

Mark R. Herse, MSc

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RESEARCH INTERESTS

My work is focused on understanding how spatial patterns affect ecological processes, with emphasis in population biology and conservation of wild birds.

EDUCATION

MSc, Ecology & Evolutionary Biology (2017)

Division of Biology, Kansas State University, Manhattan, KS

Thesis title: “Landscape ecology of two species of declining grassland sparrows”

Advisor: Dr. Alice Boyle, Assistant Professor

BSc, Biology (2010)

Department of Ecology, Montana State University, Bozeman, MT

Concentration: Wildlife Management & Ecology

RESEARCH EXPERIENCE

MSc Research, Kansas State University, Manhattan, KS (Jan 2015–July 2017)

- Led field crews and point-count bird survey effort across ~50,000-km² study area in Kansas.
- Manipulated land-cover data and measured spatial patterns using ArcMap and FRAGSTATS.
- Developed hierarchical *N*-mixture models for estimating species abundance, and occupancy models for estimating probabilities of species occurrence and site-occupancy dynamics using R.
- Quantified the effects of landscape composition, habitat fragmentation, and rangeland management on space use by five grassland-dependent bird species.
- Collaborated with the U.S. Fish & Wildlife Service and reported to project stakeholders.

PEER-REVIEWED JOURNAL ARTICLES

In review

Herse, M. R., K. A. With, and W. A. Boyle, in review. Core habitat versus total habitat *per se* for conservation of a threatened species along a landscape-fragmentation gradient. *Journal of Applied Ecology*.

Herse, M. R., M. E. Estey, P. J. Moore, B. K. Sandercock, and W. A. Boyle, in revision. Landscape context determines settlement patterns of an enigmatic grassland songbird. *Landscape Ecology*.

Published

- Herse, M. R.** 2016. Diet and behavior of extralimital Western Burrowing Owls (*Athene cunicularia hypugea*) in tallgrass prairie. *Southwestern Naturalist* 61: 341–348.
- Winder, V. L., **M. R. Herse**, L. M. Hunt, A. J. Gregory, L. B. McNew, and B. K. Sandercock. 2016. Patterns of nest attendance by female Greater Prairie-Chickens in northcentral Kansas. *Journal of Ornithology* 157: 733–745.
- Herse, M. R.**, and J. M. Ray. 2014. A review and correction of data on a poorly known leaf litter snake, *Trimetopon slevini* (Dunn, 1940), from Panama, including additional data on defensive behaviours. *Herpetology Notes* 7: 359–361.

PRESENTATIONS

Conference abstracts

- Herse, M. R.**, K. A. With, and W. A. Boyle. 2017. Core versus total habitat area for a declining grassland songbird: bigger is not always better (oral). Meeting of the U.S.-International Association of Landscape Ecology, Baltimore, MD.
- Herse, M. R.**, M. E. Estey, P. J. Moore, and W. A. Boyle. 2016. Landscape context and local disturbance drive within-season site occupancy dynamics of Henslow's Sparrows in Kansas (oral). Kansas Ornithological Society, Garden City, KS.
- Herse, M. R.**, and W. A. Boyle. 2016. What drives habitat selection behavior in a rare and highly mobile grassland bird? (oral) A multi-scale landscape perspective. North American Ornithological Conference, Washington D.C.
- Herse, M. R.**, M. E. Estey, and W. A. Boyle. 2016. Patterns and predictors of site occupancy in declining grassland birds: a multi-scale approach (oral). Kansas Natural Resources Conference, Wichita, KS.
- Herse, M. R.**, M. E. Estey, and W. A. Boyle. 2015. Patterns and predictors of site occupancy in a highly mobile grassland bird: a multi-scale approach (oral). Kansas Ornithological Society, Emporia, KS.
- Herse, M. R.**, V. L. Winder, L. M. Hunt, A. J. Gregory, L. B. McNew, and B. K. Sandercock. 2015. Timing of incubation breaks and predation risk for nesting Greater Prairie-Chickens (poster). International Grouse Symposium, Reykjavik, Iceland.
- Herse, M. R.**, V. L. Winder, L. M. Hunt, A. J. Gregory, L. B. McNew, and B. K. Sandercock. 2015. Timing of incubation breaks and predation risk for nesting Greater Prairie-Chickens (poster). Central Mountains and Plains Meeting of The Wildlife Society, Manhattan, KS.

Seminars (*invited)

- *Herse, M. R.**, M. E. Estey, P. J. Moore, B. K. Sandercock, and W. A. Boyle. 2017. Patterns and drivers of habitat selection by Henslow's Sparrows: a landscape perspective (oral). Landscape Conservation Cooperative Network Webinar Series.

Internal research forums

- Herse, M. R.**, and W. A. Boyle. 2017. Core versus total habitat area for a declining grassland songbird: bigger is not always better (oral). Kansas State University Division of Biology Annual Graduate Research Forum, Konza Prairie Biological Station, KS.

Herse, M. R., and W. A. Boyle. 2016. Relative effects of habitat amount and fragmentation on site occupancy dynamics of a rare and highly mobile grassland bird (oral). Kansas State University Division of Biology Annual Graduate Research Forum, Konza Prairie Biological Station, KS.

Public outreach

Herse, M. R. “Living on the edge: wildlife conservation in fragmented landscapes.” Hands-on game for children and their families, presented at the following public events in Manhattan, KS:

- Science Saturday Road Show with Osher Lifelong Learning Institute and Sunset Zoo, Meadowlark Hills Retirement Community (Feb 2017)
- Grandparent’s Day, Sunset Zoo (Sept 2016)
- Flint Hills Festival, Flint Hills Discovery Center (May 2016)
- Science Saturday, Sunset Zoo (Jan 2016)
- Veteran’s Day, Sunset Zoo (Nov 2015)
- Cub Scout Day, Sunset Zoo (Sept 2015)
- Family Day, Flint Hills Discovery Center (Sept 2015)

Herse, M. R. “How do birds choose habitats? A landscape perspective.” Oral presentation and engaging discussion with the public at “Science on Tap”, Tallgrass Tap House, Manhattan, KS (Jan 2017).

Boyle, W. A., E. J. Williams, and **M. R. Herse.** “How do birds fly?” Hands-on workshop for children and their families at Lee Elementary School STEM Fun Night, Manhattan, KS (Feb 2015).

MERITS

Scholarships

UC Connect Doctoral Scholarship, University of Canterbury and Manaaki Whenua – Landcare Research (2017–2020). NZ\$21,000 per year plus tuition fees.

Awards

US-IALE Presentation Award (2017). For “best graduate student presentation” at the Meeting of the U.S.-International Association of Landscape Ecology, Baltimore, MD. US\$300 plus waiver for the 2018 meeting registration fee.

Kansas Chapter of The Wildlife Society Presentation Award (2016). For “best graduate student presentation” at the Kansas Natural Resources Conference, Wichita, KS. US\$150

Celia White Markum Award (2015). For “best graduate student presentation” at the Annual Meeting of the Kansas Ornithological Society, Emporia, KS. US\$60

Conservation Scholar Award, Friends of Sunset Zoo (2015). Support for research that helps protect ecosystems in Kansas. US\$500

Fellowships

Science Communication Fellow, Portal to the Public and Sunset Zoo, Manhattan, KS (2015–2016). Promoting science and environmental awareness via public outreach and interpretive activities.

Travel grants

Arts & Sciences Research Travel Grant, Kansas State University (received twice, 2015 and 2017).

For travel to the International Grouse Symposium, Reykjavik, Iceland; and the Meeting of the U.S.-International Association for Landscape Ecology, Baltimore, MD. US\$1,400

Biology Graduate Student Association Travel Grant, Kansas State University (2017). For travel to the Meeting of the U.S.-International Association for Landscape Ecology, Baltimore, MD. US\$500

American Ornithologists' Union Student Research Travel Grant (2016). For travel to the North American Ornithological Conference, Washington DC. US\$265

Graduate Student Council Travel Grant, Kansas State University (2015). For travel to the International Grouse Symposium, Reykjavik, Iceland. US\$750

TEACHING EXPERIENCE

Graduate teaching assistant

BIOL 543 Ornithology, Kansas State University (Spring 2016 and 2017)

BIOL 544 Mammalogy, Kansas State University (Fall 2016)

BIOL 201 Organismic Biology, Kansas State University (Fall 2015)

BIOL 198 Principles of Biology, Kansas State University (Spring 2015)

Guest lecturer

BIOL 543 Ornithology, Kansas State University (Spring 2017)

Undergraduate teaching assistant

BIOL 310 Comparative Vertebrate Anatomy, Montana State University (Spring 2010)

SERVICE

Peer-reviewer

The Condor: Ornithological Applications

ADDITIONAL FIELD EXPERIENCE

Field technician

Green Diamond Resource Company, Korbelt, CA (Feb–Oct 2014)

Project: Demographics and conservation of Northern Spotted Owls in northern California forests

- Conducted point-count surveys and off-trail area-searches for Spotted Owls and Barred Owls.
- Located and monitored marked Spotted Owls, nests, and broods.
- Assisted with capturing and banding adult and fledgling Spotted Owls.

Houston Audubon Society, Houston, TX (Oct 2013–Feb 2014)

- Conducted transect surveys for shorebirds and point-count surveys for wading birds.
- Guided volunteer habitat restoration activities.

Kansas State University, Manhattan, KS (Mar.–June 2011 and Feb–Oct 2013)

Project: Effects of rangeland management and wind energy development on Greater Prairie-Chickens

- Captured, banded, and radio-collared prairie-chickens at leks.
- Tracked radio-collared chickens via telemetry; located and monitored nests; radio-tagged chicks.
- Installed and maintained nest video cameras; conducted vegetation surveys around nests.

Archbold Biological Station, Venus, FL (July 2012–Jan 2013)

Project: Demographics and conservation of Red-cockaded Woodpeckers in Florida

- Monitored Red-cockaded Woodpecker subpopulations via re-sight surveys.
- Captured and translocated (inter- and intra-population) adult and fledgling woodpeckers.
- Installed, inspected, and repaired artificial nest cavities; climbed trees using stacking ladders.

Louisiana State University, Baton Rouge, LA (Apr–June 2012)

Project: Effects of BP Deepwater Horizon oil spill on Seaside Sparrow ecology

- Captured, banded, and radio-tagged Seaside Sparrows.
- Tracked radio-tagged sparrows via telemetry; located and monitored nests and broods.
- Operated and navigated outboard motorboats through a network of saltwater bays and marshes.

University of Tennessee, Knoxville, TN (July 2011–Mar 2012)

Project: Seasonal habitat use by Northern Bobwhites on a reclaimed surface coal mine

- Conducted point-count surveys for Northern Bobwhite coveys.
- Captured, banded, and radio-collared adult and juvenile quail.
- Tracked radio-collared quail via telemetry; located and monitored nests and broods.

Casual volunteer

The Long Term Ecological Research Network, Manhattan, KS (2017)

- Captured and banded resident and migratory songbirds at Konza Prairie Biological Station.

Kansas State University, Manhattan, KS (2015 & 2016)

- Conducted re-sight surveys for Grasshopper Sparrows at Konza Prairie Biological Station.

BirdLife France, Charentes-Maritime, France (Jan 2016)

- Conducted count surveys for shorebirds.

Bush Heritage Australia, Charles Darwin Reserve, Western Australia (Nov 2014)

- Captured and banded Bourke's Parrots, honeyeaters, thornbills, gerygones, and fairy-wrens.
- Assisted with capturing and processing microbats, dunnarts, and reptiles.

University of Central Oklahoma, Edmond, OK (Jan 2013)

- Assisted with capturing and banding Black Rails on Bolivar Peninsula, Texas.