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EDUCATION

- 2009** Ph.D. Ecology, University Program in Ecology, Duke University
2002 M.E.M. Resource Ecology, Nicholas School of the Environment, Duke University.
1997 B.S. Zoology, Department of Biology, University of Washington.

EMPLOYMENT

Marine Geospatial Ecology lab, Duke University

2017- Independent Research Scientist

Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Duke University, Durham, NC 27708, USA

2012- Joint faculty appointment (Consulting Associate)

Centre for Research into Ecological and Environmental Modelling, University of St Andrews, St Andrews, KY16 9LZ, Scotland

2016 Independent Senior Research Fellow funded by the Marine Alliance for Science and Technology for Scotland (MASTS)

2013 Independent Research Fellow funded by MASTS

2012 Named Research Fellow. Advisor - Len Thomas

Nicholas School of the Environment, Duke University, Durham, NC 27708, USA

2010 Postdoctoral Associate. Advisor - James Clark

2009 Postdoctoral Associate. Advisor - Patrick Halpin

National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center, Fisheries Ecology Division, 110 Shaffer Rd. Santa Cruz, CA 95060, USA

2002 Ecologist (GS-11)

2002 Staff Research Associate III (Contractor through UC Santa Cruz)

Edgerton Research Laboratory, New England Aquarium, Boston, MA 02110, USA

2000 Assistant Scientist/GIS

Cascadia Research Collective, Olympia, WA 98501, USA

1997 Marine Mammal Observer

Oregon State University, Newport, OR 97365, USA

1995 Research Intern for Dr. Bruce Mate

Pacific Whale Foundation, Kihei, HI 96753, USA

1992 Field Research Associate

PUBLICATIONS**Journal Articles (34)**

- 2018 Abrahms B, Scales KL, Hazen EL, Bograd SJ, **Schick RS**, Robinson PW, Costa DP. Mesoscale activity facilitates energy gain in a top predator. *Proc. R. Soc. B* 20181101.
- 2017 Schick, R. S., G. W. Humphris., T. W. Kelsey, J. Marston, and K. Samson. MapMySmoke: Feasibility of a New Quit Cigarette Smoking Mobile Phone Application Using Integrated Geo-positioning Technology, and Motivational Messaging Within a Primary Care Setting. *BMC Pilot and Feasibility Studies*
- 2017 Schick, R. S., J.J.D. Greenwood, and S. T. Buckland. An experiment on the impact of a neonicotinoid pesticide on honey bees; the value of a formal analysis of the data. *Environmental Sciences Europe*, 29(1):1-10, DOI:10.1186/s12302-016-0103-8.¹
- 2016 Fleishman, E., Costa, D.P., Harwood, J., Kraus, S.D., Moretti, D., New, L.F., **Schick, R. S.**, Schwarz, L.K., Simmons, S.E., Thomas, L., and R.S. Wells. Monitoring population-level responses of marine mammals to disturbance. *Marine Mammal Science* 32(3):1004–1021.
- 2016 Rolland, R., **Schick, R. S.**, Knowlton, A., Pettis, H., Hamilton, P., Clark, J. S., and S. D. Kraus. Health in right whales: from individuals to population. *Marine Ecology Progress Series* 542:265–282.
- 2016 Towner, A. V., Leos-Barajas, V., Langrock, R., **Schick, R. S.**, Smale, M. J., Kaschke, T., Jewell, O. J. D. and Papastamatiou, Y. P. Sex-specific and individual preferences for hunting strategies in white sharks. *Funct Ecol.* doi:10.1111/1365-2435.12613
- 2015 Oedekoven, C., Fleishman, E., Hamilton, P., Clark, J. S. and **Schick, R. S.** Expert elicitation of seasonal abundance of North Atlantic right whales (*Eubalaena glacialis*) in the mid-Atlantic. *Endangered Species Research*. 29(1):51–58.
- 2015 New, L., Hall, A. J., Harcourt, R., Kaufman, G., Parsons, E. C. M., Pearson, H. C., Cosentino, A. M. and **R. S. Schick**. The Modelling and Assessment of Whale-watching Impacts. *Ocean & Coastal Management* 30(1):e7.
- 2015 King, S.L., **Schick, R. S.**, Donovan, C., Booth, C. G., Burgman, M. and Thomas, L., and J. Harwood. An Interim Framework for Modelling the Population Consequences of Disturbance. *Methods in Ecology and Evolution* 6(10):1150–1158. doi: 10.1111/2041-210X.12411

¹Cited by the UK Expert Committee on Pesticides as part of the Department for Environment, Food and Rural Affairs official guidance to Environment Secretary Michael Gove, supporting an EU-wide ban on the use of neonicotinoid pesticides. <https://www.gov.uk/government/news/environment-secretary-backs-further-restrictions-on-neonicotinoid-pesticides>

- 2015 O'Toole, M. D., Lea, M-A, Guinet, C., **Schick, R. S.** and M. A. Hindell. Foraging strategy switch of a top marine predator according to seasonal resource differences. *Frontiers in Marine Science*. doi: 10.3389/fmars.2015.00021
- 2014 Belkin, I. M., Hunt Jr., G. L., Hazen, E. L., Zamon, J. E., **Schick, R. S.**, Prieto, R., Brodziak, J., Hare, J., Teo, S. L. H., Thorne, L., Bailey, H., Itoh, S., Munk, P., Musyl, M. K., Willis, J. K., and W. Zhang. Fronts, Fish, and Predators. *Deep-Sea Research II*. doi:10.1016/j.dsr2.2014.07.009.
- 2014 Mitchell, J.T., **Schick, R. S.**, Hallyburton, M., Dennis, M. F. Kollins, S. H., Beckham, J.C. and F.J. McClernon. Combined Ecological Momentary Assessment and Global Positioning System tracking to assess the spatial distribution of risk behavior: a proof of concept study targeting smoking behavior. *Journal of Dual Diagnosis* **10**:19–29. doi:10.1080/15504263.2013.866841
- 2014 Langrock, R., Blackwell, P., Goodall, V., Hopcraft, G., King, R., Niu, M., Patterson, T., Pedersen, M., A. Skarin, and **Schick, R. S.** A new modelling approach for group dynamic animal movement. *Methods in Ecology and Evolution* **5**:190–99. doi: 10.1111/2041-210X.12155
- 2014 New, L. F., Clark, J. S., Costa, D. P., Fleishman, E., Hindell, M. A., Klanjšček, T., Lusseau, D., Kraus, S., McMahon, C. R., Robinson, P. W., **Schick, R. S.**, Schwarz, L. K., Simmons, S. E., Thomas, L., Tyack, P. and Harwood, J. Using short-term measures of behaviour to estimate long-term fitness of southern elephant seals. *Marine Ecology Progress Series* **496**:99–108. doi: 10.3354/meps10547.
- 2013 Schick, R. S., J. J. Roberts, S. A. Eckert, J. S. Clark, H. Bailey, F. Chai, L. Shi, and P. N. Halpin. Pelagic movements of pacific leatherback turtles (*Dermochelys coriacea*) reveal the complex role of prey and ocean currents. *BMC Movement Ecology* **1**:11 doi:10.1186/2051-3933-1-11.
- 2013 Schick, R. S., L. F. New, L. Thomas, D. P. Costa, M. A. Hindell, C. R. McMahon, P. W. Robinson, S. E. Simmons, M. Thums, J. Harwood, and J. S. Clark. Estimating resource acquisition and at-sea body condition of a marine predator. *Journal of Animal Ecology* **82**: 1300–1315. doi: 10.1111/1365-2656.12102.
- 2013 Schick, R. S., Rolland, R., Kraus, S., Pettis, H., Knowlton, A., Hamilton, P., Kenney, R., and J. Clark. Using Hierarchical Bayes to understand movement, health, and survival in critically endangered marine mammals. *PLoS ONE* **8**(6): e64166. doi:10.1371/journal.pone.0064166.
- 2012 Best, B. D., P. N. Halpin, A. J. Read, E. Fujioka, C. P. Good, E. A. LaBrecque, **R. S. Schick**, J. J. Roberts, L. J. Hazen, S. S. Qian, D. L. Palka, L. P. Garrison, and W. A. McLellan. Online Cetacean Habitat Modeling System for the U.S. East Coast and Gulf of Mexico. *Endangered Species Research*. **18**: 1–15.
- 2012 Erős, T., J. D. Olden, **Schick, R. S.**, D. Schmera, M-J. Fortin. Patch-based graphs in freshwater ecology and conservation. *Landscape Ecology* **27** (2):303–317.
- 2011 Schick, R. S., P. N. Halpin, A. J. Read, D. L. Urban, B. D. Best, C. P. Good, J. J. Roberts, E. A. LaBrecque, C. Dunn, L. P. Garrison, K. D. Hyrenbach, W. A. McLellan, D. A. Pabst, D. L. Palka, and P. Stevick. Community structure in pelagic marine mammals at large spatial scales as revealed by multivariate ordination. *Marine Ecology Progress Series*. **434**:165–181.
- 2011 Curtice, C.², **R. S. Schick**, D. C. Dunn, and P. N. Halpin. Home range analysis of Hawaiian monk seals (*Monachus schauinslandi*) based on colony, age and gender. *Aquatic Mammals*. **37**(3):360–371.
- 2011 Erős, T., D. Schmera, and **Schick, R. S.** Network thinking in riverscape conservation – A graph-based approach. *Biological Conservation*. **144**(1):184–192.
- 2009 Schick, R. S., Halpin, P. N., Read, A. J., Slay, C. K., Kraus, S. D., Mate, B. R., Baumgartner, M. F., Roberts, J. J., Best, B. D., Good, C. P., Loarie, S. R., and J. S. Clark. Striking the right balance in right whale conservation. *Canadian Journal of Fisheries and Aquatic Sciences* **66**(9):1399–1403.³

²Corrie Curtice was a Master's student at Duke. I supervised the research that comprised her thesis, and led to this manuscript.

³Currently referenced as "The most reliable data and analysis for migrating North Atlantic right whales currently available..." by NOAA Fisheries - <http://www.greateratlantic.fisheries.noaa.gov/regs/2015/February/narwsourcedocumentfinal072114.pdf>

- 2009 Urban, D. L., Minor, E. S., Treml, E. A., and **R. S. Schick** Graph models of habitat mosaics. *Ecology Letters* **12**(3):260–273.
- 2009 Schick, R. S. and M. E. Lutcavage. Inclusion of prey data better predicts bluefin tuna (*Thunnus thynnus*) distribution. *Fisheries Oceanography* **18**:77–81.
- 2008 Schick, R. S., S. R. Loarie, F. Colchero, B. D. Best, A. Boustany, D. A. Conde, P. N. Halpin, L. N. Joppa, C. M. McClellan, and J. S. Clark. Understanding movement data and movement processes: current and emerging directions. *Ecology Letters* **11**(12):1338–1350.⁴
- 2007 Schick, R. S. and S. T. Lindley. Directed connectivity among fish populations in a riverine network. *Journal of Applied Ecology* **44**:1116–1126.
- 2007 Best, B. D., P. N. Halpin, E. Fujioka, A. J. Read, S. S. Qian, L. J. Hazen, and **R. S. Schick**. Geospatial web services within a scientific workflow: Predicting marine mammal habitats in a dynamic environment. *Ecological Informatics* **2**:210–223.
- 2007 Lindley, S.T., **R. S. Schick**, E. Mora, P. B. Adams, J. Anderson, S. Green, C. Hanson, B. May, D. McEwan, R. MacFarlane, C. Swanson, and J. Williams. Viability of threatened and endangered chinook salmon and steelhead ESUs in the Sacramento-San Joaquin basin. *San Francisco Estuary and Watershed Science* **5**.
- 2006 Parra, G., **R. S. Schick**, and P. Corkeron. Spatial distribution patterns of sympatric Irrawaddy and Indo-Pacific humpback dolphins in northeast Queensland, Australia. *Ecography* **29**:396–406.
- 2006 Lindley, S. T., **R. S. Schick**, A. Agrawal, M. Goslin, T. E. Pearson, E. Mora, B. May, J. Anderson, S. Green, C. Hanson, A. Low, D. McEwan, R. MacFarlane, C. Swanson, and J. Williams. Historical population structure of Central Valley steelhead and its alteration by dams. *San Francisco Estuary and Watershed Science* **4**(1):3.
- 2004 Schick, R. S., J. Goldstein, and M. E. Lutcavage. Bluefin tuna (*Thunnus thynnus*) distribution in relation to sea surface temperature fronts in the Gulf of Maine (1994–96). *Fisheries Oceanography* **13**:225–238.
- 2000 Schick, R. S. and D. L. Urban. Spatial components of bowhead whale (*Balaena mysticetus*) distribution in the Alaskan Beaufort Sea. *Canadian Journal of Fisheries and Aquatic Sciences* **57**:2193–2200.

In Press

- 2018 Pirootta, E., Booth, C. G., Costa, D. P., Fleishman, E., Kraus, S. D., Lusseau, D., Moretti, D., New, L., **Schick, R. S.**, Schwarz, L. K., Simmons, S. E., Thomas, L., Tyack, P. L., Weise, M. J., Wells, R. S., and J. Harwood. Understanding the population consequences of disturbance. *Ecology and Evolution*

In Prep

- Knowlton, A., Clark, J.S., Hamilton, P., Kraus, S.D., Pettis, H., Rolland, R., and **Schick, R. S.**⁵. The Effect of Entanglement Severity on Health, Reproduction, and Survival in North Atlantic Right Whales (*Eubalaena glacialis*). *Ecological Applications*
- Schick, R.S., Margolina, T., Joseph, J., Nowacek, D., Deruiter, S., Friedlander, A. and B.J. Southall. Inferring received levels from Navy Sonar on beaked whales and pilot whales off Cape Hatteras, NC. *J. Animal Ecology*
- Schick, R.S., Roberts, J.J., Ferguson, M., Clarke, J., and P. N. Halpin. Distribution and abundance of Arctic marine mammals in the Chukchi and Alaskan Beaufort Seas. *Scientific Reports*

⁴I was returned in the United Kingdom's 2014 Research Excellence Framework (REF) as an Early Career Researcher within the School of Biology using this paper.

⁵Corresponding Author

Technical Reports

- 2018** Southall, B.L., R.W. Baird, M. Bowers, W. Cioffi, C. Harris, J. Joseph, N. Quick, T. Margolina, D. Nowacek, A. Read, R. Schick, J. Shearer, and D.L. Webster. Atlantic Behavioral Response Study (BRS) – 2017 Annual Progress Report. Prepared for U.S. Fleet Forces Command. Submitted to Naval Facilities Engineering Command Atlantic, Norfolk, Virginia, under Contract No. N62470-15-D-8006, Task Order 50, issued to HDR Inc., Virginia Beach, VA.
- 2017** Schick, R.S., Roberts, J.J., and P.N. Halpin. Marine species density models for the Arctic Environmental Impact Statement (EIS) study area. Final Report. Prepared for U.S. Fleet Forces Command. Submitted to Naval Facilities Engineering Command Atlantic, Norfolk, Virginia, under Contract No. N62470-15.
- 2014** Harwood, J., S. King, **R. S. Schick**, C. Donovan and C. Booth. A Protocol for Implementing the Interim Population Consequences of Disturbance (PCoD) Approach: Quantifying and Assessing the Effects of UK Offshore Renewable Energy Developments on Marine Mammal Populations. *Scottish Marine and Freshwater Science* 5(2).
- 2006** Williams, T. H., E. P. Bjorkstedt, W. Duffy, D. Hillemeier, G. Kautsky, T. Lisle, M. McCain, M. Rode, R. G. Szerlong, **R. S. Schick**, M. Goslin, and A. Agrawal. Historical population structure of coho salmon in the Southern Oregon / Northern California Coasts Evolutionarily Significant Unit. *NOAA Technical Memo*, 390.
- 2005** Agrawal, A., **R. S. Schick**, E. P. Bjorkstedt, R. G. Szerlong, M. N. Goslin, B. C. Spence, T. H. Williams, and K. M. Burnett. Predicting the potential for historical coho, chinook and steelhead habitat in Northern California. *NOAA Technical Memo*, 379:1–25.
- 2005** Agrawal, A., **R. S. Schick**, E. P. Bjorkstedt, B. Spence, and M. Goslin. A gis-based synthesis of information on spawning distributions of chinook salmon in the California Coast Chinook Salmon ESU. *NOAA Technical Memo*, 377:1–15.
- 2005** Schick, R. S., A. L. Edsall, and S. T. Lindley. Historical and Current Distribution of Pacific Salmonids in the Central Valley, CA. *NOAA Technical Memo*, 369:1–30.
- 2004** Lindley, S. T., **R. S. Schick**, B. P. May, J. J. Anderson, S. Green, C. Hanson, A. Low, D. McEwan, R. B. MacFarlane, C. Swanson, and J. G. Williams. Population structure of threatened and endangered chinook salmon ESUs in California's Central Valley basin. *NOAA Technical Memo*, 360:1–56.

Book Chapters

- 2015** Schick, R. S., Rolland, R., Kraus, S., Pettis, H., Knowlton, A., Hamilton, P., Thomas, L., Harwood, J., and J. Clark. Effects of Model Formulation on Estimates of Health in Individual Right Whales (*Eubalaena glacialis*). *Effects of Noise on Aquatic Life II*. Springer Press
- 2015** Fleishman, E., Burgman, M., Runge, M., **Schick, R. S.**, and S. Kraus. Expert elicitation of population-level effects of disturbance. *Effects of Noise on Aquatic Life II*. Springer Press
- 2015** Costa, D. P., Schwarz, L., Robinson, P., **Schick, R. S.**, Morris, P. A., Condit, R., Crocker, D. E. and Kilpatrick, A. M. A Bioenergetics Approach to Understanding the Population Consequences of Disturbance: Elephant seals as a Model System. *Effects of Noise on Aquatic Life II*. Springer Press
- 2015** Harwood, J., King, S., Booth, C., Donovan, C., **Schick, R. S.**, Thomas, L., and New, L. F. Understanding the Population Consequences of Acoustic Disturbance (PCAD) for Marine Mammals. *Effects of Noise on Aquatic Life II*. Springer Press
- 2002** Schick, R. S. Spatial correlation between bluefin tuna and sea surface temperature fronts. In J. Breman, editor, *Marine Geography: GIS for the Oceans and Seas*, pages 61–66. ESRI Press.

- 2002** Schick, R. S. Using gis to track right whales and bluefin tuna in the Atlantic Ocean. In D. Wright, editor, *Undersea with GIS*, pages 65–84. ESRI Press.
- 2001** Schick, R. S. Tuna distribution in relation to physical features in the Gulf of Maine. In C. Convis, editor, *Conservation Geography: Case Studies in GIS, Computer Mapping, and Activism*, pages 154–155. ESRI Press.

HONORS & AWARDS

- 2013** Marine Alliance for Science and Technology for Scotland (MASTS) Academic Fellowship (£117,669)
- 2012** Certificate of Accomplishment from The Spatial Ecology and Telemetry Working Group of The Wildlife Society, Bethesda, MD 20814, USA, June 15th, 2012
- 2012** Travel Award to participate in 3rd RCN-FORECAST Meeting, \$2000, Woods Hole, MA. (*declined*)
- 2012** Invited workshop participant: Workshops on Animal Movement Modelling (University of St Andrews, September 2011 & June 2012). Organizers: Ruth King, Roland Langrock, Juan Morales, Jason Matthiopoulos and Len Thomas.
- 2008** H.L. Smith Dissertation Year Fellowship, Duke University Marine Lab (2008-2009)
- 2007** Honorable Mention – Southwood Prize (Best Paper by a Young Author), 2007, British Ecological Society
- 2006** Student Travel Award to NSF US-Hungarian Workshop on Large Scale Random Graph Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems, August 28–September 4, 2006, Alfred Renyi Institute of Mathematics, Budapest, Hungary
- 2006** Graduate School Teaching Mini-grant (2006), \$2000, Duke University
- 2005** James B. Duke Fellowship (2005–2009), Duke University
- 2005** Academic/Service Fellowship (2005–2006), University Program in Ecology, Duke University
- 2005** University Fellowship to study Ecology, University of California - Davis (*declined*)
- 1999** Environmental Internship Fellow (Summer 1999), \$1500, Nicholas School of the Environment, Duke University
- 1998** Merit Scholarship (1998–1999), \$5000, Nicholas School of the Environment, Duke University
- 1992** Dean’s List (1992-1994), University of Washington

MAJOR RESEARCH FUNDING

- 2018** Double MOCHA: Phase II Multi-study Ocean acoustic Human effects Analysis. US Office of Naval Research. Award: \$869,483
- 2017** Web-based visualization of marine mammal health across space and time with applications towards marine spatial planning. US Office of Naval Research. Award: \$103,993
- 2016** MapMySmoke - EPSRC Impact Acceleration Account, Round II. Award: £1,500.
- 2016** MapMySmoke - EPSRC Impact Acceleration Account. Award: £5,000.
- 2016** PCOD+: Developing widely-applicable models of the population consequences of disturbance. US Office of Naval Research. Award: \$1,800,000.

- 2015** Feasibility of a new quit cigarette smoking mobile phone application (MapMySmoke) using integrated geo-positioning technology, and motivational messaging within primary care NHS setting. NHS Fife Research Bursary. Co-PI with John Marston (Pittenweem Medical Practice), Gerry Humpris (University of St Andrews School of Medicine), and Tom Kelsey (University of St Andrews School of Computer Science). Award: £19,420.
- 2015** Extending an aerial remote sensing platform using three digital sensors. Marine Alliance for Science and Technology for Scotland - Technology, Platforms & Sensors Small Grant Round. Award: £1,200.
- 2014** PCoD Lite - Using an interim PCoD protocol to assess the effects of disturbance associated with US Navy exercises on marine mammal populations. Co-PI with Cormac Booth, Mark Burgman, Carl Donovan, John Harwood, Len Thomas. US Office of Naval Research. Award: \$150,000.
- 2013** Scottish Universities Life Science Alliance LEADERS award to investigate movement patterns of human smokers. Award: £30,865.
- 2012** Statistical tools for fitting models of the Population Consequences of Acoustic Disturbance to data from marine mammal populations (PCAD tools II). Co-PI with Len Thomas, John Harwood, and Catriona Harris. US Office of Naval Research. Award: \$475,956.
- 2012** The Population Consequences of Disturbance Model Application to North Atlantic Right Whales (*Eubalaena glacialis*). Co-PI with Scott Kraus, Rosalind Rolland, and Amy Knowlton. US Office of Naval Research. Award: \$132,417.

PRESENTATIONS

Invited

- 2017** Departmental Seminar, Duke University Marine Lab
- 2015** Remote presentation to the North Atlantic Right Whale Recovery Plan Southeast U.S. Implementation Team. April 21st.
- 2015** Annual Research Symposium, School of Biology University of St Andrews, March 27th.
- 2014** International Marine Conservation Congress, Glasgow, Scotland. August 14th–19th.
- 2014** Hidden Markov Model Symposium, The Boyd Orr Centre for Population and Ecosystem Health, University of Glasgow, Scotland. February 13th.
- 2013** University of Aberdeen, Lighthouse Field Station, Cromarty, Scotland. October 23th.
- 2013** NCEAS Roundtable. NCEAS, UCSB, Santa Barbara, CA. June 24th.
- 2013** Ecological and Environmental Statistical Modelling Symposium. Instituto Superior de Agronomia, Lisboa, Portugal. April 11th.
- 2012** Departmental seminar, University Program in Ecology, Duke University, Durham, NC. February 10th.
- 2011** Geospatial Analysis Workshop, Monitor360, San Francisco, CA. August 30th.
- 2011** Departmental seminar, Centre for Research into Ecological and Environmental Modelling (CREEM), University of St Andrews. September 14th.
- 2011** Schick, R.S., L.F. New, L. Thomas, D.P. Costa, M.A. Hindell, C.R. McMahon, P.W. Robinson, S.E. Simmons, M. Thums, J. Harwood, and J.S. Clark. Foraging strategy, maternal status, and organism-environment interaction determine at-sea condition of northern and southern elephant seals. Presented at the 4th international conference on The Effects of Sound in the Ocean on Marine Mammals, ESOMM-2011, Amsterdam, The Netherlands, September 5th–9th.

- 2009** Ecological Modeling for Marine Mammalogists Workshop at the 18th Biennial Conference on the Biology of Marine Mammals, at Québec City, Quebec, Canada. October 11th.
- 2006** Departmental seminar, Department of Biology, UNC-Greensboro. Greensboro, NC. November 1st.
- 2004** Schick, R.S. and S.T. Lindley. 2004. Inferring Historical Within-basin Population Structure of Central Valley Steelhead Using Graph Theory. Presented during the Central Valley Steelhead Recovery Symposium at the American Fisheries Society meeting of the California-Nevada and Humboldt Chapters. Redding, CA. April 22nd-24th.
- 2002** Schick, R.S., and M.E. Lutcavage. Bluefin tuna (*Thunnus thynnus*) distribution in relation to sea surface temperature fronts in the Gulf of Maine (1994-1996). Presented during the Spatial Movement of Fish: Field Study, Modeling, and Management Perspectives symposium at the American Fisheries Society Annual Meeting. Baltimore, MD. August 18th-22nd.

Contributed

- 2018** Southall, B.L., R.W. Baird, M. Bowers, W. Cioffi, H. Foley, A. Friedlaender, C. Harris, J. Joseph, N. Quick, T. Margolina, D. Nowacek, A. Read, **R. Schick**, J. Shearer, Z. Swaim, D. Waples and D.L. Webster, J. Wisse. Atlantic Behavioral Response Study: Experimental Design, Analytical Methods, and Preliminary Results
- 2018** Pirota, E., Booth, C. G., Costa, D. P., Fleishman, E., Harris, C., Joy, R., Kraus, S. D., Lusseau, D., Moretti, D., New, L., **Schick, R. S.**, Schwarz, L. K., Simmons, S. E., Thomas, L., Tyack, P. L., Weise, M. J., Wells, R. S., Wilson, L., and J. Harwood. Understanding the population consequences of disturbance – reviewing the current state of PCoD research.
- 2015** Schick, R.S., Hewitt, R.C., Rodwell, S., Anderson, P., Martin, J., Kearns, M. and P. Thompson. Using UAVs to Monitor Size Structure and Body Condition in Harbour Seals. Unmanned Aerial Vehicles in Environmental Research. Liverpool John Moores University, Liverpool, England. July 7th-8th.
- 2014** King, S.L., **Schick, R. S.**⁶, Donovan, C., Booth, C.G., Burgman, M. and Thomas, L., and Harwood, J. An Interim Framework for Modelling the Population Consequences of Disturbance. International Marine Conservation Congress. Glasgow, Scotland. August 14th-18th.
- 2013** Fleishman, E., Hamilton, P., and **Schick, R.S.**⁶. Expert elicitation review. Presented at the North Atlantic Right Whale Consortium Annual Meeting. New Bedford, MA. November 6th-7th.
- 2013** Schick, R.S., Kraus, S.D., Rolland, R., Knowlton, A., Hamilton, P., Pettis, H., and J.S. Clark. Using effort, sightings, and body condition data to estimate survival and health of individuals and the entire right whale population. Presented at the North Atlantic Right Whale Consortium Annual Meeting. New Bedford, MA. November 6th-7th.
- 2012** Schick, R.S., Kraus, S.D., Rolland, R., Knowlton, A., Hamilton, P., Pettis, H., Kenney, R., and J.S. Clark. Using effort, sightings, and body condition data to estimate survival and health of individuals and the entire right whale population. Presented at the North Atlantic Right Whale Consortium Annual Meeting. New Bedford, MA. November 13th-14th.
- 2011** Thomas, L. and the PCAD Working Group. Estimating the consequences of acoustic and other anthropogenic disturbance on marine mammal populations. Presented at the 19th Biennial Conference on the Biology of Marine Mammals, Tampa, FL. November 27th-December 2nd.
- 2011** Schick, R.S., Kraus, S.D., Rolland, R., Knowlton, A., Hamilton, P., Pettis, H., Kenney, R., and J.S. Clark. Using effort, sightings, and body condition data to estimate health and survival: an introduction to the PCAD approach. Presented at the North Atlantic Right Whale Consortium Annual Meeting. New Bedford, MA. November 2nd-3rd.

⁶Presenting author.

- 2011 Schick, R.S., Kraus, S.D., Rolland, R., Corkeron, P., Hamilton, P., Clark, C.W., and J.S. Clark. Potential effects of acoustic disturbance on foraging behavior, body condition, and demography in North Atlantic right whales. Presented at the 96th Annual Meeting of the Ecological Society of America, Austin, TX. August 7th–12th.
- 2011 Schick, R.S., Kraus, S.D., Rolland, R., Corkeron, P., and P. Hamilton. Potential effects of acoustic disturbance on foraging behavior, body condition, and demography in North Atlantic right whales. Presented at the Association for Environmental Studies and Sciences (AESS). Burlington, VT. June 23rd–26th.
- 2011 Thomas, L., **Schick, R.S.**⁶, Clark, J.S., and J. Harwood. Translating conceptual to parameterized models for multiple taxonomic groups. Presented at the Association for Environmental Studies and Sciences (AESS). Burlington, VT. June 23rd–26th.
- 2011 Lusseau, D., Williams, R., Christiansen, F. and L. Bejder. Population consequences of whalewatching disturbances on cetaceans. Presented at the Association for Environmental Studies and Sciences (AESS). Burlington, VT. June 23rd–26th. *Schick presented on behalf of Lusseau et al.*
- 2010 Schick, R.S., J.J. Roberts, S. Eckert, and P.N. Halpin. Movement of Pacific Leatherback Turtles in Response to a Dynamic Marine Environment. Presented to the Lenfest Working Group, Barnegat Bay, NJ. March 15th–17th.
- 2008 Schick, R.S., Clark, J.S., Loarie, S.R., Colchero, F., Best, B.D., Boustany, A., Conde, D.A., Halpin, P.N., Joppa, L.N., McCellan, C.M., Read, A.J., Slay, C.S., Kraus, S.D., Mate, B.R., and Baumgartner, M.F. Understanding Movement Data and Movement Processes: what is the state of the art? The Third International Biologging Science Symposium, Pacific Grove, CA. September 1st–5th.
- 2007 Schick, R.S., J.S. Clark, B.R. Mate, M.F. Baumgartner, C.S. Slay, S.D. Kraus, P.N. Halpin, A.J. Read, D.L. Urban, F.E. Werner, and B.D. Best. Should I Stay or Should I Go? Estimating movement forces in NW Atlantic Right Whales with Hierarchical Bayes. Presented at the North Atlantic Right Whale Consortium Annual Meeting. New Bedford, MA. November 7th–8th.
- 2006 Schick, R.S., S.T. Lindley, A.L. Lloyd, P.N. Halpin, and D.L. Urban. Directed connectivity among fish populations in a riverine network. Presented during the NSF-Sponsored US-Hungarian Workshop Large-Scale Random Graph Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems. Budapest, Hungary. August 28th – September 4th.
- 2006 Schick, R.S., S.T. Lindley, A.L. Lloyd, P.N. Halpin, and D.L. Urban. Directed connectivity among fish populations in a riverine network. Presented during the 91st Annual Meeting of the Ecological Society of America. Memphis, TN. August 6th–11th.
- 2006 Urban, D.L. and Minor, E. and Treml, E.A. and **Schick, R.S.**, Graph models of habitat networks: commonalities and implications. Presented during the 91st Annual Meeting of the Ecological Society of America. Memphis, TN. August 5th–11th.
- 2005 Burnett, K.M., E. P. Bjorkstedt, D. Miller, B.C. Spence, K. Vance-Borland, **R.S. Schick**, and A. Agrawal. Modeling Intrinsic Habitat Potential for Salmonids in Oregon and California. Presented during the 135th Annual Meeting of the American Fisheries Society. Anchorage, AK. September 11th–15th.
- 2005 Barnett-Johnson, R., C.F. Ramos, **R.S. Schick**, B.C. Grimes, R.B. MacFarlane. Sr isotopes in otoliths reveal natal origin and ocean structure in Chinook salmon in California with application to salmonids in other regions. Presented during the 135th Annual Meeting of the American Fisheries Society. Anchorage, AK. September 11th–15th.
- 2004 Schick, R. S. and M. E. Lutcavage, Using GIS to locate pelagic hot spots for bluefin tuna, PICES 13th Annual Meeting. Honolulu, Hawaii, October 18th–21st.

- 2004** Schick, R. S. and S.T. Lindley. Using Graph Theory to Assess Connectivity in the Endangered Central Valley, CA Spring Run Chinook Evolutionarily Significant Unit. Presented during the 89th Annual Meeting of the Ecological Society of America. Portland, OR. August 1st–6th.
- 2004** Schick, R.S. Using the ArcInfo Network Module to Determine Fish Population Structure. Presented at the 24th Annual ESRI User Conference. San Diego, CA. August 9th–13th.
- 2003** Schick, R.S., A. Agrawal, B. Spence, M. Goslin, and E.P. Bjorkstedt. Using Dynamic Segmentation to Display, Query and Analyze Fisheries Data. Presented at the 23rd Annual ESRI User Conference. San Diego, CA. July 7th–11th.
- 2003** Schick, R.S., S.T. Lindley, and E.P. Bjorkstedt. Assessing quantitative relationships between Chinook salmon and GIS-derived habitat data. Presented during the Interagency Ecological Program Workshop, California Water and Environmental Modeling Forum Annual Meeting. Pacific Grove, CA. February 25th–27th.
- 2002** Brill, R.W., M.E. Lutcavage, **R.S. Schick**, and N.K. Newlands. Environmental Influences on Movements and Depth Distributions of Tunas and Billfishes. Presented at the New Insights Into the Ecology of Pelagic Animals From Applications of Electronic Tags, during the 2002 Ocean Sciences Meeting. Honolulu, HI. February 11th–15th.
- 2000** Schick, R.S. New statistical approaches to spatial analysis of right whale distribution vs. environmental parameters. Presented at the Annual Right Whale Consortium Meeting. Boston, MA. October 26th–27th.
- 2000** Schick, R.S., M.E. Lutcavage, and S.D. Kraus. Satellite Imagery Ecosystem based GIS study of Bluefin Tuna and Right Whale distribution and movements in the Gulf of Maine and Northwest Atlantic. Presented at Environmental Consequences of Underwater Sound Meeting, Office of Naval Research, United States Navy. Rosslyn, VA. July 18th–19th.
- 2000** Schick, R.S., and D.L. Urban. Spatial Components of Bowhead Whale (*Balaena mysticetus*) distribution in the Alaskan Beaufort Sea. Presented at the 15th Annual Symposium of the U.S. Chapter of the International Association for Landscape Ecology. Ft. Lauderdale, FL. April 15th–19th.

Posters

- 2016** Schick, R. S., G. W. Humphris., T. W. Kelsey, J. Marston, and K. Samson. MapMySmoke—A Context Aware Mobile Phone Application Targeted at Smoking Cessation. NHS Scotland Smoking Cessation Conference, Edinburgh, Scotland, November 22nd, 2016.
- 2014** Schick, R. S., L. F. New, L. Thomas, D. P. Costa, M. A. Hindell, C. R. McMahon, P. W. Robinson, S. E. Simmons, M. Thums, J. Harwood, and J. S. Clark. Estimating resource acquisition and at-sea body condition of a marine predator. Presented at the 5th Bio-logging Science Symposium. September 22nd – 26th. Strasbourg, France.
- 2013** Schick, R.S., Kraus, S.D., Rolland, R., Knowlton, A., Hamilton, P., Pettis, H., Kenney, R., and J.S. Clark. Using effort, sightings, and body condition data to estimate survival and health of individuals and the entire right whale population. Presented at the 3rd International Conference on the Effects of Noise on Aquatic Life, Budapest, Hungary. August 11th–16th.
- 2013** Mitchell, J.T., **Schick, R.S.**, Bayham, R.L., Dennis, M. F., Kollins, S.H., Beckham, J.C., and F.J. McCleron. The When and Exactly Where of Smoking: A Combined EMA/GPS Proof of Concept Study. Presented at the 2013 Annual Meeting of the Society for Research on Nicotine and Tobacco, Boston, MA. March 13th–16th.
- 2013** Schick, R.S., Kraus, S.D., Rolland, R., Knowlton, A., Hamilton, P., Pettis, H., Kenney, R., and J.S. Clark. Using effort, sightings, and body condition data to estimate survival and health of individuals and the entire right whale population. Presented at the 27th European Cetacean Society Conference, Setúbal, Portugal, April 8th–10th.

- 2011** Curtice, C., **Schick, R.S.**, Dunn, D.C., and P. N. Halpin. Home Range Analysis of Hawaiian Monk Seals (*Monachus schauinslandi*) Based on Colony, Age and Sex. Presented at the 19th Biennial Conference on the Biology of Marine Mammals, Tampa, Florida, November 27th–December 2nd.
- 2008** Schick, R.S., S.R. Loarie, P.N. Halpin, Read, A.J., Slay, C.S., Kraus, S.D., Mate, B.R., Baumgartner, M.F., and J.S. Clark. Estimating habitat suitability in the migratory corridor of NW Atlantic Right Whales. Presented at the North Atlantic Right Whale Consortium Annual Meeting. New Bedford, MA. November 5th–6th.
- 2007** Bjorkstedt, E.P., B.C. Spence, T.H. Williams, W. Duffy, D. Fuller, J.C. Garza, D. Hankin, D. Hillemeier, W. Jones, G. Kautsky, T. Lisle, R. Macedo, M. McCain, J. Smith, M. Rode, R.G. Szerlong, **R.S. Schick**, T. Pearson, E. Mora, M. Goslin, and A. Agrawal. Historical population structure of ESA-listed Pacific salmonids in the Southern Oregon / Northern California Coast and North-Central California Coast recovery domains. Presented during the 137th Annual Meeting of the American Fisheries Society. San Francisco, CA., September 2nd–6th.
- 2007** Agrawal, A., R.G. Szerlong, M. Goslin, E. Bjorkstedt, **R.S. Schick**, T. Williams, and B. Spence. Predicting the distribution of coho salmon habitat in the SONCC Recovery Domain. Presented during the 137th Annual Meeting of the American Fisheries Society. San Francisco, CA., September 2nd–6th.
- 2006** Williams, T.H., E.P. Bjorkstedt, W. Duffy, D. Hillemeier, G. Kautsky, T. Lisle, M. McCain, M. Rode, R.G. Szerlong, **R.S. Schick**, M. Goslin, and A. Agrawal. Historical population structure of coho salmon in the Southern Oregon /Northern California Coasts Evolutionarily Significant Unit. Oregon Chapter of the American Fisheries Society, 41st Annual Meeting. Sunriver, OR. March 1st–3rd.
- 2004** Agrawal, A, R.G. Szerlong, M. Goslin, E. Bjorkstedt, **R.S. Schick**, T. Williams, and B. Spence. Predicting the Distribution of Coho Salmon Habitat in the SONCC Recovery Domain. Poster. Oregon Chapter of the American Fisheries Society, 40th Annual Meeting. February Sunriver, OR. 18th–20th.
- 2003** Parra, G.J., **R.S. Schick**, and P.J. Corkeron. Spatial distribution patterns of sympatric Irrawaddy and Indo-Pacific humpback dolphins in northeast Queensland, Australia. Presented at the Fifteenth Biennial Conference on the Biology of Marine Mammals. Greensboro, NC. December 15th–19th.
- 2001** Schick, R.S. Using ArcInfo, Perl, and the Distributed Oceanographic Data System (DODS) to analyze movements of right whales in relation to sea surface temperature fronts. The Use of Geomatic Technologies for Marine Mammal Scientists II at the Fourteenth Biennial Conference on the Biology of Marine Mammals. Vancouver, BC. November 28th.
- 1999** Schick, R.S., D.L. Urban, P.N. Halpin, and A.J. Read. GIS techniques for spatial analysis of bowhead whale distribution. GIS and Remote Sensing for Marine Mammal Conservation Symposium at the Thirteenth Biennial Conference on the Biology of Marine Mammals. Maui, HI. November 28th.
- 1993** Schick, R.S., P.F. Forestell, and E.K. Brown. Near-shore distribution patterns of humpback whales in Hawaii simultaneously determined by theodolite and small boat surveys. Presented at the Tenth Biennial Conference on the Biology of Marine Mammals. Galveston, TX. November 11th–15th.

TEACHING EXPERIENCE

- 2017** Reproducible Research Workshop, Society for Marine Mammalogy Biennial Meeting, Halifax, Nova Scotia
- 2017** Reproducible Research Workshop, Ecological Society of America Annual Meeting, Portland, OR
- 2016** Guest lecturer for BL3309 Ecosystems and Conservation, University of St Andrews.
- 2016** Guest lecturer for BL5103 Population Biology of Marine Mammals, University of St Andrews.
- 2015** Guest lecturer for BL5103 Population Biology of Marine Mammals, University of St Andrews.

2012 Guest lecturer for Models for Environmental Data, Duke University.

2012 Guest lecturer for Marine GIS, Duke University.

2007 Teaching assistant for Marine GIS. As TA I developed and taught 4 separate modules.

2007 Guest lecturer, Marine Environmental Science, Elon University (Undergraduate).

2006 Organized, received funding for, and led a multi-week seminar on “The Uses of Technology in Teaching,” Duke University.

2006 Teaching assistant for Marine GIS, Duke University.

SERVICE

Research staff representative to the School of Mathematics and Statistics, University of St. Andrews.

Research staff representative to the Research and Teaching Staff Forum, University of St. Andrews.

Elected Board Member (January 2013 - December 2015), North Atlantic Right Whale Consortium.

Associate Editor, PLoS-ONE

Manuscript reviewer for: Ecological Applications, Biometrics, Deep-Sea Research II, PLoS-ONE, Ecology, Marine Ecology Progress Series, BMC Ecology, Journal of Applied Ecology, Ecological Modelling, Landscape Ecology, San Francisco Estuary and Watershed Science, Functional Ecology, Conservation Biology, Endangered Species Research, Progress in Oceanography, Methods in Ecology and Evolution.

Co-organizer of CREEM R-Users Group, University of St. Andrews.

PRESS

2016 Scientists devise an app to beat smoking. The Times, Gemma Fraser, 14 June 2016.

2009 Researchers Call for Second Look at Right Whale Protection ScienceInsider Blog Post, Science Magazine, Erik Stokstad, 18 August 2009.

2004 New Tools Reveal Treasures at Ocean Hot Spots, by David Malakoff, Science, 21 May 2004, Vol 304, pages 1104–1105.

EDP

Operating Systems: OSX, Linux, Windows

Software Applications/Languages: R, L^AT_EX, ArcInfo/ArcGIS, Matlab, Adobe Illustrator

INTERESTS

Piedmont Style Blues Guitar, Photography, Information Visualization, Ancestral Diets, Food & Cooking, Gardening