Charles B. van Rees

EDUCATION

- Ph.D., Biology (Ecology, Evolution, and Behavior), Tufts University Awarded May 2018
 Certificate in Water Resources Systems, Science and Society
 Interdisciplinary Traineeship in Water Diplomacy
- **B.A.**, Ecology, **B.A.**, Environmental Science, *summa cum laude* with honors, Connecticut College 2010 **Minor:** Spanish; **Certificate** in Conservation Biology

AWARDS & HONORS

2021	Young Author Award, The Society of Population Ecology
2018	Best Student Paper, The Waterbird Society
2017	Certificate of Commendation for Dedication & Service to Hawaiian Conservation (House
	of Representatives, State of Hawai'i)
2016	Tufts University Undergraduate Mentoring and Teaching Award
2016	1 st Place in Research Talks, Tufts Graduate Student Research Symposium
2016	Honorable Mention – North American Ornithological Congress Best Student Presentation
2010	Finalist, Oakes and Louise Ames Prize for Outstanding Honors Thesis
2010	Connecticut College Winthrop Scholar
2010	Helen F. Mathieson Prize for Excellence in Conservation Biology
2010	Barbara Shattuck Kohn Prize for Excellence in Environmental Studies
2009	Sibyl A. Houseman Prize for Excellence in Biology
2006-10	Dean's High Academic Honors, Connecticut College

GRANTS & FELLOWSHIPS

2022	(\$2,000) Archbold Biological Station Visiting Scholar Fellowship
2021	(\$2,600) American Ornithological Society Postdoctoral Research Grant
2020	(\$51,000) Northwest Climate Adaptation Science Fellowship
2019	(\$35,000) USFWS Partners Grant (as ecologist for Livable Hawaii Kai Hui)
2018	(\$22,956) Fulbright Early Career Scholar Award
2017	(\$300) Hawaii Conservation Alliance Student Scholarship Program
2016	(\$5,280) Tufts Institute for the Environment Interdisciplinary Research Grant
2016	(\$25,000) Disney Conservation Fund Annual Conservation Grant
2016	(\$1,000) Wilson Ornithological Society Paul A. Stewart Research Grant
2016	(\$1,000) Sigma Xi Grants-in-Aid of Research
2015	(\$5,690) Tufts Institute for the Environment Graduate Research Fellowship
2015	(\$3,000) Tufts Institute for the Environment Graduate Research Grant
2014-21	(\$14,550) Nuttall-Blake Fund Research Grant
2014	(\$1,512) Tufts Graduate School of Arts & Sciences Research Competition
2013	(\$5,900) Tufts Institute for the Environment Graduate Research Fellowship
2013	(\$1,200) Tufts Institute for the Environment Student Travel Grant
2013	(\$1,000) Pacific Coast Joint Venture Invited Speaker Travel Support
2012	(\$56,000) NSF IGERT Water Diplomacy Fellowship at Tufts University
2010	(\$3,000) Mellen Environmental Studies Research Grant
2008-2010	(\$3,500) Undergraduate Research Fellowship, Goodwin-Niering Center for Conservation
	Biology and Environmental Studies

RESEARCH AND PROFESSIONAL EXPERIENCE

Odum School of Ecology, University of Georgia Postdoctoral Research Scientist Coordinating multi-project collaborative research initiative on nature-based in Synthesizing and modeling impacts of water infrastructure on biodiversity at	
Flathead Lake Biological Station, University of Montana Postdoctoral Research Scientist Designed analytical pipeline for predicting spread risk for aquatic invasive sp Coordinated an inter-agency collaborative research team at the state and nation	Polson, MT Fall 2019 – Spring 2021 becies
Department of Wetland Ecology, Estación Biológica de Doñana Fulbright Early Career Scholar Fai Investigated effects of water management on space use of migratory waterbir Analyzed time-series data on impacts of flooding on waterbird nesting pattern	
Department of Biology, Tufts University Postdoctoral Researcher Quantitatively assessed extinction risk for two candidate species for down-liss Provided actionable knowledge for improving habitat management among m	6 6
Department of Biology, Tufts University Ph.D Candidate Studied the effects of wetland loss, climate change and connectivity on the H Designed new frameworks for integrating ecological science into sustainable	
Cross-Realm Conservation Team, Center for Large Landscape Conservation Visiting Conservation Scientist Investigated cross-realm solutions for protecting freshwater & terrestrial ecos Convened scientists and stakeholders to guide future conservation decision-m	
 Shorebird Monitoring Program, Trustees of Reservations Wildlife Technician Monitored populations and nesting behavior of two threatened shorebird spec Performed active predator management and nest protection based on published 	
 Koenig Lab, Cornell Laboratory of Ornithology Field Technician Collected behavioral data for long-term research on cooperative breeding wo Studied oak mast phenology and nesting of dependent bird species 	Carmel Valley, CA Fall 2011 – Spring 2012 odpeckers
Avian Ecology Lab, Archbold Biological Station Avian Ecology Intern Wi Conducted extensive field surveys, observations, and monitoring of a threater Trapped, banded, and collected blood samples from birds for ongoing conser	A
Shrubland Bird Team, National Audubon Society Field Research Assistant Captured, banded, and counted declining shrubland birds to inform habitat m Surveyed and collated habitat data and reviewed literature on rates of cowbird	
Sea Turtle Conservation Program, WIDECAST Costa Rica Research Assistant & Volunteer Coordinator Tagged, measured, and monitored nesting female leatherback Sea Turtles on a c Led nightly patrols to protect endangered nesting turtles Translated between local staff, volunteers, and the public	Gandoca, Costa Rica Summer 2009 ritical nesting beach

PEER-REVIEWED PUBLICATIONS(* - Shared First Authorship; †- Student Mentee co-author)

van Rees, C.B., Elphick, C.S., and Reed, J.M. *in press*. Evaluating the potential de-listing of two endangered Hawaiian waterbirds using population viability analysis and Bayesian hierarchical models. *Avian Conservation and Ecology*.

van Rees, C.B., Naslund, L., Hernandez-Abrams, D.D., McKay, S.K., Woodson, C.B., Rosemond, A., McFall, B., Altman, S., and Wenger, S.J. *in press*. A Holistic Monitoring Approach for Natural Infrastructure. *Science of the Total Environment*.

van Rees, C.B., Hand, B.K., Bargeron, C., Carter, S.C. et al., *in press*. A Framework to Integrate Innovations in Invasion Biology Science for Proactive Management. *Biological Reviews*.

[†]*Howard, L., *van Rees, C.B., Dahlquist, Z., Luikart, G., and Hand, B.K. *in press*. A Review of Invasive Species Reporting Apps for Citizen Science and Opportunities for Innovation. *NeoBiota*.

[†]Carter, S., **van Rees, C.B.,** Hand, B.K., Muhlfeld, C., Luikart, G., and Kimball, J.S. 2022. Testing a machine learning workflow for aquatic invasive species on Rainbow trout (*Oncorhynchus mykiss*) in Northwest Montana. *Frontiers in Big Data* 4.

*Leigh, D.M., *van Rees, C.B., Milette, K.L., et al. 2021. Opportunities and challenges of macrogenetic studies. *Nature Reviews Genetics* 22(12): 791-807.

van Rees, C.B., Aragonés, D., Bouten, W., Bustamente, J., and Green, A.J. 2021. Dynamic space use of Andalusian rice fields by Lesser Black-backed Gulls (*Larus fuscus*) is driven by flooding pattern. *IBIS* (online early access).

Paz-Vinas, I., Jensen, E.L., Bertola, L.D., Breed, M.F., Hand, B.K., Hunter, M.E., Kershaw F., Leigh D.M., Luikart, G., Mergeay, J., Miller, J.M., van Rees, C.B., Segelbacher, G., Hoban, S. 2021. Macrogenetic studies must not ignore limitations of genetic markers and scale. *Ecology Letters* 24(6): 1282-1284.

van Rees, C.B., [†]Muñoz, M.A., Cooke, S.C., and Reed, J.M. 2021. Morphometric differences in an isolated, island-endemic subspecies of the Common gallinule (*Gallinula galeata*). *Pacific Science* 74(4): 345-364.

van Rees, C.B., Jähnig, S.C., et al., 2021. Safeguarding Freshwater Life Beyond 2020: Recommendations for the new Global Biodiversity Framework from the European Experience. *Conservation Letters* 14(1): e12771.

Gormally, B.M.G., **van Rees, C.B.**, Bowers, E., Reed, J.M., and Romero, L.M. 2020. Feather corticosterone does not correlate with environmental stressors or body condition in an endangered waterbird. *Conservation Physiology* 8(1): coaa125.

van Rees, C.B., Surya, G., and Reed, J.M. 2020. Multiple Sources of Evidence for density dependence in the endangered Hawaiian stilt (*Himantopus mexicanus knudsenii*). *Population Ecology* 62: 207-219.

van Rees, C.B., Rozek, J.C., Garcia, G., and J.M. Reed 2019. Ecological Stakeholder Analogs as intermediaries between freshwater biodiversity conservation and sustainable water management. *Environmental Policy and Governance* 29.4: 303-312.

Cooke, S.C., Haskell, L.E., **van Rees, C.B.**, and Fessl, B. 2019. A Review of the Introduced Smoothbilled Ani (*Crotophaga ani*) in Galápagos. *Biological Conservation*. 229:38-49.

van Rees, C.B. 2018. Wetland conservation in Hawaii and the need for flagship species. *Elepaio* 78: 37-41.

van Rees, C.B. and J.M. Reed. 2018. The potential effects of habitat connectivity, management and sea level rise on the extinction risk of an endangered waterbird in a fragmented island landscape. *PeerJ* 6: e4990.

van Rees, C.B., Reed, J.M., Wilson, R.E., Underwood, J.G., and S.A. Sonsthagen 2018. Landscape genetics implicates stream and drainage infrastructure as corridors in the dispersal of an endangered wetland bird. *Ecology and Evolution* 8: 8328-8343.

van Rees, C.B., et al. 2018. Estimation of vital rates for the Hawaiian gallinule, a cryptic, endangered waterbird. *Journal of Fish and Wildlife Management* 9:117-131.

van Rees, C.B., Reed, J.M., Wilson, R.S., Underwood J.G., and S.A. Sonsthagen. 2018. Small-scale genetic structure in an endangered wetland specialist: possible effects of landscape change and population recovery. *Conservation Genetics* 19:129-142.

van Rees, C.B. and J.M. Reed 2015. Water Diplomacy from a Duck's Perspective: Wildlife and Ecosystems as stakeholders in Water Management. *Journal of Contemporary Water Research and Education* 155:28-42.

van Rees, C.B. and J.M. Reed 2014. Wetland Loss in Hawai`i since human settlement. *Wetlands* 32:335-350.

PEER-REVIEWED BOOK CHAPTERS

van Rees, C.B., Rozek, J.C., and Garcia, G. 2019. Confronting the Natural Domain: Strategies for Addressing Ecology and Conservation in Complex Water Management Challenges. In: Interdisciplinary Collaboration for Water Diplomacy: Problem-Driven Research and Practice. (Islam, S. and Smith, K., Eds.). *Routledge Press*.

Burgio, K.R., **van Rees, C.B.**, Block, K.E., Pyle, P., Patten, M.A., Spreyer, M.F. and E.H. Bucher 2016. Monk Parakeet (Myiopsitta monachus), In: The Birds of North America (P.G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology.

PENDING PUBLICATIONS (* - Shared First Authorship)

McKay, S.K., Wenger, S.J., van Rees, C.B., Bledsoe, B.P., and Bridges, T.S. *in review*. Jointly advancing infrastructure and biodiversity conservation. *Nature Sustainability*.

van Rees, C.B. *in prep*. Human-Environment Water Conflict and the Need for a New Approach to Water and Wildlife in the Anthropocene. Planned submission to *Global Change Biology*

van Rees, C.B., Chambers, M., Buhr, D., Mansur, A., Suedel, B., and Nibbelink, N. *in prep*. A Conceptual Model for Multi-criterion Spatial Prioritization of Levee Setbacks. Planned submission for *Water Resources Research*.

OTHER PUBLICATIONS

van Rees, C.B. and Kawasaki, M.T. 2020. Restoring Hawaii's wetlands is caring for our history, culture. Honolulu Star Advertiser, February 2020.

Reilly, E. and **van Rees, C.B.** 2018. Urban wetlands play key role in sustaining communities. Honolulu Star Advertiser, January 2018.

Creech, T., McClure, M., and **van Rees, C.B.** 2018. A Conservation Prioritization Tool for the Missouri Headwaters Basin. Center for Large Landscape Conservation, Bozeman, MT.

van Rees, C.B. 2017. Disney Conservation Fund Grant to Protect Endangered `Alae `Ula. *Kolea* 67:9. Conservation Council for Hawaii.

van Rees, C.B. 2015. Kokua needed to track the elusive `Alae `Ula. *Kolea* 65:5. Conservation Council for Hawaii.

SELECTED INVITED TALKS (10 of >40)

van Rees, C.B. 2019. Saving Hawaii's Swamp Chicken: The Conservation story of 'Alae 'Ula. Flathead Audubon Society Lecture Series, Kalispell, MT.

van Rees, C.B. 2019. Bridging conservation research and water security post-2020. EU Biodiversity Strategy Post-2020 Advisory Meeting Ghent, Belgium.

van Rees, C.B. 2019. Conserving Nature on a hot, crowded planet: Lessons learned from the Belgian gulls of Andalusia. Fulbright Spain 2019 Mid-Year Seminar. Valencia, Spain.

van Rees, C.B. 2018. Saving Hawaii's Swamp Chickens: The Impacts of Landscape and Climate Change on the Hawaiian gallinule. The Wildlife Society & Montana State University Department of Ecology Summer Lecture Series, Bozeman, MT.

van Rees, C.B. 2018. Marsh Birds in Paradise: The Ecology and Conservation of the Hawaiian Gallinule. Nuttall Ornithological Club Lecture Series, Harvard University, Cambridge, MA.

van Rees, C.B. 2017. Tracking the Fire Thief: A Case Study in American Connectivity Conservation. British Trust for Ornithology Seminar, Thetford, UK.

Creech, T. and **C.B. van Rees** 2017. Wilderness to Waikiki: Case Studies in American Connectivity Conservation. Cambridge Conservation Forum Lecture, David Attenborough Building, Cambridge, UK.

van Rees, C.B. 2015. The Movement Mystery of the Hawaiian gallinule. University of New Hampshire, Department of Biology, Durham, NH.

van Rees, C.B. 2013. Hawaiian Wetlands—A Historical Perspective. Pacific Coast Joint Venture Hawaiian Wetlands and Waterbird Workshop, Kailua, HI.

Ellmore, G.S. and **C.B. van Rees**. 2012. Vietnam on the Biodiversity stage: Biodiversity Hotspots and Conservation Biology. Hanoi University of Science, Hanoi, Vietnam.

SELECTED CONFERENCE PRESENTATIONS (10 of >50)

van Rees, C.B., Aragonés, D., Bouten, W., Thaxter, C., Ross-Smith, V.H., Steinen, E., Bustamante, J., and Green, A.J. 2020. Temporally Dynamic Resource Use of Overwintering Waterbirds During an Agricultural Cycle in Southern Spain. North American Ornithological Conference VII (Virtual).

van Rees, C.B., Surya, G., and Reed, J.M. 2020. Multiple Sources of Evidence for Density Dependence in the Endangered Hawaiian Stilt. North American Ornithological Conference VII (Virtual).

van Rees, C.B., Hand, B.K. *et al.* 2020. Integrating underutilized technologies to predict the spread of aquatic invasive species. American Fisheries Society, Montana Chapter Conference. Kalispell, MT.

van Rees, C.B. and Reed, J.M. 2018. The impacts of climate change and dispersal behavior on population viability of an endangered Hawaiian waterbird. 27th Annual International Ornithological Congress, Vancouver, BC.

van Rees, C.B., et al. 2018. Navigating a Paved Paradise: Landscape Genetics of an Endangered Hawaiian Waterbird. *Winner of Best Student Paper*. 42nd Annual Meeting of the Waterbird Society. Vancouver, BC.

van Rees, C.B., Reed, J.M., Wilson, R.E., Underwood, J., Nadig, A., and S.A. Sonsthagen. 2018. Landscape genetics of endangered Hawaiian waterbirds. Student Conference on Conservation Science, University of Cambridge, Cambridge, UK.

van Rees, C.B., et al.. 2017. Marsh birds in urban lands: Do stream corridors explain population connectivity? Student Conference on Conservation Science, American Museum of Natural History, New York City.

van Rees, C.B., Kawasaki, M.T., Underwood, J., Sonsthagen, S.A., Paxton, E.H., and J.M. Reed 2016. Ke lele manu o ka wai: Movement Ecology and Conservation of Hawaiian Waterbirds. IUCN World Conservation Congress 2016, Honolulu, Hawaii.

van Rees, C.B., Reed, J.M., Wilson, R.E., Underwood, J., Nadig, A., and S.A. Sonsthagen 2016. The movement ecology of an endangered rallid: The Hawaiian gallinule. North American Ornithological Congress VI, Washington, D.C.

MENTORING

2019-2022	Sean C. Carter, M.S. Forestry, University of Montana (expected May 2022)
2019-2022	Leif Howard, B.S. Wildlife Biology, University of Montana (2020)
2018-2021	Lukanicole Zavas, M.S. Nat. Resources, University of Hawai'i at Mānoa (2020)
2017-2018	Matthew Pedrotti, B.S. Botany, Humboldt State University (2018)
2016-2021	M. Alejandra Muñoz, B.S. Ecology, Tufts University (2018)
2015-2017	Annie Miller, B.S. Ecology, Tufts University (2016)
2015	Tiana Bolosan, B.S. Envi. Science, University of Hawai'i at Hilo (2016)
2014-2020	Martha Kawasaki, M.S. Tropic. Conserv., University of Hawai'i at Hilo (2020)

OUTREACH & MEDIA COVERAGE

2022 TED_x **Speaker**, "A Glance through Nature's Playbook". TED_x Bozeman, April 2022.

Featured Guest, <u>Anchor & Flame Podcast</u>. "<u>Conversation with Naturalist Dr. Charles van Rees</u>" December 2021.

Featured Guest, <u>Podsongs Podcast</u>. "<u>Charles van Rees on invasive species (ft. Musical guests</u> <u>Creature Comfort</u>" November 2021.

Featured Guest, <u>Rewildology Podcast</u>. "<u>The (Im)Balance Between Life & Water with Charles</u> <u>van Rees, PhD</u>" September 2021.

Guest Scientist, SciComm Mondays Science Livestream with Nicole Wood.

Featured Guest, Maunalua: East Oahu Communities Working Together.

Episodes aired September 2014, August and September 2015, June 2016.

Featured in "<u>Campbell's Coup</u>", Hawaii Magazine, September/October 2014 edition by Mary Vorsino.

Science Storyteller, The Story Collider.

Authored and performed science story about field work in ecology & conservation. Recorded live at the Oberon theatre in Cambridge, MA and <u>podcast</u> in March 2014.

LEADERSHIP, VOLUNTEERING & SERVICE

LEADERSHIP, VOLUNTEERING & SERVICE	
Founder & Lead Author , The <u>Gulo in Nature</u> Blog Wrote weekly blog posts on naturalist tips, outdoor recreation, ecology, conservation, and environmental careers for a nature education	Athens, GA Winter 2022-Present blog.
Scientific Advisor, 'Alae 'ula Recovery Working Group Co-produced a recovery & reintroduction plan for an endangered waterbird	Kapa'a, HI Summer 2021-Present
Facilitated grant development among collaborators from state, federal &	private agencies
Executive Board Member, <u>K9 Conservationists</u> Provided scientific consultations for organization mission and directives Researched and identified grant funding and outreach opportunities	Missoula, MT Spring 2021-Present
Executive Board Member, Hawai'i Islands Conservation Collective Provided scientific expertise on endangered bird ecology Deliberated and voted upon organizational mission, goals, and actions	Honolulu, HI Winter 2020 - Present
Co-Producer & Co-Host , <u>The Nature Guys Podcast</u> Joined naturalist team sharing nature topics with >5,000 listeners bimontl Co-produced episode mini-series on water and the environment featuring	•
Lead Ecologist, <u>Livable Hawaii Kai Hui</u> Drafted conservation plan for biodiversity on managed properties Spearheaded and organized applications for wildlife conservation grants Directed community science research programs and managed databases	Honolulu, HI Summer 2015 - Present
Spatial Analyst, The Trustees of Reservations Helped resident biologists manage spatial datasets and ArcMAP Collated and organized long-term survey data for a state listed species.	Ipswich, MA Spring 2013
President, Connecticut College Martial Arts Club	New London, CT Fall 2007 – Spring 2010 r women & LGBT
Reviewer For: Proceedings of the Royal Society B, Global Change Biole Freshwater Biology, Water, Animal Conservation, Frontiers in Ecology a Journal of Ornithology, Waterbirds, Anthropocene, Journal of Field Ornit Ornithological Science, Peerl, Ecology and Evolution	nd Evolution, Wilson

Ornithological Science, PeerJ, Ecology and Evolution.

WORKSHOPS & PROFESSIONAL DEVELOPMENT

Theory and Practice of Linking Knowledge with Action for	Seattle, WA		
Applied Science	Spring 2021		
Graduate-level fellowship training in achieving scientific co production.			
Montana Master Naturalist Certification Field- and course-work certification in natural history and interpretive nature guiding	Missoula, MT Fall 2020		
Communication Skills for Effective Leadership Intensive training in written and oral communication for team coordination	Madrid, Spain January 2019		

Using Conservation Evidence to answer conservation questions	Cambridge, UK
Training in evidence-based approaches to applied conservation research.	April 2018
Hawaii Bird Banding Workshop	Honolulu, HI
Ethics and methods of bird capture, banding, and resighting for research.	February 2018
Spatial Analysis in R	New York, NY
Handling and analyzing spatial datasets using statistical analysis software.	October 2017
Making Conservation Politically Effective	New York, NY
Training in representing conservation interests to lawmakers	October 2017
Occupancy modeling for Ecology in R	New York, NY
Statistical theory and programming for occupancy-based ecological models.	October 2016
Mediation and Negotiation in Water Resources Conflicts	Harvard, MA
Mediating and leading negotiations between stakeholders in water conflicts.	September 2015
Wetland Ecology and Management	Puxico, MO
Training in hydrology and ecology of lentic wetland systems.	August 2013

PROFESSIONAL SKILLS SUMMARY

Software: ENVI, ArcGIS, QGIS, Program MARK, SPSS, Microsoft Office Suite

Programming: R (advanced), Python (basic), JAGS/OpenBUGS, MATLAB (basic), SQL (basic)

Language: English (Native speaker), Spanish (Near-fluent)

PROFESSIONAL AFFILIATIONS

American Ornithological Society, Sigma Xi, IUCN Connectivity Conservation Working Group, GEO BON Species Populations Working Group, Freshwater BON, Nuttall Ornithological Society, Phi Beta Kappa.

REFERENCES

Dr. J. Michael Reed *Professor of Biology* Tufts University Email: <u>Michael.reed@tufts.edu</u> Phone: (617) 627-3544

Dr. Gordon Luikart *Professor of Conservation Genetics* Department of Wildlife Biology University of Montana & Flathead Lake Biological Station Email: <u>gordon.luikart@umontana.edu</u> Phone: (406) 872-4517

Dr. Andy J. Green Senior Research Professor Department of Wetland Ecology Doñana Biological Station Email: ajgreen@ebd.csic.es

Dr. Shafiqul Islam *Professor of Civil Engineering & Water Diplomacy* Fletcher School of Law & Diplomacy Tufts University Email: <u>Shafiqul.islam@tufts.edu</u> Phone: (617) 627-4290

Dr. Tyler Creech Spatial Ecologist Center for Large Landscape Conservation Email: <u>Tyler@largelandscapes.org</u> Phone: (425) 802-3574

Dr. J. Reed Bowman Avian Ecology Program Director Archbold Biological Station Email: <u>Rbowman@archbold-station.org</u> Phone: (863) 214-3644

Dr. Robert A. Askins *Professor of Biology* Connecticut College Email: <u>Robert.askins@conncoll.edu</u> Phone: (860) 439-2149

Dr. Walter D. Koenig Senior Scientist Cornell Lab of Ornithology Email: <u>Wdk4@cornell.edu</u> Phone: (607) 254-2151