Public Abstract
First Name:Evan
Middle Name:Blaise
Last Name:Hill
Adviser's First Name:Elisabeth
Adviser's Last Name:Webb
Co-Adviser's First Name:
Co-Adviser's Last Name:
Graduation Term:FS 2015
Department:Fisheries & Wildlife
Degree:MS
Title:LINKING WETLAND MANAGEMENT DECISIONS TO SECRETIVE MARSH BIRD HABITAT USE DURING SPRING MIGRATION AND SUMMER BREEDING ON PUBLIC WETLANDS IN MISSOURI

Dynamic occupancy modeling was used to determine how SMB occupancy and colonization and extinction probabilities were influenced by wetland management practices, including the duration and initiation date of spring water-level drawdowns, and associated wetland habitat characteristics. The top occupancy model for sora included drawdown duration, and the top colonization/extinction model included vegetation density and percent of a site containing emergent vegetation. The top American bittern occupancy model included drawdown duration, and the top colonization/extinction model included vegetation-water interspersion. The top Virginia rail occupancy model was the null model, and the top colonization/extinction model included the range of water depths and range of vegetation heights. The top occupancy model for least bittern included drawdown initiation date and the top colonization/extinction model included average water depth. Logistic regression, logistic exposure, and discrete choice were used to determine effects of hydrologic management and habitat characteristics on habitat selection and the daily survival rate (DSR) of breeding least bittern on public wetlands in Missouri at two scales: the entire wetland and the nest point. The percent of a wetland covered in emergent vegetation and the average water depth were positively associated with probability of use at the wetland scale. At the point scale, discrete choice was used to evaluate models composed of combinations of covariates thought to influence least bittern nest site selection. The relative probability of use was positively correlated with water depth, percent of a site in emergent vegetation, and negatively correlated with vegetation density. DSR was positively correlated with average water depth at nest points.