be whether we can now save it. □

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David S. Wilcove and Robert M. May are in the Department of Biology, Princeton University, Princeton, New Jersey 08544, USA.