

THOMAS V RIECKE

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RESEARCH INTERESTS

My research focuses on the collection and use of long-term demographic data to better understand the interactive impacts of environmental variation, climate, and human actions on the population trends and evolutionary ecology of wild organisms. I use models to quantify the contribution of different demographic components to population growth rates, and seek to work collaboratively across a range of ecological and evolutionary disciplines to address questions relevant to life-history evolution, applied ecology, and conservation decision making.

PROFESSIONAL APPOINTMENTS

Postdoctoral Research Assistant, Swiss Ornithological Institute Population Dynamics Section, Ecology Department Supervisor: Dr. Michael Schaub	2020-
Postdoctoral Research Assistant, University of Nevada, Reno Department of Natural Resources and Environmental Science Supervisor: Dr. Perry J. Williams	2020

EDUCATION

Ph.D., University of Nevada, Reno Graduate Program in Ecology, Evolution, and Conservation Biology Advisor: Dr. James S. Sedinger	2020
M.S., Stephen F. Austin State University Arthur Temple College of Forestry and Agriculture Advisor: Dr. Warren C. Conway	2013
B.A., Austin College Biology, minor in Environmental Studies	2009

GRANTS AND FELLOWSHIPS

Demography, harvest, and abundance of waterfowl populations Riecke TV , Sedinger BS, Williams PJ, Sedinger JS Funded two postdoctoral fellows (Riecke TV & Sedinger BS), undergraduate research, a graduate student (<u>Lohman MG</u>), and a postbaccalaureate research assistant (<u>Ellis SL</u>) to examine spatiotemporal variation in demographic rates and abundance of North American waterfowl.	\$354,000 <i>Delta Waterfowl</i> , 2018-2021
Bonnycastle Fellowship in Wetland and Waterfowl Biology Riecke TV Funded graduate research (Riecke TV) and undergraduate research (<u>Lohman MG</u>) on demographic rates of North American waterfowl.	\$38,500 <i>Institute for Wetland and Waterfowl Research, Ducks Unlimited Canada</i> , 2016-2018

PUBLICATIONS

*denotes an Undergraduate or Postbaccalaureate Research Collaborator

In review or in revision

Riecke TV, Gibson D, Leach AG, Lindberg MS, Schaub M, Sedinger JS (**in revision**) Bayesian mark-recapture-resight-recovery models: increasing user flexibility with the BUGS language. *Ecosphere*.

Riecke TV, Sedinger BS, Arnold TW, Gibson D, Koons DN, Lohman MG*, Schaub M, Williams PJ, Sedinger JS (**in review**) A hierarchical model for jointly assessing ecological and harvest effects on animal demography *Journal of Animal Ecology*.

Riecke TV, Kéry M, Gibson D, Schaub M (**in review**) Leveraging detection information among species in community models of occupancy and abundance. *Methods in Ecology and Evolution*.

Riecke TV, Lohman MG*, Sedinger BS, Arnold TW, Feldheim CL, Koons DN, Rohwer FC, Williams PJ, Sedinger JS (**in revision**) Multicollinearity among demographic drivers affects applied conservation inference. *Journal of Animal Ecology*.

Lohman MG*, **Riecke TV**, Williams PJ, Sedinger JS (**in revision**) Individual heterogeneity drives within- and among-year life-history trade-offs in a long-lived Arctic nesting herbivore. *Ecology and Evolution*.

Sedinger JS, Koons DN, Lindberg MS, **Riecke TV**, Leach AG, Nicolai CA (**in revision**) Targeting of auxiliary markers: implications for population management. *Journal of Wildlife Management*.

Street PA, **Riecke TV**, Williams PJ, Behnke TL, Sedinger JS (**in review**) Estimating young survival and rates of adoption using counts of offspring from a marked parent: minimizing model- and design-based sources of bias. *Ecology and Evolution*.

Koons DN, **Riecke TV**, Boomer GS, Sedinger BS, Sedinger JS, Williams PJ, Arnold TW (**in review**) Lessons to be learned from ecological persistence and forecasting for adaptive management. *Biological Conservation*.

Thompson JM, **Riecke TV**, Daniels BL, Spragens K, Gabrielson M, Nicolai CA, Sedinger BS (**in review**) Survival and cause-specific mortality of American green-winged teal banded on the Yukon-Kuskokwim Delta, Alaska. *Journal of Wildlife Management*.

PUBLISHED (19)

Robinson SG, Gibson D, **Riecke TV**, Fraser J, Bellham HA, DeRose-Wilson A, Karpanty SM, Walker KM, Catlin DH (**2020**) Piping plover population increase after Hurricane Sandy mediated by immigration and reproductive output. *Ornithological Applications*, **122**, duaa041.

Leach AG, **Riecke TV**, Sedinger JS, Ward DH, Boyd WS (**2020**) Mate fidelity improves survival and breeding performance in a long-lived bird. *Journal of Animal Ecology*, **89**, 2290-2299.

Acevedo CR*, **Riecke TV**, Leach AG, Lohman MG*, Williams PJ, Sedinger JS (**2020**) Long-term research and hierarchical models reveal consistent fitness costs of being the last egg in a clutch. *Journal of Animal Ecology*, **89**, 1978-1987.

Van Dellen AW, **Riecke TV**, Leach AG, Nicolai CA, Person BT, Lemons PR, Eicholz MW, Lindberg MS, Schamber JL, Herzog MP, Sedinger JS (**2020**) Body mass dynamics of brood-rearing female black brent during the remigial moult. *Ibis*, **162**, 1175-1185.

Sedinger JS, **Riecke TV**, Street PA, Fischer JB (**2020**) Dynamics of dispersed nesting black brant on the Yukon-Kuskokwim Delta. *Journal of Fish and Wildlife Management*, **11**, 112-120.

- Riecke TV**, Williams PJ, Behnke TL, Gibson D, Leach AG, Sedinger BS, Street PA, Sedinger JS (2019) Integrated population models: model assumptions and inference. *Methods in Ecology and Evolution*, **10**, 1072-1082.
- Sedinger BS, **Riecke TV**, Nicolai CA, Woolstenhulme R, Henry WG, Stewart KS (2019) Experimental harvest regulations reveal that climate, not harvest, drives population change in Nevada wood ducks. *Ecology and Evolution*, **9**, 12701-12709.
- Riecke TV**, Sedinger BS, Williams PJ, Leach AG, Sedinger JS (2019) Estimating correlations among demographic parameters. *Ecology and Evolution*, **9**, 13521-13531.
- Riecke TV**, Conway WC, Haukos DA, Moon JA, Comer CE (2019) Nest survival of black-necked stilts, *Himantopus mexicanus*, on the upper Texas coast. *Waterbirds*, **42**, 261-271.
- Lohman MG*, **Riecke TV**, Acevedo CR*, Person BT, Uher-Koch BD, Schmutz JA, Sedinger JS (2019) Changes in behavior are unable to disrupt a trophic cascade involving a long-lived specialist herbivore and its food plant. *Ecology and Evolution*, **9**, 5281-5291.
- Leach AG, Sedinger JS, **Riecke TV**, Van Dellen AW, Ward DH, Boyd WS (2019) Brood size affects future reproduction in a long-lived bird with precocial young. *The American Naturalist*, **193**, 458-471.
- Sedinger JS, **Riecke TV**, Leach AG, Ward DH (2019) The black brant population is declining based on mark recapture. *Journal of Wildlife Management*, **83**, 627-637.
- Leach AG, Ward DH, Sedinger JS, **Riecke TV**, Hupp JW, Ritchie RJ (2019) Spatial distribution of band recoveries of black brant. *Journal of Wildlife Management*, **83**, 304-311.
- Riecke TV**, Leach AG, Gibson D, Sedinger JS (2018) Parameterizing the robust design in the BUGS language: lifetime carry-over effects of environmental conditions during growth on a long-lived bird. *Methods in Ecology and Evolution*, **9**, 2294-2305.
- Gibson D, **Riecke TV**, Keyes T, Depkin C, Fraser J, Catlin DH (2018) Application of Bayesian robust design model to assess the impacts of a hurricane on shorebird demography. *Ecosphere*, **9**, e02334.
- Leach AG, Van Dellen AW, **Riecke TV**, Sedinger JS, (2017) Does incubation capacity contribute to clutch size constraints in brent geese? *Ibis*, **159**, 588-599.
- Sedinger JS, Van Dellen AW, Leach AG, **Riecke TV** (2017) Ultimate regulation of fecundity in species with precocial young: declining marginal value of offspring with increasing brood size does not explain maximal clutch size in black brent geese. *Oecologia*, **183**, 431-440.
- Riecke TV**, Conway WC, Comer CE, Haukos DA, Moon JA (2015) Baseline blood lead levels of black-necked stilts on the upper Texas coast. *Bulletin of Environmental Contamination and Toxicology*, **95**, 465-469.
- Riecke TV**, Conway WC, Comer CE, Haukos DA, Moon JA (2014) Red imported fire ants, *Solenopsis invicta*, cause black-necked stilt *Himantopus mexicanus* nest abandonment. *Wader Study Group Bulletin*, **121**, 52-53.

TEACHING & MENTORING

Instructor NRES 488, Dynamics and Management of Wildlife Populations	University of Nevada, Reno <i>Fall 2016, Fall 2018</i>
Graduate Teaching Assistant NRES 488, Dynamics and Management of Wildlife Populations	University of Nevada, Reno <i>Fall 2017</i>
Graduate Teaching Assistant FOR 152, Introduction to Wildlife Management	Stephen F. Austin State University <i>Spring 2012, Fall 2012, Spring 2013</i>
Invited Guest Lecturer FOR 111, Introduction to Forestry FOR 255, Vertebrate Natural History FOR 305, Wildlife Techniques FOR 450/550, Advanced Wildlife Habitat Management FOR 454/554, Non-game wildlife ecology	Stephen F. Austin State University <i>2 lectures</i> <i>4 lectures, 4 labs</i> <i>6 lectures, 4 labs</i> <i>6 lectures</i> <i>6 lectures</i>

MENTORING

Undergraduate and Postbaccalaureate Student Mentoring Cheyenne R. Acevedo, Postbaccalaureate Research Collaborator Madeleine G. Lohman, Undergraduate Research Collaborator Sage L. Ellis, Postbaccalaureate Research Collaborator	University of Nevada, Reno <i>Summer 2017 - Summer 2018</i> <i>Summer 2017 - Spring 2019</i> <i>Summer 2019 - present</i>
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JOURNAL REFEREE

Biological Conservation, Ecography, Journal of Animal Ecology, Proceedings of the Royal Society B: Biological Sciences, Ecological Applications, Ornithological Applications, Ecology and Evolution, Journal of Avian Biology, Wildfowl, The American Midland Naturalist, Transactions of the American Fisheries Society, Wildlife Society Bulletin

PRESENTATIONS

*denotes an Undergraduate or Postbaccalaureate Research Collaborator

Invited Seminars

Riecke TV, Acevedo CR*, Hegelbach J, Kéry M, Leach AG, Koons D, Lohman MG*, Sedinger JS, Williams PJ, Schaub M. Bayesian models for Vogelkunde: phenotypic selection, senescence, and mating systems. Swiss Ornithological Institute, Sempach, Switzerland, 30 November 2020.

Invited Presentations

Sedinger BS, **Riecke TV**, Williams PJ, Sedinger JS. Cross-seasonal Atlantic Flyway mallard models. Atlantic Flyway Migratory Bird Technical Sections, Portsmouth, NH, 24 February 2020.

Riecke TV, Sedinger BS, Lohman MG*, Williams PJ, Sedinger JS. Demographic analyses and harvest management of mallards in North America. Atlantic Flyway Migratory Bird Technical Sections, Portsmouth, NH, 24 February 2020.

Riecke TV, Sedinger BS, Lohman MG*, Williams PJ, Sedinger JS. Demographic analyses and harvest management of mallards in North America. Assessing Waterfowl Population Dynamics & Harvest, Roseville, CA, 23 January 2020.

Lohman MG*, **Riecke TV**, Sedinger JS, Williams PJ. Spatial variation in mallard survival in the Prairie Pothole Region. Assessing Waterfowl Population Dynamics & Harvest, Roseville, CA, 23 January 2020.

Riecke TV, Williams PJ, Behnke TL, Gibson D, Leach AG, Sedinger BS, Street PA, Sedinger JS. Integrated population models: model assumptions and inference. The Wildlife Society's 26th Annual Conference, Reno, NV, 2 October 2019.

Sedinger BS, **Riecke TV**, Sedinger JS, Rohwer FC, Feldheim CL, Williams PJ. Rethinking harvest management from a life-history perspective. The Wildlife Society's 26th Annual Conference, Reno, NV, 3 October 2019.

Sedinger JS, **Riecke TV**, Sedinger BS, Blomberg EJ. Longitudinal data and life-history theory: how should we guide the future of gamebird management? The Wildlife Society's 26th Annual Conference, Reno, NV, 3 October 2019.

Riecke TV, Sedinger BS, Arnold TW, Feldheim CL, Koons DN, Rohwer FC, Williams PJ, Sedinger JS. Abundance drives cause-specific teal mortality. 8th North American Duck Symposium, Winnipeg, MB, 30 August 2019.

Sedinger BS, **Riecke TV**, Arnold TW, Feldheim CL, Lohman MG*, Rohwer FC, Alisauskas RT, Koons DN, Sedinger JS, Williams PJ. Cross-seasonal models reveal evidence for density-dependence, climate-mediated survival, and harvest compensation in mallards. Winnipeg, MB, 30 August 2019.

Lohman MG*, **Riecke TV**, Sedinger JS, Williams PJ. Spatiotemporal variation in waterfowl demography, 8th North American Duck Symposium, Winnipeg, MB, 30 August 2019.

Sedinger JS, **Riecke TV**, Sedinger BS. Waterfowl population models: new biological findings and harvest management. 8th North American Duck Symposium, Winnipeg, MB, 30 August 2019.

Riecke TV, Sedinger JS. Integrated population models: bias and inference. 7th North American Duck Symposium, Annapolis, MD, 4 February 2016.

Arnold TW, Clark RG, Koons DN, Osnas EE, **Riecke TV**, Schaub M, Weegman MD. Integrated population models to inform waterfowl ecology and conservation: pitfalls and promises. 7th North American Duck Symposium, Annapolis, MD, 4 February 2016.

Contributed Presentations

Riecke TV, Sedinger BS, Lohman MG*, Williams PJ, Sedinger JS. How well do harvest management models work? Nevada Chapter of the Wildlife Society Science Symposium, Reno, NV, 4 March 2020.

Lohman MG*, **Riecke TV**, Williams PJ. Examining spatiotemporal variation in mid-continent mallard demography. Nevada Chapter of the Wildlife Society Science Symposium, Reno, NV, 4 March 2020.

Riecke TV, Sedinger BS, Sedinger JS. Estimating process correlations with capture-mark-recovery and capture-mark-recapture data: understanding life-history trade-offs in Pacific black brant. 14th North American Arctic Goose Conference, Lincoln, NE, 16 March 2018.

Riecke TV, Leach AG, Sedinger JS. Climatic oscillations drive selection in a long-lived specialist herbivore. 14th North American Arctic Goose Conference, Lincoln, NE, 15 March 2018.

Acevedo CR*, **Riecke TV**, Leach AG, Lohman MG*, Sedinger JS. Are all eggs created equal: hierarchical models reveal fitness constraints in a long-lived bird. NV Chapter of the Wildlife Society, Reno, NV, 22 February 2018.

Lohman MG*, **Riecke TV**, Acevedo CR*, Sedinger JS. Changes in behavior are unable to disrupt a trophic cascade involving a long-lived specialist herbivore and its food plant. NV Chapter of the Wildlife Society, Reno, NV, 22 February 2018.

Riecke TV, Sedinger BS, Sedinger JS. An accidental harvest experiment. NV Chapter of the Wildlife Society, Reno, NV, 22 February 2018.

Riecke TV, Leach AG, Van Dellen AW, Sedinger JS. Using integrated population models to inform management of Pacific black brant populations on the Yukon-Kuskokwim River Delta. The Western Section of the Wildlife Society Annual Meeting, Reno, NV, 10 February 2017.

Street PA, **Riecke TV**, Sedinger JS. Minimizing model and design based sources of bias when estimating juvenile survival from counts of offspring with a marked parent. The Western Section of the Wildlife Society Annual Meeting, Reno, NV 10 February 2017.

Street PA, **Riecke TV**, Sedinger JS. Minimizing model and design based sources of bias when estimating juvenile survival from counts of offspring with a marked parent. The Wildlife Society's 23rd Annual Conference, Raleigh, NC, 19 October 2016.

Sedinger JS, Leach AG, Van Dellen AW, **Riecke TV**, Ward DH, and Boyd WS. Cross-seasonal demographic effects and fitness in black brant. North American Ornithological Congress, Washington, DC, 18 August 2016.

Riecke TV, Leach AG, Sedinger JS. Long-term effects of nest predation on future reproductive investment. North American Ornithological Congress, Washington, DC, 20 August 2016.

Riecke TV, Leach AG, Sedinger JS, Ward DH, Boyd WS. How do long-lived waterfowl respond to latitudinal fitness variation? 7th North American Duck Symposium, Annapolis, MD, 4 February 2016.

Leach AG, Sedinger JS, **Riecke TV**, Ward DH, Boyd WS. Probability of mate change and its effects on demographic rates of black brant. 7th North American Duck Symposium, Annapolis, MD, 4 February 2016.

Riecke TV, Leach AG, Sedinger JS. 2015. Senescence, heterogeneity, and population age distributions affect population viability in long-lived birds. American Ornithologists Union (133rd Stated Meeting) and Cooper Ornithological Society (85th Stated Meeting) Joint Meeting, Norman, OK, 1 August 2015.

Riecke TV, Leach AG, Sedinger JS, Ward DH, Boyd WS. How do long-lived birds respond to latitudinal fitness variation. American Ornithologists Union (133rd Stated Meeting) and Cooper Ornithological Society (85th Stated Meeting) Joint Meeting, Norman, OK, 31 July 2015.

Leach, AG, Sedinger JS, **Riecke TV**, Ward DH, Boyd WS. Effects of pair-bond dynamics on rates of survival and breeding in adult Black Brant. American Ornithologists Union (133rd Stated Meeting) and Cooper Ornithological Society (85th Stated Meeting) Joint Meeting, Norman, OK, 31 July 2015.

Riecke TV, Leach AG, Sedinger JS. Latent effects of initial maternal investment and quality on pre-fledging survival in black brant. 13th North American Arctic Goose Conference, Winnipeg, MB, 15 April 2015.

Leach AG, Sedinger JS, **Riecke TV**, Ward DH, Boyd WS. 2015. Effects of mate quality and pair-bond dynamics on rates of survival and breeding in black brant. 13th North American Arctic Goose Conference, Winnipeg, MB, 15 April 2015.

Riecke TV, Gibson D, Street PA, Conway WC, Sedinger JS. Modelling ungulate demography from count data using modified open N-mixture models. Nevada Chapter of the Wildlife Society, Reno, NV, 12 February 2015.

Riecke TV, Leach AG, Sedinger JS. Reproductive investment and success indicate senescence and individual heterogeneity in black brant. Western Section of the Wildlife Society Annual Meeting, Santa Rosa, CA, 28 January 2015.

Riecke TV, Conway WC, Comer CE, Haukos DA, Moon JA. Causes of black-necked stilt nest failure at Anahuac National Wildlife Refuge, Texas Chapter of The Wildlife Society 49th Annual Meeting, Houston, TX, 22 February 2013.

Riecke TV, Conway WC, Comer CE, Haukos DA, Moon JA. Blood lead levels of black-necked stilts on the Texas Chenier Plain National Wildlife Refuge Complex. Texas Chapter of The Wildlife Society, 49th Annual Meeting, Houston, TX, 21 February 2013.

Riecke TV, Conway WC, Comer CE, Haukos DA, Moon JA. Nest success and nest site selection of black-necked stilts on the Texas Chenier Plain National Wildlife Refuge Complex. Texas Chapter of The Wildlife Society, 48th Annual Meeting, Fort Worth, TX, 24 February 2012.

Riecke TV, Conway WC, Comer CE, Haukos DA, Moon JA. Nest success and nest site selection of black-necked stilts on the Texas Chenier Plain National Wildlife Refuge Complex. Texas Chenier Plain National Wildlife Refuge. Anahuac, TX, 17 February 2012.

Riecke TV. The status and distribution of pileated woodpeckers in north central Texas. Austin College Undergraduate Biology Seminar, Sherman, TX, 5 February 2009.

Contributed Posters

Riecke TV, Gibson D, Kéry M, Schaub M. Leveraging detection information among species in community models of occupancy and abundance. EURING Analytical Meeting and Workshop, Québec City, PQ, Canada, 9 June 2021.

Lohman MG*, **Riecke TV**, Williams PJ. Examining spatiotemporal variation in waterfowl demography. The Wildlife Society's 26th Annual Conference, Reno, NV, 1 October 2019.

Acevedo CR*, **Riecke TV**, Leach AG, Lohman MG*, Sedinger JS. Are all eggs created equal: hierarchical models reveal fitness constraints in a long-lived bird. 14th North American Arctic Goose Conference, Lincoln, NE, 14 March 2018.

Lohman MG*, **Riecke TV**, Acevedo CR*, Sedinger JS. Changes in behavior are unable to disrupt a trophic cascade involving a long-lived specialist herbivore and its food plant. 14th North American Arctic Goose Conference, Lincoln, NE, 14 March 2018.

Riecke TV, Leach AG, and Sedinger JS. Integrated population models: bias and inference. EURING Analytical Meeting and Workshop, Barcelona, Spain, 5 July 2017.

Riecke TV, Leach AG, Sedinger JS. Parameterizing the robust design in a Bayesian framework: integrating data to estimate violation of the closure assumption. EURING Analytical Meeting and Workshop, Barcelona, Spain, 5 July 2017.

Whitson MD, **Riecke TV**, Conway WC, Haukos DA, Moon JA, Walther P. Waterfowl identification skills by duck hunters on the upper Texas coast. 7th North American Duck Symposium, Annapolis, MD, 4 February 2016.

Riecke TV, Leach AG, Sedinger JS. Do individual heterogeneity and age structure limit the reproductive potential of goose populations? 13th North American Arctic Goose Conference, Winnipeg, MB, 15 April 2015.

Riecke TV, Leach AG, Sedinger JS. Effects of laying order and egg volume on black brant apparent pre-fledging survival rates. Western Section of the Wildlife Society Annual Meeting, Santa Rosa, CA, 28 January 2015.

Riecke TV, Moon JA, Haukos DA, Sedinger JS, Conway WC, Walther PS. An integrated population model for mottled ducks in Texas: harvest, habitat, and survival. Western Section of the Wildlife Society Annual Meeting, Santa Rosa, CA, 28 January 2015.

Riecke TV, Conway WC, Comer CE, Haukos DA, and Moon JA. Lead exposure and nesting ecology of black-necked stilts on the upper Texas coast. Bright Ideas Conference, Stephen F. Austin State University, Nacogdoches, TX, 11 April 2013.

Riecke TV, Conway WC, Comer CE, Haukos DA, Moon JA. Nest success and nest site selection of black-necked stilts on Anahuac National Wildlife Refuge. Bright Ideas Conference, Stephen F. Austin State University, Nacogdoches, TX, 11 April 2012.

RELEVANT SKILLS

Undergraduate and graduate student mentoring and training
Demographic and spatial data analysis and methods development
Proficient in R & L^AT_EX
Avian capture and handling
Proficient in logistics and risk management at remote research locations
Research experience in sub-tropical, temperate, and arctic ecosystems

REFERENCES

Dr. James S. Sedinger

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