or three, but we found a significant difference between the nests containing two fledglings and those with 0, 1 or 3 ($\chi^2 = 109.37$, g.l. = 3, $P < 0.01$). The diet of Crested Caracaras in the breeding season indicates a tendency both to have a broad diet breadth and to be an opportunistic species. Although the productivity of the species in the Cape Region was high (1.93 ± 0.85 young/attempt, $N = 16$), we believe the species will be threatened if human disturbance, deforestation, hunting and habitat loss are not stopped. We are concerned because "Los Cabos" are now suffering from the "tourism effect" and the increasing agricultural activities.

PAIRED USE OF SATELLITE AND VHF TELEMETRY ON REHABILITATED BALD EAGLES

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Two rehabilitated Northern Bald Eagles (*Haliaeetus leucocephalus alascanus*) fitted with backpack-mounted satellite tracking transmitters (PTTs) and tail-mounted VHF ground-tracking transmitters were released into the Skagit River Bald Eagle Natural Area (SRBENA) by the Woodland Park Zoo in Seattle. A juvenile female (90 hatch) was released in January 1991 and a sub-adult female (89 hatch) was released in January 1992. The paired use of satellite and VHF telemetry was tested to see if birds that left the vicinity of the release site could be relocated using the latest satellite location data as a starting point to begin a ground search using standard VHF telemetry. The juvenile female was tracked by satellite for six months prior to transmitter failure. The subadult female is currently being tracked by satellite eight months after release. Failure of the tail-mounted VHF transmitters after approximately four months each has prevented continued ground tracking of these birds. It was found that the paired use of satellite and VHF telemetry allowed longer term tracking and monitoring of individual rehabilitated eagles than was possible with VHF telemetry alone.

IDENTIFICATION OF INDIVIDUAL OSPREYS BY USE OF PLUMAGE PATTERNS

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Individual ospreys often are difficult to distinguish in the field, particularly when unbanded or incubating deep in a nest. By observation of over 350 osprey including all four subspecies, I have developed a method of distinguishing individuals by head and upper body plumage patterns. During the 12-year study, comparisons were made in both the field and museums. The variations in patterns also make it possible to determine the identity of individuals in subsequent years. Long-lens photography and sketches were used to document plumage patterns which have proven unique and consistent. This method has been of great assistance during reintroduction programs in Pennsylvania and is recommended for field use.

CRITERIA FOR DETERMINING AGE AND SEX OF NESTLING OSPREY

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During the period 1984–87, the development of 63 nestling osprey, 33 males and 30 females, was monitored in 39 broods in North America. Eleven variables were measured on birds of known age and sex every other day until fledging. Using a combination of plumage and weight variables, which are easily measured and highly dimorphic, a method is presented to quantify age and sex-determining criteria suitable for use in field situations.

FACTORS INFLUENCING THE DISTRIBUTION OF PEREGRINE FALCONS (*FALCO PEREGRINUS*) IN THE AUSTRIAN ALPS

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From studies of some species of birds of prey, we know that the availability of suitable nest sites and food supply are the main factors influencing their breeding distribution. For the Peregrine Falcon, some authors claim that there is some evidence for this relation but, until now, no quantified data has been available. A two-year survey of Peregrines in Salzburg county (Austria) showed that the distribution of this species is very irregular. The present study aims to shed more light on the situation by elucidating which factors determine the distribution of the peregrine and whether the species has a preference for specific types of habitat or for a particular range of altitudes. Between the two subareas (Calcareous and Central Alps) differences in the distribution of breeding pairs were found. Nesting sites in the Calcareous Alps are spaced regularly, while those sites in the Central Alps are spaced in a more random fashion. However, for both subareas there is a clear negative correlation between both elevation and prey density (individuals and biomass) and the "nearest neighbor distance" between breeding pairs. There was no significant preference for a specific habitat type. It seems that there are different factors influencing breeding distribution of peregrines in different parts of Salzburg county. In the Calcareous Alps, prey abundance is limiting breeding density whereas in the Central Alps, suitable cliffs are in short supply. This study quantifies the importance of different factors for population regulation of Peregrine Falcons and makes it possible to include these parameters in future management programs.

RAPTOR ABUNDANCE IN SOUTHCENTRAL KENYA IN RELATION TO LAND-USE PATTERNS

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We conducted nine road surveys for birds of prey from 12 January through 17 March 1990 in Nairobi National Park and in an adjacent area dominated by subsistence agriculture and livestock grazing in southern Kenya. We observed an average of 4.27 raptors/km inside the park and 0.40 raptors/km outside the park ($P < 0.005$). Excluding very abundant species [lesser kestrels (*Falco naumanni*) and vultures; 72.6% of all observations] and species associated with human settlements [black kites (*Milvus migrans*); 8.9% of all observations], raptors were observed more frequently in the park (0.47 raptors/km) than outside the park (0.23 raptors/km) ($P < 0.01$). Although species richness was similar inside (18 species) and outside the park (22 species), eagles, vultures, and lesser kestrels were seen more frequently inside the park and some infrequently observed species were only seen either inside or outside the park. These results reflect the differences in land-use practices inside and outside of the park, and suggest significant changes in raptor community structure (species richness, density, and species identity) related to human land use.

EFFECTS OF RECREATIONAL ACTIVITY ON FEEDING BEHAVIOR OF WINTERING BALD EAGLES

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For 5 years we studied how recreational activity affected wintering bald eagles (*Haliaeetus leucocephalus*) on the Skagit River Bald Eagle Natural Area (SRBENA) in Washington. Nearly 300 eagles wintered on SRBENA and fed on chum salmon (*Oncorhynchus keta*) carcasses, and up to 115 recreational events occurred each day (mean = 17 events/day). The number of eagles on the SRBENA was negatively correlated ($P < 0.001$) with the daily number of recreational events. Feeding activity declined exponentially ($P < 0.001$) with increasing recreational activity. Motorboats were particularly disruptive to feeding behavior. After 20 activity events per day, eagles still present were reluctant to feed, and after 40 events, feeding was nil. On weekends, when recreational activity was high, eagles fed 30% less than on weekdays, when activity was low. Eagles fed mostly in morning hours (64%), especially between 0900 and 1100 H (39%), and feeding disruptions were most pronounced during these hours. Number of feeding subadults declined faster than adults ($P < 0.05$) in the presence of recreational activity and subadults were slower ($P < 0.001$) to resume normal feeding after disturbances. Resumption of normal feeding was relatively fast after boat traffic (mean = 36 min), but slow after foot traffic (mean = 228 min). Under current levels of recreational use on the SRBENA, overall feeding activity was reduced by 35%. We recommend restricting recreational use, particularly motorboats and foot traffic, during morning hours to allow eagles to feed without being disturbed.

COMPARATIVE EVALUATIONS OF HEMATOLOGIC PARAMETERS OF RED-TAILED HAWKS AND AMERICAN KESTRELS TRAPPED IN CALIFORNIA

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Winter red-tailed hawks (*Buteo jamaicensis*) and American kestrels (*Falco sparverius*) were studied in the Modesto area to evaluate the risk presented to raptors from organophosphate (OP) dormant spray exposure. Blood was collected from 36 red-tailed hawks and 30 American kestrels during the dormant spray season (November–February) of 1990–91 and 1991–92. Additional samples from captive American kestrels and red-tailed hawks trapped in the Sacramento area are included in the analysis. Complete blood cell counts, hematozoa identification, and quantification of serum enzymes, protein, and electrolytes are reported. Age and sex differences of hematologic parameters will be presented. Correlation of hematologic parameters with OP residues will be examined to emphasize physiologic effects and symptoms of exposure. Supported by the Almond Board of California.

RELOCATION OF BURROWING OWLS DURING COURTSHIP PERIOD

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In February 1990, five pairs of Burrowing Owls (*Speotyto cunicularia*) were translocated from Mission College, Santa Clara, California, to two adjacent sites in south San Jose, Santa Clara County, a distance of 19 linear miles. Owls were trapped, banded, and color-banded, held in hacking aviaries, and released into artificial burrows at relocation sites. Two pairs nested and produced nestlings by 15 May. One of these nests was successful and the second was destroyed by predator(s). Two female owls with failed nesting attempts returned to the Mission College site. In April 1992, two color-banded owls were observed at the south San Jose release site. In August 1992, one owl was recaptured at the original capture site. A second color-banded owl was found injured in August 1992, near the