

FEATURE ARTICLES

DOES LIFE HISTORY PREDICT RISK-TAKING BEHAVIOR OF WINTERING DABBING DUCKS?

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Abstract. Life-history theory predicts that longer-lived, less fecund species should take fewer risks when exposed to predation than shorter-lived, more fecund species. We tested this prediction for seven species of dabbling ducks (*Anas*) by measuring the approach behavior (behavior of ducks when approaching potential landing sites) of 1099 duck flocks during 37 hunting trials and 491 flocks during 13 trials conducted immediately after the 1999–2000 waterfowl hunting season in California, USA. We also experimentally manipulated the attractiveness of the study site by using two decoy treatments: (1) traditional, stationary decoys only, and (2) traditional decoys in conjunction with a mechanical spinning-wing decoy. Approach behavior of ducks was strongly correlated with their life history. Minimum approach distance was negatively correlated with reproductive output during each decoy treatment and trial type. Similarly, the proportion of flocks taking risk (approaching landing sites to within 45 m) was positively correlated with reproductive output. We found similar patterns of approach behavior in relation to other life-history parameters (i.e., adult female body mass and annual adult female survival rate). Thus, species characterized by a slower life-history strategy (e.g., Northern Pintail [*A. acuta*]) were more risk-averse than species with a faster life-history strategy (e.g., Cinnamon Teal [*A. cyanoptera*]). Furthermore, although we were able to reduce risk-averseness using the spinning-wing decoy, we were unable to override the influence of life history on risk-taking behavior. Alternative explanations did not account for the observed correlation between approach behavior and life-history parameters. These results suggest that life history influences the risk-taking behavior of dabbling ducks and provide an explanation for the differential vulnerability of waterfowl to harvest.

Key words: allometry, *Anas*, dabbling ducks, life history, predation risk, risk-taking behavior, spinning-wing decoy.