

ESTIMATING TERRITORY OCCUPANCY, COLONIZATION RATES, AND EXTINCTION RATES FOR COMMON LOONS IN NORTHWEST MONTANA

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Our research was designed to investigate the key biotic and abiotic factors influencing loon presence and identify, in addition to breeding lakes, other lakes that are important to common loons (*Gavia immer*) in northwest Montana. Specifically, we investigated the relationships between habitat characteristics, disturbance, and intraspecific interactions, and how they may be related to territory occupancy. Landscape scale intraspecific covariates

were the most important factors influencing occupancy while colonization and extinction rates remained constant. Models with habitat covariates and disturbance covariates ranked low. These results suggest that colonization and extinction rates are in a state of equilibrium, i.e., if an occupied territory is lost an unoccupied territory becomes occupied. Results also support that while habitat and disturbance characteristics may have considerable influence on nest success and chick survival, they have little influence on territory occupancy. Prior to any management action, managers should evaluate the potential effects associated with increasing the probability of an unoccupied territory becoming occupied as increasing the number of occupied territories may not only have a positive effect on nest success and chick survival, but at some threshold may also have a negative effect.