

FEATURE ARTICLES

COEXISTENCE IN A MULTISPECIES ASSEMBLAGE OF EAGLES IN CENTRAL ASIA

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*Abstract.* We evaluated factors that permit species coexistence in an exceptional assemblage of similar raptor species at the Naurzum Zapovednik (a national nature reserve) in north-central Kazakhstan. White-tailed Sea-Eagle (*Haliaeetus albicilla*), Imperial Eagle (*Aquila heliaca*), Golden Eagle (*A. chrysaetos*), and Steppe Eagle (*A. nipalensis*) all breed at the Zapovednik. Steppe Eagle use of nesting resources was distinct from that of tree-nesting species. We evaluated differences in nest tree and nest habitat characteristics, nest dimensions and positions, and nest spacing among the three forest-dwelling eagle species to distinguish between the effects of inter- and intraspecific resource limitations on species coexistence. Although the different species bred in similar habitat and sometimes reused other species' nests, the dimensions, positions and locations of their nests often differed. These differences did not appear to result from interspecific competition. Nest spacing trends were also species specific; Imperial Eagles generally nested farther from other eagle nests than did Golden Eagles and White-tailed Sea-Eagles. Intraspecific variation in habitat, physical characteristics, and spacing patterns of Imperial Eagle nests was extensive throughout the nature reserve. Although interspecific partitioning of nesting habitat may allow coexistence of ground-nesting Steppe Eagles, interspecific competition did not appear to be a primary determinant of the use of nest habitat, space or nests by tree-nesting species. Rather, interspecific effects appeared secondary to intraspecific effects in determining coexistence of tree-nesting eagles at this site.

*Key words:* *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *habitat use*, *Haliaeetus albicilla*, *Kazakhstan*, *species coexistence*.