

REPORT:

**RAPTOR RESEARCH BY THE BUREAU OF SPORT FISHERIES
AND WILDLIFE**

[The following brief summaries of Bureau research projects are taken from a 20-page report entitled "Ongoing Research Projects Concerned with Nonhunted and Urban Birds." In at least 20 of the 77 projects listed raptors were the sole or important objects of the research. A number of other summaries relating to raptors to a lesser degree included: Development of Nationwide Breeding Bird Surveys, Study of Bird Migration and Distribution, Interaction between Birds and Man, Use of Return Data on Banded Birds, Study of Importation of Birds into the United States, Manual for the Identification of Endangered Species of Birds, Mortality of Birds Related to Human Activity, Importance of Dead Trees and Snags in the Ecology of Forest Environment in the Southwest, and some others.—Editors.]

Bird and Mammal Laboratories—Washington, D. C.

Geographical Limits of Racial Populations of the Bald Eagle

Objectives: To determine the limits of morphological variation of breeding populations of the Bald Eagle by geographical area throughout its range, with special reference to the endangered southern population.

Progress: Specimens in the National Museum and those alive or frozen for autopsy at Patuxent which were believed to represent breeding populations were measured. Lack of specimens from critical breeding areas such as the Lake States has hampered progress.

Systematic Status of Some Hawaiian Endemic Endangered Species

Objectives: To clarify the taxonomic position (at species or subspecies level) of Hawaiian Hawk, Coot, Gallinule, etc. Many of these forms have not received a systematic review since their original descriptions 75 to 100 years ago.

Progress: Measurements and other pertinent data are being gathered at various museums as opportunity permits.

Denver Wildlife Research Center—Denver, Colorado

Ecology, Life History, and Dynamics of Selected Wildlife Species—Golden Eagle Studies in the Southwest

Objectives: To develop a method of inventory of Golden Eagles in S. W. and determine index of abundance from annual transect counts. Make a survey of nesting status of the Golden Eagle along Front Range of Rockies. Determine

productivity of Golden Eagles in New Mexico, Colorado, and Wyoming.

Progress: Inventory methods developed and studies continuing.

Patuxent Wildlife Research Center—Laurel, Maryland

Preliminary Survey of Rare and Endangered Birds and Their Habitats in the Hawaiian Islands

Objectives: To organize available information on endangered wildlife in Hawaii into readily usable form; to gather information on current status; assess relative importance of principal environmental characteristics limiting each species.

Progress: Accumulation of information from literature in a punch card system is now essentially complete; current information on Hawaiian Crow, Hawaiian Hawk, Hawaiian Stilt obtained; studies of the Kilauea-Keauhou (*Acacia koa*) forest, a type of great importance to endangered species, were initiated; intensive studies of the endemic forest birdlife of Kauai has produced some valuable observations including the first known nesting of the Oo.

Life History, Ecology, and Management of the California Condor

Objectives: To obtain information on population status, life history, and ecology additional to that supplied by Koford and Miller *et al.*, to provide a factual basis for management.

Progress: Additional information on population status, nesting activity, roosting, effects of disturbance, effects of pesticides, food supply and plumage changes was obtained.

Status, Life History, and Ecology of Threatened Wildlife of the Southeastern United States

Objectives: To determine the present status, distribution, life history, and ecological requirements of the Florida Everglade Kite and Dusky Seaside Sparrow.

Progress: A population of about 120 kites was found. Their distribution and nesting success depends on water levels which control snail activity. Sources of kite mortality both natural and human were investigated. Fresh water inundation for mosquito control on Merrit Island Refuge has caused decline of salt marsh habitat with accompanying reduction of Dusky Seaside Sparrows.

Cooperative Wildlife Research Units

Ecological Investigations of the Gyrfalcon in Alaska

Objectives: To investigate the breeding biology and ecology of the Gyrfalcons of the Seward Peninsula. To assess the chlorinated hydrocarbon pesticide contamination in these birds and their prey species.

Progress: Analyses for chlorinated hydrocarbon pesticides are continuing on both falcons and prey species collected. Eggshell thickness has been measured

and indices calculated. DDE comprises about 90 percent of residues and residues were high in some cases. Eggshell thickness does not differ significantly from prepesticide indices. Great individual variation in DDE residues as determined by fat biopsies reflect differences in individual feeding habits. Population recruitment good in 1970, nearly zero in 1971 and increased again in 1972.

Nesting Density and Reproductive Success of Prairie Falcons in Southwestern Idaho

Objectives: To determine population size and density, productivity, nesting success, mortality, and food habits.

Progress: In 1972, 101 nesting pairs located and 47 nests were studied. One hundred and forty-seven young were banded. Egg clutch sizes determined. Interaction with Peregrine Falcon noted.

Effects of Prefledging Experience on Pair Formation and Nest Site Selection in Raptors

Objectives: To test feasibility of using nest site imprintation in female raptors as a means of inducing breeding in captivity.

Progress: Kestrels are being raised in artificial nest structures of several types and they will be offered a choice of nesting structures during the first year of breeding.

A Survey of Prairie Falcon Populations in Western Montana

Objectives: General study to determine population density and productivity in selected areas of Montana.

Progress: Two and one half year study completed and thesis completed in June 1972. Found Prairie Falcons reproducing satisfactorily but were being affected by pesticides in two counties in southwest Montana.

Behavior of the Golden Eagle during the Breeding Season

Objectives: To study ontogeny of behavior in eaglets and the adaptive significance of sexual dimorphism in adults.

Progress: Study in third year and should be terminated in one year with Ph.D. thesis.

Management-oriented Study of Bald Eagle Concentration in Glacier

Objectives: To determine numbers and behavior of eagles in Glacier Park during spawning season of Kokanee salmon and to make recommendations for protection of birds while allowing limited viewing by visitors.

Progress: Will continue field work during 1972 and complete thesis in 1973.

Breeding Experiments with Golden Eagles in Captivity

Objectives: To utilize crippled or confiscated eagles brought to unit for study.

Progress: Most of these birds are rehabilitated but a few are kept for captive breeding experiments.

Life History and Habitat Requirements of Burrowing Owls in Western Oklahoma

Objectives: To determine preferences for habitat for nesting, escape, feeding, and shelter, to describe life history and determine if migratory.

Progress: Thesis now being revised.

Osprey Production, Nest Site Selection, and Food Habits on Deschutes National Forest, Oregon

Objectives: Measure productivity of breeding pairs and determine population trends; evaluate nesting habitats particularly as to nest site selection to provide guidelines for timber harvest; determine species of fish taken for food and frequency of capture.

Progress: Thesis in preparation.

Breeding Biology of Accipiter Hawks in Oregon

Objectives: Determine clutch size, hatching, and fledging success of Goshawks, Cooper's Hawks, and Sharp-shinned Hawks breeding in Oregon; Evaluate levels of persistent pesticides in eggs, moribund young and selected prey items.

Progress: Eggs of Cooper's, Sharp-shinned and Goshawk collected and sent to Cornell University for quantification of DDE content. Breeding Pairs of Cooper's Hawk spaced 3.5-4.0 miles apart; Goshawks about 12 miles. Difference in habitat appears to be age structure of forest at nest site.

Ecology of the Northern Spotted Owl

Objectives: Habitat requirements, limits of range in Oregon, reproductive biology, food habits, effects of forest management.

Progress: New Project. Planning and field reconnaissance begun.

*Division of Wildlife Refuges***Southern Bald Eagle Nesting on Merritt Island National Wildlife Refuge**

Objectives: To determine what proportion of eagle nests are producing young and number of young produced per nest; to gain information on nest failures.

Progress: Continuing.

Habitat Requirements of Apple Snail (*Pomacea paludosa*)

Objectives: Because of the indispensability of this snail as food for the endangered Everglade Kite, to determine its distribution in Lake Woodruff Refuge; determine the vegetative and water characteristics where it is most abundant; determine the water depth preferred by snails for feeding and resting during day and night; determine all life history factors necessary for the management of this snail.

Progress: Continuing. Since 1971, one report completed.

Autumn Survey of Migrating Peregrine Falcons on Assateague

Objectives: To monitor the abundance and calculate age and sex ratios of migrating Peregrines and compare these conditions with previous records; to standardize the methods of compiling population indices so that data obtained will provide meaningful baseline information; to trap and mark Peregrines to determine breeding and wintering areas of Assateague migrants.

Progress: A manuscript on Autumn migration of Peregrine Falcons on Assateague Island 1970 has been submitted for publication in *The Auk*.