

Egg-laying intervals in shorebirds

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The interval between consecutive eggs laid in a clutch by female birds is highly variable, ranging from one day to several weeks. I summarize data for 71 species of shorebird and examine relationships between minimum egg-laying intervals and constraints imposed by: 1) time, represented by breeding latitude and length of breeding season; 2) energy, as gauged by relationship between egg mass and female mass; and 3) risk of losing a clutch, measured by whether a species conceals eggs in a nest amidst vegetation or nests in the open. Among shorebirds, the interval is either one (e.g., most sandpipers) or two days (principally plovers, thick-knees and oystercatchers). There was no evidence that longer intervals correlate with greater female investment in egg (or clutch) mass. However, species breeding in more northerly latitudes (with shorter breeding seasons) are more likely to lay at daily intervals than species occupying temperate or tropical environs. A greater percentage of species that nest in vegetation that conceal eggs and incubating adults laid eggs at daily intervals compared with species nesting in open habitats. These latter two relationships are, however, confounded by taxonomy because sandpipers, which have a northerly breeding distribution and conceal nests, differ from plovers, thick-knees and oystercatchers, which principally breed in open habitats of temperate and tropical latitudes. Nevertheless, it is plausible that in addition to long breeding seasons, longer laying intervals in open-nesting species have evolved as a response to frequent clutch loss owing to predators or the environment.