

Teasing Apart the Influences of Patch Size and Nest Density

Victoria L. Simonsen and Joseph J. Fontaine

Nebraska Cooperative Fish and Wildlife Research Unit

University of Nebraska-Lincoln

School of Natural Resources



Predation is the primary cause of nest failure



Create nest habitat



Nesting within a larger landscape



Landscape influences nest predation

Ecological Applications, 15(6), 2005, pp. 2137–2149
© 2005 by the Ecological Society of America

DUCK NEST SURVIVAL IN THE MISSOURI COTEAU OF NORTH DAKOTA: LANDSCAPE EFFECTS AT MULTIPLE SPATIAL SCALES

SCOTT E. STEPHENS,^{1,4} JAY J. ROTELLA,¹ MARK S. LINDBERG,² MARK L. TAPER,¹
AND JAMES K. RINGELMAN³

Habitat and Landscape Effects on Brood Parasitism, Nest Survival, and Fledgling Production in Swainson's Warblers

Author(s): Thomas J. Benson, Nicholas M. Anich, Jeremy D. Brown, and James C. Bednarz

Source: *Journal of Wildlife Management*, 74(1):81-93.

Published By: The Wildlife Society

Tests of Landscape Influence: Nest Predation and Brood Parasitism in Fragmented Ecosystems

Author(s): Joshua J. Tewksbury, Lindy Garner, Shannon Garner, John D. Lloyd, Victoria Saab and Thomas E. Martin

Source: *Ecology*, Vol. 87, No. 3 (Mar., 2006), pp. 759-768

We must be strategic



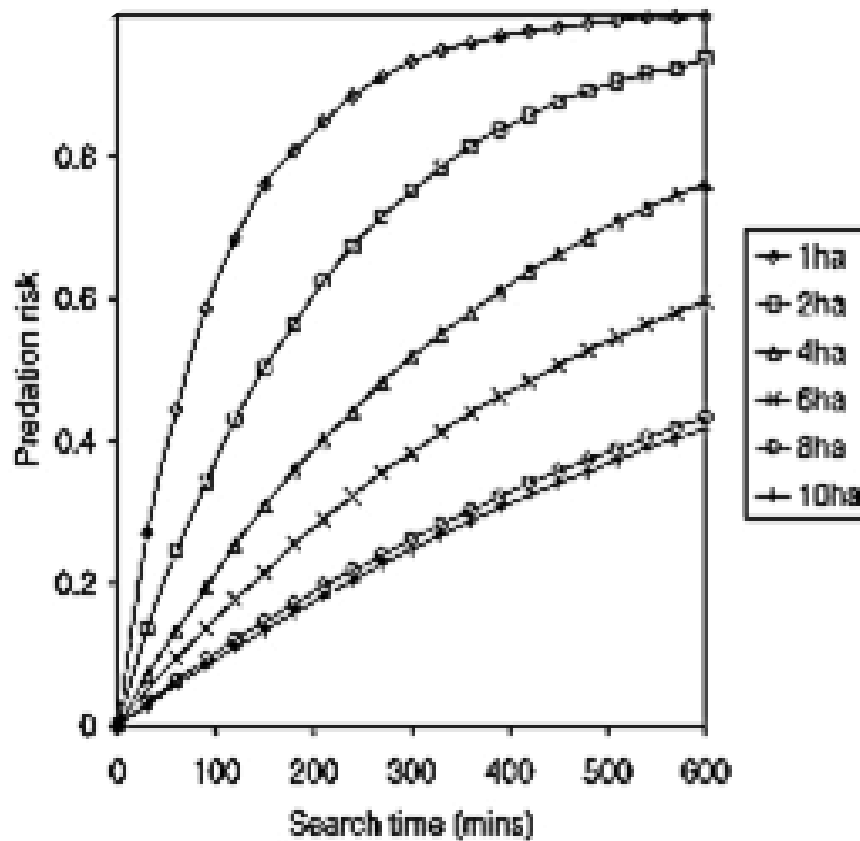
Account for the context...



**How do patch size and
nest density influence
predation risk?**

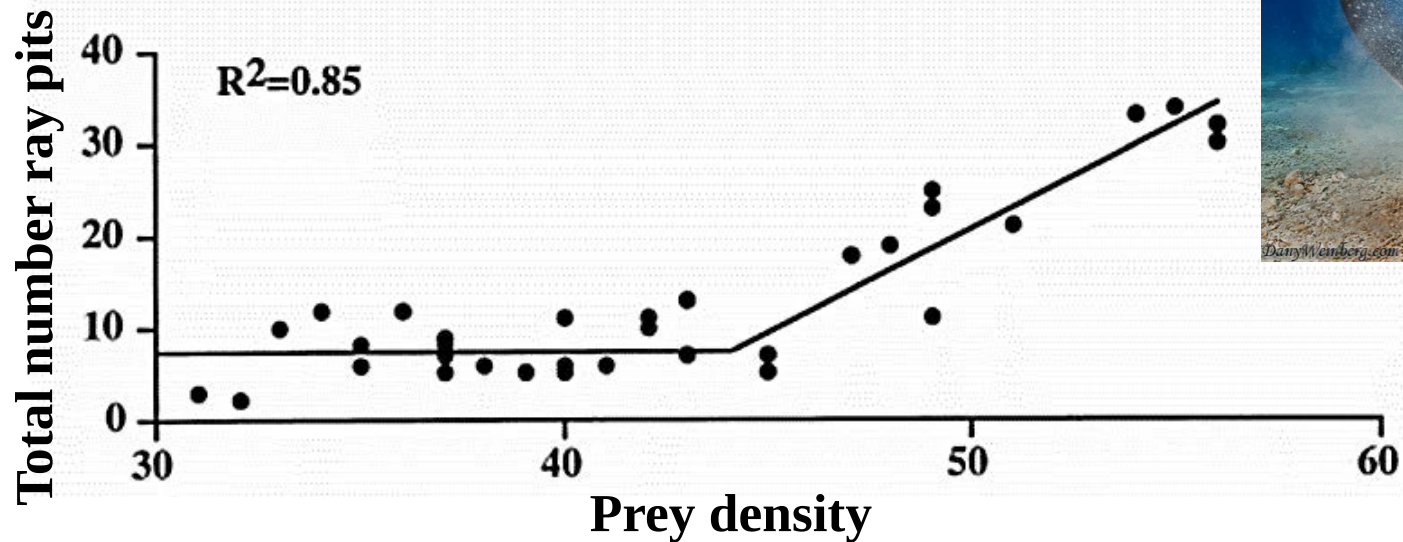


Habitat patch size influences predator search efficacy



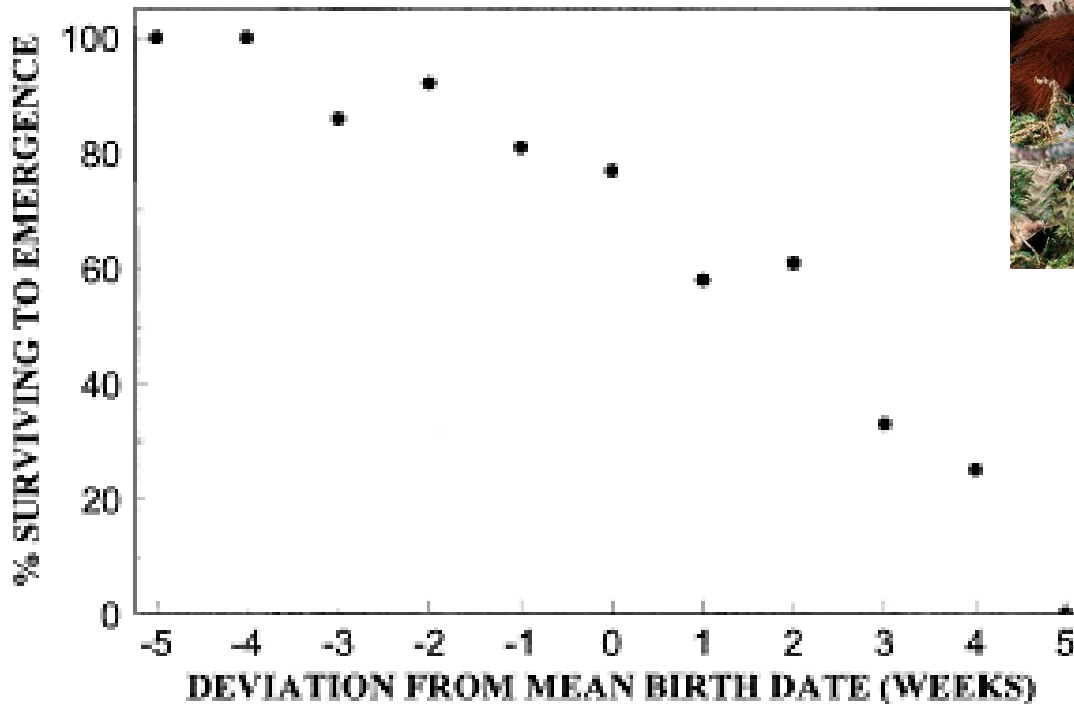
(Clark and Nudds 1991; Seymour, Harris, White 2004)

Nest density: Negative effect



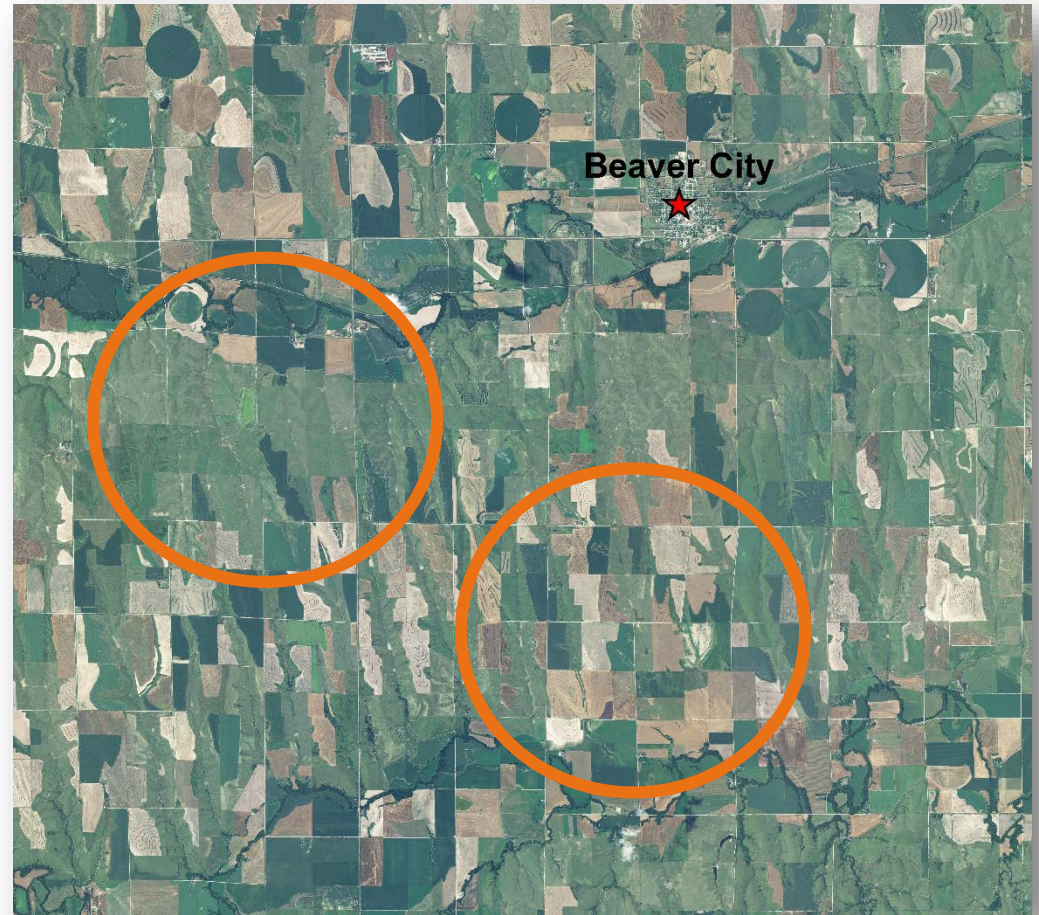
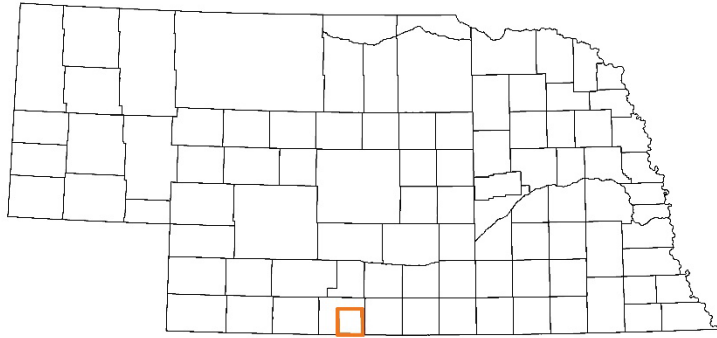
(Figure modified from Hines et al. 1997)

Nest density: Positive effect



(O'Donoghue and Boutin 1995)

Nebraska





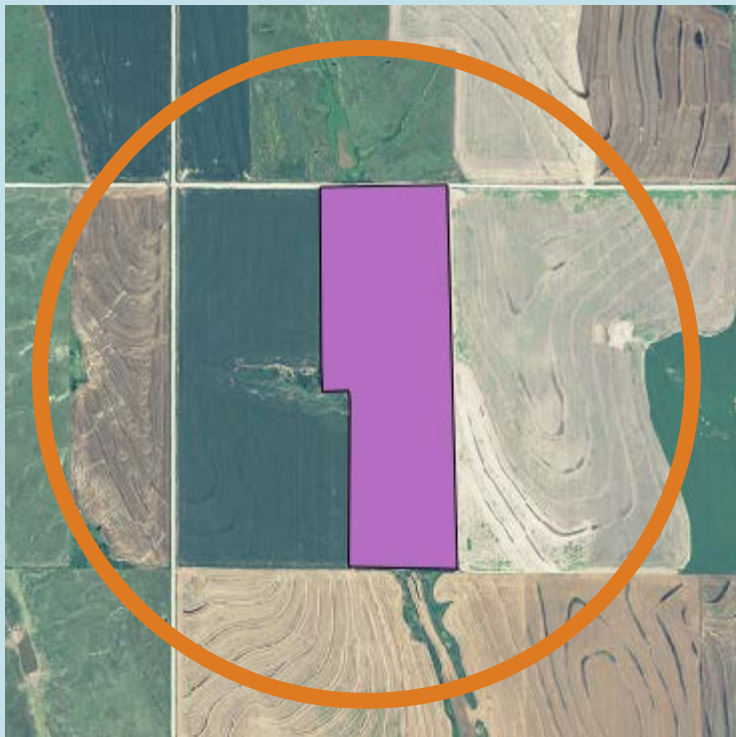
40-60 ha patch
surrounded by
cropland

50 ha section of large
grassland patch

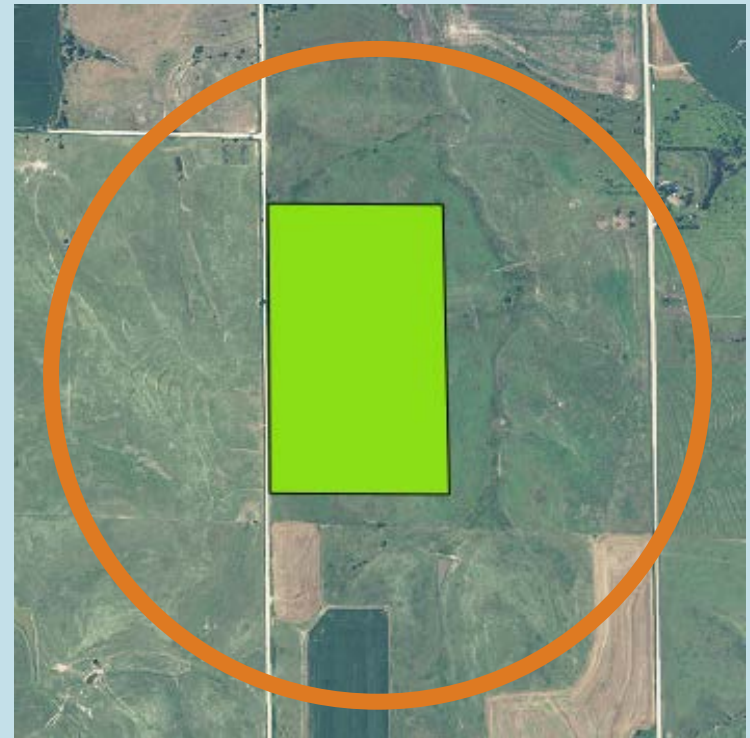


Patch size treatments

Small



Large



Nest density treatment

Low: 1nest/2ha



High: 1nest/0.5ha



2 trials



2 trials

- June: 314
 - 183 survived
 - ~ 58%



2 trials

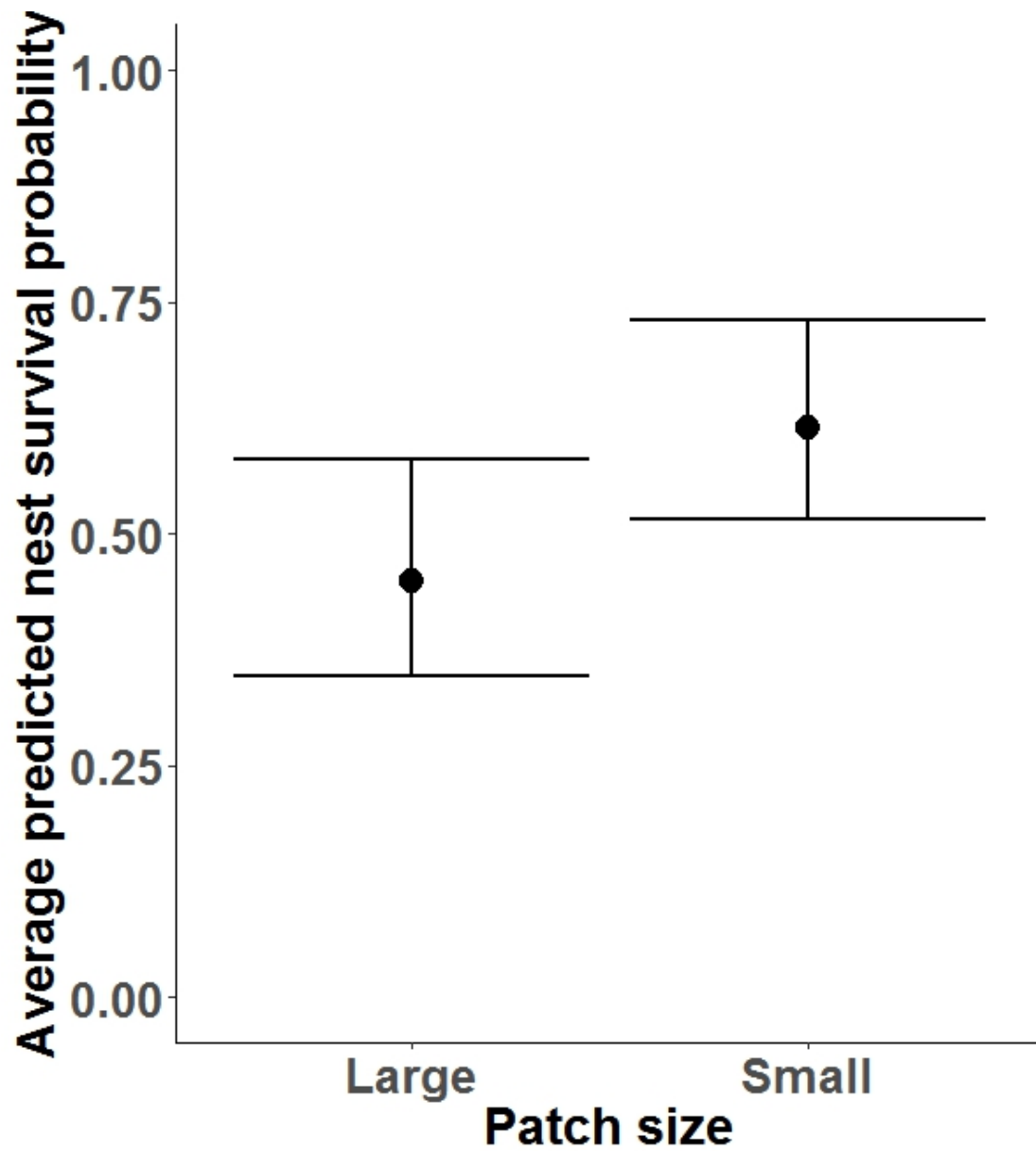
- June: 314
 - 183 survived
 - ~ 58%
- July: 303
 - 146 survived
 - ~48%

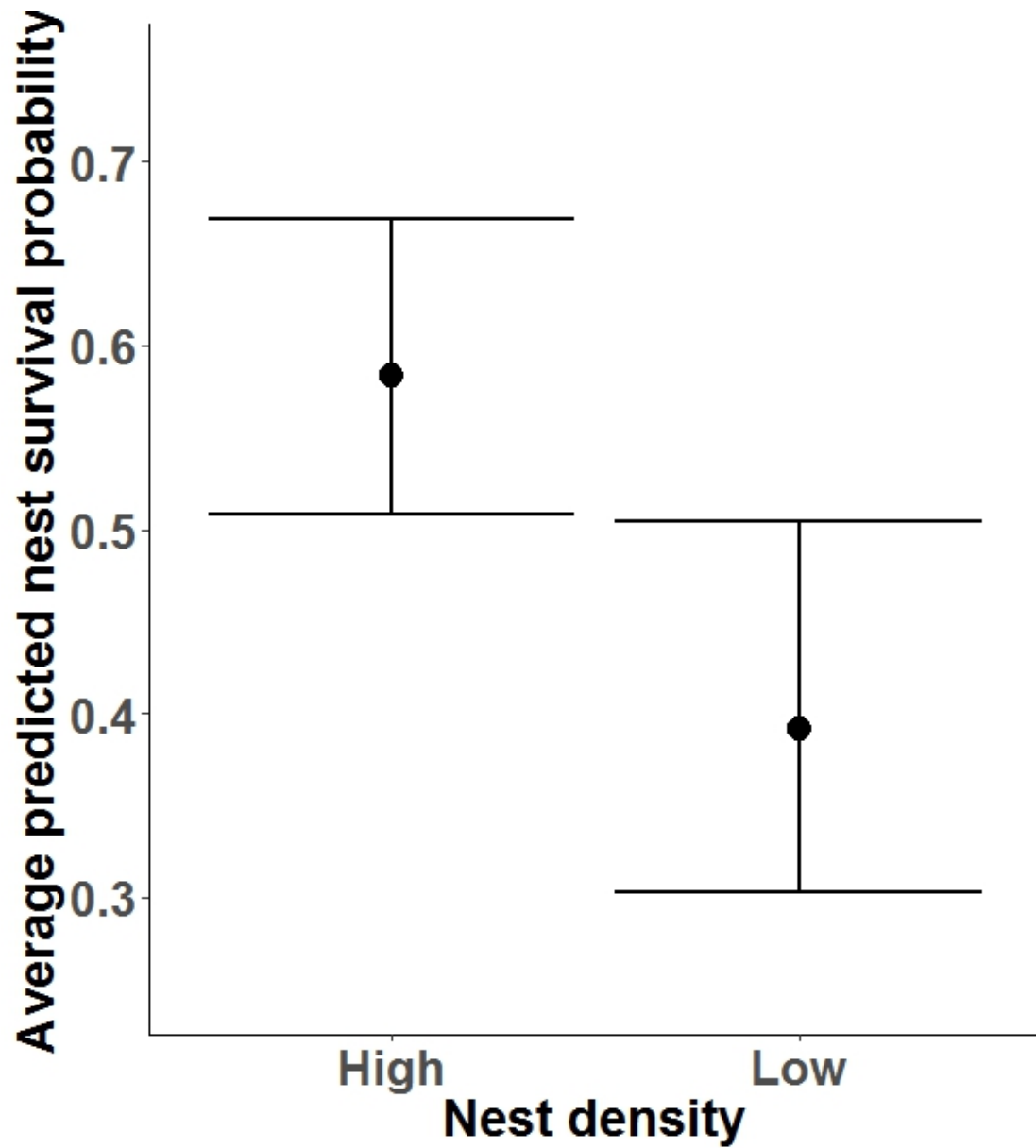


2 trials

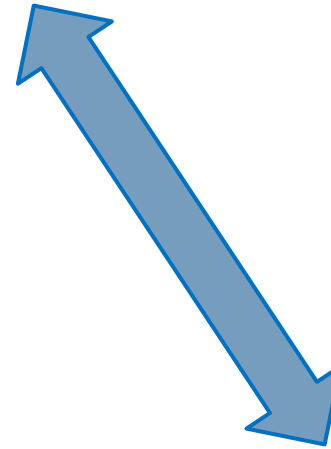
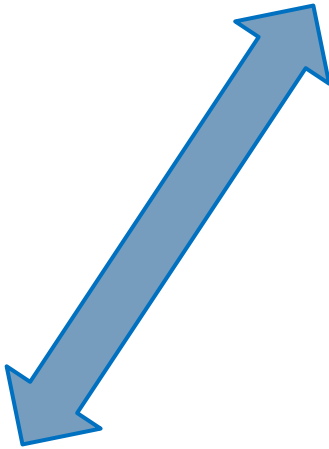
- June: 314
 - 183 survived
 - ~ 58%
- July: 303
 - 146 survived
 - ~48%
- Total: 617
 - 329 survived
 - ~53%







Examine interactions.....



Thank you

Fontaine Lab, Technicians, & Landowners



Questions?

