

SHORT COMMUNICATIONS

ESTIMATING SURVIVAL PROBABILITIES OF UNMARKED DEPENDENT YOUNG WHEN DETECTION IS IMPERFECT

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Abstract. We present a capture–recapture modeling approach to the estimation of survival probability of dependent chicks when only the attending adult bird is marked. The model requires that the bird’s nest is found prior to hatching and that the number of eggs that hatch are counted. Subsequent data are sightings of the marked adult and a count of chicks with the adult. The model allows for imperfect detection of chicks, but the number of chicks can never exceed the number of eggs in the nest (i.e., adults cannot adopt chicks). We use data from radio-tagged adult Mountain Plovers (*Charadrius montanus*) and their unmarked chicks as an example. We present the model in terms of precocial bird species, but the method extends to many other taxa.

Key words: capture–recapture, Cormack-Jolly-Seber model, Mountain Plover, open population models, survival estimation.