

of the breeding area, are not attributable to better surveys, but to increased population during this period. The effects of biological and physical factors on this increase are discussed.

THE INFLUENCE OF SHORELINE PERCH TREE  
DISTRIBUTION ON THE DISTRIBUTION OF BALD EAGLES  
ALONG THE NORTHERN CHESAPEAKE BAY

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Forested shoreline is important perching habitat for bald eagles (*Haliaeetus leucocephalus*). Measures for perch tree abundance were determined for segments of the Chesapeake Bay shoreline during 1990–1991 to determine the influence of shoreline perch tree availability on the distribution of bald eagles. Shoreline segments used by eagles had more suitable perch trees, a larger percent of forest cover, and greater distances from water to the closest tree ( $P < 0.01$ ). Differences between used and unused segments appear to be due to the influence of marsh shoreline. Logistic regression models were created to predict the probability of eagle use of the shoreline, given different densities of human development and perch tree availability.

INBREEDING, LINKAGE AND GENETIC DRIFT IN CAPTIVE  
AMERICAN KESTRELS

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The effects of inbreeding on the decreased fitness of a species as a result of increased homozygosity have been well documented. The main goal of captive-breeding programs is to maintain the founder population's allele survival. DNA fingerprinting was performed on the breeding colony of pedigreed American kestrels (*Falco sparverius*) maintained at McGill in order to: A) establish an inbreeding curve; B) determine allelic linkage; and C) compare band-sharing of free-ranging and captive-bred kestrels. Minimal inbreeding was found within the colony. The degree of allelic sharing between individuals was proportional to their degree of relatedness. Only one case of allelic linkage was identified, therefore the majority of bands resolved represent independently segregating loci and the allelic band sharing represents an accurate estimate of relatedness. The allelic band sharing between randomly selected captive-bred and free-ranging kestrels was not appreciably different.

DIFFERENTIAL MIGRATION IN SHARP-SHINNED HAWKS  
AND COOPER'S HAWKS

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We examined differential timing and distance of migration in sharp-shinned hawks (*Accipiter striatus*) and Cooper's hawks (*A. cooperii*) migrating through the intermountain west. Seven seasons (1985–1991) of spring and fall migration observations were conducted from two sites in central New Mexico. Significant differences in seasonal patterns and mean dates of migration for adult and immatures were detected for both species. Immature sharp-shinned hawks and Cooper's hawks preceded adults during fall migration by 15 and 7 d, respectively; adults preceded immatures during spring migration by 10 and 20 d, respectively. Band recoveries from the nonbreeding season indicated that immatures wintered farther south than adults and females wintered farther south than males. However, not all differences were significant. Results are discussed with respect to existing hypotheses for differential migration.

THE USE OF A GEOGRAPHICAL INFORMATION SYSTEM TO  
STUDY THE EFFECTS OF FORESTRY PRACTICE ON  
GOLDEN EAGLE (*AQUILA CHRYSAETOS*)  
REPRODUCTIVE SUCCESS

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It has been hypothesized that recent afforestation of extensive areas of the Scottish uplands, consisting largely of single species conifer planting, have caused a decline in golden eagle (*Aquila chrysaetos*) survival and breeding success, through the reduction in suitable hunting habitat. However, there is also some evidence that the forests contain sizeable prey populations at the pre-thicket stage, prior to canopy closure. The effects of forestry practice on golden eagle reproductive success were investigated on the Cowal Peninsula in Argyll, Scotland, using a geographical information system, chosen as a powerful tool to organize, manipulate and analyze the very large data set. The spatial data were held in ARC/INFO, linked to an attribute database in ORACLE.

READING PROJECT BANDS WITH TELESCOPES

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Reading peregrine falcon (*Falco peregrinus*) project bands is crucial to assessing the status of restoration populations. Short of individual captures, the only way this can be done with consistency is with telescopes. The average observer has little success with telescopic band reading due to a lack



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