

Richard B. Chandler

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Education

- University of Massachusetts Amherst. 2011. Ph.D. Wildlife Conservation.
- University of Massachusetts Amherst. 2006. M.S. Wildlife Conservation.
- University of Vermont. 2002. B.S. Wildlife Biology.

Professional Positions

- Assistant Professor, University of Georgia, 2013–present
- Postdoctoral Research Ecologist, USGS Patuxent Wildlife Research Center, 2010–2013

Publications

Books

- Royle, J.A., R.B. Chandler, R. Sollmann, and B. Gardner. 2014. Spatial Capture-Recapture. Academic Press.

Journal Articles

2016

- Chandler, R.B. and J. Hepinstall-Cymerman. 2016. Estimating the spatial scales of landscape effects on abundance. *Landscape Ecology* 31:1383–1394.
- Monroe, A., R.B. Chandler, W. Burger, Jr., and J.A. Martin. 2016. Converting exotic forages to native warm-season grass can increase avian productivity in beef production systems. *Agriculture, Ecosystems, and Environment* 233:85–93.
- Dziadzio, M.C., L.L. Smith, R.B. Chandler, and S.B. Castleberry. 2016. Effect of nest location on gopher tortoise nest survival. *Journal of Wildlife Management* 80:1314–1322.
- Laufenberg, J., J.D. Clark, M.J. Hooker, C.L. Lowe, K.C. O’Connell-Goode, J.C. Troxler, M.M. Davidson, M.J. Chamberlain, R.B. Chandler. 2016. Demographic rates and population viability of black bears in Louisiana. *Wildlife Monographs* 194:1–37.
- Taylor, A.R., J.H. Schacke, T.R. Speakman, S.B. Castleberry, R.B. Chandler. 2016. Factors related to common bottlenose dolphin (*Tursiops truncatus*) seasonal

migration along South Carolina and Georgia coasts, USA. *Animal Migration* 3:14–26.

- Dziadzio, M.C., A.K. Long, L.L. Smith, R.B. Chandler, and S.B. Castleberry. 2016. Presence of red imported fire ants at gopher tortoise nests. *Wildlife Society Bulletin* 40:202–206.

2015

- Chandler, R.B., E. Muths, B.H. Sigafus, C.R. Schwalbe, C.J. Jarchow, and B.R. Hossack. 2015. Spatial occupancy models for predicting metapopulation dynamics and viability following reintroduction. *Journal of Applied Ecology* 52:1325–1333.
- Sollmann, R., B. Gardner, R.B. Chandler, J.A. Royle, and T.S. Sillett. 2015. An open population hierarchical distance sampling model. *Ecology* 96:325–331.
- Hostetler, J.A. and R.B. Chandler. 2015. Improved state-space models for inference about spatial and temporal variation in abundance from count data. *Ecology* 96:1713–1723.

2014

- Chandler, R.B. and J.D. Clark. 2014. Spatially explicit integrated population models. *Methods in Ecology and Evolution* 5:1351–1360.
- Graves, T., R.B. Chandler, J.A. Royle, P. Beier, and K.C. Kendall. 2014. Estimating landscape resistance to dispersal. *Landscape Ecology* 29:1201–1211.
- Royle, J.A., R.B. Chandler, C.C. Sun, and A.K. Fuller. 2014. Reply to Efford on “*Integrating Resource Selection Information with Spatial Capture-recapture.*” *Methods in Ecology and Evolution* 5:603–605.
- Zipkin, E.F., T.S. Sillett, E.H.C. Grant, R.B. Chandler, and J.A. Royle. 2014. Inferences about population dynamics from count data using multistate models: a comparison to capture-recapture approaches. *Ecology and Evolution* 4:417–426.
- Zipkin, E.F., J.T. Thorson, K. See, H.J. Lynch, E.H.C. Grant, Y. Kanno, Y., R.B. Chandler, B.H. Letcher, and J.A. Royle. 2014. Modeling structured population dynamics using data from unmarked individuals. *Ecology* 95:22–29.

2013

- Chandler, R.B., D.I. King, C.C. Chandler, R. Raudales, R. Trubey, and V. J. Arce Chavez. 2013. A small-scale land-sparing approach to conserving biodiversity in tropical agricultural landscapes. *Conservation Biology* 27:785–795.
- Sollmann, R., B. Gardner, R.B. Chandler, D. Shindle, D. Onorato, J.A. Royle, and A. O’Connell. 2013. Using multiple data sources provides density estimates for endangered Florida panther. *Journal of Applied Ecology* 50:961–968.
- Chandler, R.B. and J.A. Royle. 2013. Spatially-explicit models for inference about density in unmarked populations. *Annals of Applied Statistics* 7:936–954.
- Royle, J.A., R.B. Chandler, K.D. Gazenski, and T.A. Graves. 2013. Spatial capture-recapture models for jointly estimating population density and landscape connectivity. *Ecology* 94:287–294.

- J.A. Royle, R.B. Chandler, C.C. Sun, and A.K. Fuller. 2013. Integrating resource selection information with spatial capture-recapture. *Methods in Ecology and Evolution* 4:520–530.
- Yackulic, C.B., R.B. Chandler, E. Zipkin, J.A. Royle, J.D. Nichols, E.H.C. Grant, and S. Veran. 2013. Presence-only modeling using MAXENT: When can we trust the inferences? *Methods in Ecology and Evolution* 4:236–243.

2012

- Sillett, T.S., R.B. Chandler, J.A. Royle, M. Kéry, S.A. Morrison. 2012. Hierarchical distance sampling models of habitat-specific abundance and total population size of the Island Scrub-Jay. *Ecological Applications* 22:1997–2006.
- Royle, J.A, R.B. Chandler, C. Yackulic, and J.D. Nichols. 2012. Likelihood analysis of species occurrence probability from presence-only data for modeling species distributions. *Methods in Ecology and Evolution* 157:261–280.
- Chandler, C.C., D.I. King, and R.B. Chandler. 2012. Do mature forest birds prefer early-successional habitat during the postfledging period? *Forest Ecology and Management* 264:1–9.

2011

- Chandler, R.B. and D.I. King. 2011. Habitat quality and habitat selection of golden-winged warbler warblers in Costa Rica: application of hierarchical models for open populations. *Journal of Applied Ecology* 48:1038–1047.
- King, D.I., C.C. Chandler, J.H. Rappole, R.B. Chandler, and D.W. Mehlman. 2011. Establishing quantitative habitat targets for an endangered Neotropical migrant (*Dendroica chrysoparia*) during the non-breeding season. Bird Conservation International. DOI: 10.1017/S095927091100027X.
- Schlossberg, S., D.I. King, and R.B. Chandler. 2011. Effects of low-density housing development on shrubland birds in western Massachusetts. *Landscape and Urban Planning* 103:64–73.
- Fiske I. and R.B. Chandler. 2011. unmarked: an R package for fitting hierarchical models of wildlife occurrence and abundance. *Journal of Statistical Software* 43:1–23.
- Chandler, R.B., J.A. Royle, and D.I. King. 2011. Inference about density and temporary emigration in unmarked populations. *Ecology* 92:1429–1435.

2010

- Schlossberg, S., D.I. King, R.B. Chandler, and B.A. Mazzei. 2010. Regional synthesis of habitat relationships in shrubland birds. *Journal of Wildlife Management* 74:1513–1522.

2009

- Chavez-Arce, V.J.R. Raudales, R. Trubey, D.I. King, R.B. Chandler, and C. Chandler. 2009. Measuring and managing the environmental costs of coffee production in Latin America. *Conservation and Society* 7:141–144.

- Wolfe, J.D., R.B. Chandler, and D.I. King. 2009. Molt patterns, age, and sex criteria for selected highland Costa Rica landbirds. *Ornithología Neotropical* 20:451–459.
- Chandler, R.B., D.I. King, and C.C. Chandler. 2009. Effects of management regime on the abundance and nest survival of shrubland birds in wildlife openings in northern New England, USA. *Forest Ecology and Management* 258:1669–1676.
- Chandler, R.B., King, D.I., and S. DeStefano. 2009. Scrub-shrub bird habitat associations at multiple spatial scales in beaver meadows in Massachusetts. *Auk* 126: 186–197.
- King, D.I., R.B. Chandler, S. Schlossberg, and C.C. Chandler. 2009. Habitat use and nest success of scrub-shrub birds in wildlife and silvicultural openings in western Massachusetts, U.S.A. *Forest Ecology and Management* 257:421–426.
- King, D.I., R.B. Chandler, J.M. Collins, W.R. Peterson, and T.E. Lautzenheiser. 2009. Effects of width, edge and habitat on the abundance and nesting success of scrub-shrub birds in powerline corridors. *Biological Conservation* 142:2672–2680.

2004

- Chandler R.B., A.M. Strong, and C.C. Kaufman. 2004. Elevated lead levels in urban house sparrows: A threat to sharp-shinned hawks and merlins? *Journal of Raptor Research* 38:62–68.

Book chapters

- Chandler, R.B., S. Tolfree, J. Gerwin, C. Smalling, L. Chavarría-Duriaux, G. Duriaux, and D.I. King. 2015. Conservation implications of golden-winged warbler social and foraging behaviors during the nonbreeding season. *In Golden-winged Warbler Ecology, Conservation, and Management* (Streby, H.M., D.E. Anderson, and D.A. Buehler, eds.), *Studies in Avian Biology* 49:175–192. CRC Press.
- King, D.I., R.B. Chandler, C. Smalling, R. Trubey, R. Raudales, and T. Will. 2016. Nonbreeding golden-winged warbler habitat: status, conservation, and needs. *In Golden-winged Warbler Ecology, Conservation, and Management* (Streby, H.M., D.E. Anderson, and D.A. Buehler, eds.), *Studies in Avian Biology* 29:29–38. CRC Press.
- Rosenberg, K.V., T. Will, D.A. Buehler, S.B. Swarthout, W.E. Thogmartin, and R.B. Chandler. 2016. Historic and current distribution and population status of golden-winged warblers. *In Golden-winged Warbler Ecology, Conservation, and Management* (Streby, H.M., D.E. Anderson, and D.A. Buehler, eds.), *Studies in Avian Biology* 49:3–28. CRC Press.
- King, D.I., R.B. Chandler, J.H. Rappole, R. Raudales, and R. Trubey. 2012. Community-Based Agroforestry Initiatives in Nicaragua and Costa Rica for Biodiversity Conservation. Pages 99–115 *In Biodiversity conservation in agroforestry landscapes: challenges and opportunities*. Javier Simonetti, Audrey A. Grez Cristián, F. Estades and Jorge Pérez, *Eds.* Universidad de Chile Press.

Presentations

Invited

- Chandler, RB, MJ Cherry, KV Miller, LM Conner, RJ Warren, E Garrison, D Shindle, D Crawford, B Kelly, and K Engebretsen. 2016. Efficient monitoring of unmarked prey populations by combining camera and telemetry data. The 23rd Annual Meeting of The Wildlife Society. Raleigh, NC.
- Chandler, RB, RJ Cooper, J Hepinstall-Cymerman, S Merker, R Chitwood, H Abernathy. 2016. Spatially explicit integrated population models for understanding the mechanisms governing range shifts. North American Ornithological Conference, Washington DC.
- Chandler, R.B. 2016. Narrowing the divide between ecological theory and practice with hierarchical spatial models. Department of Forest and Wildlife Ecology, University of Wisconsin Madison.
- Chandler, R.B. 2015. Modeling population dynamics using data from marked and unmarked individuals. 22nd Annual Conference of The Wildlife Society. Winnipeg, Manitoba.
- Chandler, R.B. and P.E. Howell. 2015. Integrating landscape resistance into spatial metapopulation models. Computational Ecology and Epidemiology Study Group. Odum School of Ecology, University of Georgia.
- Chandler, R.B. 2015. Estimating Deer Density by Combining Camera and Telemetry Data. Annual meeting of the Georgia Chapter of The Wildlife Society. Athens, GA.
- Chandler, R.B. and S.A. Merker. 2015. Integrated population models for predicting spatial and temporal dynamics at range margins. 100th Annual Conference of the Ecological Society of America. Baltimore, MD.
- Chandler, R.B. and P. Howell. 2015. Integrating landscape resistance into spatial metapopulation models. Odum School of Ecology, University of Georgia.
- Chandler, R.B. 2015. Spatial correlation as information about ecological processes. Warnell School of Forestry, University of Georgia.
- Chandler, R.B. 2014. The role of spatial models in applied ecological research. Auburn University.
- Chandler, R.B. and J.D. Clark. 2013. Cost-efficient monitoring using capture-recapture methods. The Georgia Chapter Meeting of the Wildlife Society. Athens, GA.
- Chandler, R.B. 2012. Land-sparing coffee production systems for avian conservation. Smithsonian Migratory Bird Center.
- Chandler, R.B., 2012. Population dynamics and species distributions following secondary contact. University of New Hampshire.
- Chandler, R.B., J.A. Royle, J. Sauer, and K. Pardieck. 2012. Modeling population dynamics and detection probability using Breeding Bird Survey data. 18th Annual

Meeting of the Wildlife Society. Waikoloa, HI.

- Chandler, R.B. 2011. Modeling population dynamics and detection probability using Breeding Bird Survey data. The International Environmetrics Society's Third North American Regional Meeting. La Crosse, WI.
- Chandler, R.B., D.I. King, and K.V. Rosenberg. 2010. Monitoring Neotropical-Nearctic migratory birds during the non-breeding season. Midwest Fish and Wildlife Conference. Minneapolis, MN.

Contributed

- Chandler, R.B., E. Muths, B. Sigafus, C. Schwalbe, C. Jarchow, and B. Hossack. 2014. Spatial occupancy models for metapopulation viability analysis. The International Statistical Ecology Conference. Montpellier, France.
- Chandler, R.B. and D.I. King. 2009. Golden-winged Warbler habitat selection in Costa Rica. 127th Stated Meeting of the American Ornithologists Union. Philadelphia, PA.
- Chandler, R.B., D.I. King, and C.C. Chandler. 2008. Conservation implications of Golden-winged Warbler non-breeding ecology in a forest-agriculture mosaic in Costa Rica. 126th Stated Meeting of the American Ornithologists Union. Portland, OR.
- Chandler, R.B., D.I. King, V.J. Chavez A., C.C. Chandler, R. Raudales, and R. Trubey. 2007. Species richness, composition, and body condition in a novel coffee cultivation system "Integrated Open Canopy" in Costa Rica. 125th State Meeting of the American Ornithologists Union. Laramie, WY.
- Chandler R.B., D.I. King, and C.C. Chandler. 2005. Effects of patch size and treatment method on early-successional birds in managed shrublands in New Hampshire. 123rd State Meeting of the American Ornithologists Union meeting, Santa Barbara, CA.
- Chandler. C.C., D.I. King and R.B. Chandler. 2005. Habitat use of Neotropical migrant birds during the pre-migratory period. 123rd Stated Meeting of the American Ornithologists Union, Santa Barbara, CA.

Grants

- Migratory connectivity of wintering golden-winged warblers. PI. Subcontract from Indiana University of Pennsylvania. \$13,200.
- Habitat loss and fragmentation effects on northern bobwhites and eastern meadowlarks. Co-PI with Dr. James Martin, Dr. Clint Moore, Dr. Jim Giocomo, and Dr. Myung-Bok Lee. \$50,000.
- Effects of conservation reserve enhancement program on bird populations at local landscape scales in Kentucky. Co-PI with Dr. James Martin. \$22,965.
- Population dynamics and viability of white-tailed deer and Florida panther in a rapidly changing environment. 2014. PI with Dr. Karl Miller, Dr. Robert Warren, and Dr. Mike Conner. Florida Freshwater Fish and Wildlife Commission. \$1,400,000.

- Refining post-delisting monitoring for Louisiana black bears. 2014. PI with Dr. Joseph Clark. Louisiana Department of Wildlife and Fisheries. Subcontract through University of Tennessee. \$82,000.
- Development and evaluation of an unbaited camera survey technique for estimating demographic parameters of white-tailed deer. 2014. Co-PI with Dr. Karl Miller. \$374,000.
- Integrating metapopulation ecology and landscape ecology for improved population viability analysis and conservation decision-making. 2013. Co-PI with Dr. Blake Hossack, Dr. Erin Muths, and Dr. Brian Irwin. U.S. Geological survey. \$210,000.
- Estimating population size and viability of the Central Georgia black bear population. 2013. Co-PI with Dr. Michael Chamberlain. Georgia Department of Natural Resources. 2014–2016. \$366,000.
- Analysis of golden-winged warbler winter distribution data. 2011. Cornell Lab of Ornithology. \$12,000.
- Development of the **R** Package `unmarked` to Analyze Data from Long-term Monitoring Programs. 2011–2012. National Park Service. \$50,000.
- Habitat Selection and Habitat-specific Survival of Wintering Golden-winged Warblers (*Vermivora chrysoptera*) in Managed Landscapes in Costa Rica. 2009–2010. USDA Forest Service International Programs. \$64,000.
- Migratory Bird Conservation Using Alternative Coffee Cultivation and Processing Methodologies. 2006–2008. US Fish and Wildlife Service, Division of Bird Habitat Conservation. (with the Mesoamerican Development Institute). \$137,000.

Awards and Honors

- Elected Treasurer of the Wildlife Society’s Biometrics Working Group. 2015.
- Elected to the board of the Wildlife Society’s Biometrics Working Group. 2014.
- Named Elective Member of the American Ornithologists’ Union, 2013.
- Co-recipient of the Wildlife Society’s 2013 spatial ecology award for the development of the **R** package `unmarked`
- Co-recipient of the 2009 US Forest Service “Wings Across the Americas Award” for outstanding research achievement in protection of migratory birds and their habitat.
- American Ornithologists’ Union Student Travel Award. June 2007.
- Dean’s Junior Book Award for outstanding academic achievement and leadership potential. University of Vermont. May 2001.
- Office of Sponsored Programs, University of Vermont award for outstanding undergraduate research. October 2000.

Teaching

Courses at UGA

- Experimental Design and Analysis. FANR 6750. Co-instructed with Dr. Robert Cooper. (Fall 2013–2016)
- Applied Population Dynamics. WILD 5700/7700. (Spring 2014–2016)
- Spatial Capture-Recapture. WILD 8300. (Spring 2015 & 2016)
- Conserving Wildlife in Agricultural Landscapes. WILD 5300/7300. (Fall, 2014)

Workshops

- Spatial capture-recapture workshop. Oct 2016. The Wildlife Society Conference, Raleigh NC. With J.A. Royle and C. Sutherland.
- Spatial capture-recapture workshop. July 2016. University of Georgia. With J.A. Royle and B. Augustine.
- Spatial capture-recapture workshop. March 2015. University of Georgia. With J.A. Royle and J. Laufenberg.
- Hierarchical models for abundance, distribution and species richness in spatially-structured populations using **unmarked** and **WinBUGS**. Workshop at Patuxent Wildlife. Nov 2012 with M. Kéry and J.A. Royle.
- Estimating avian abundance and occupancy with marked and unmarked individuals. Workshop given at the 5th North American Ornithological Conference, Vancouver, British Columbia, Canada in August 2012. With E. Cooch, P. Doherty, and J.D. Nichols.
- Hierarchical modeling using the R package **unmarked**. Workshop given at International Statistical Ecology Conference with J.A. Royle. July 2012. <http://www.cees.uio.no/isec2012/workshops/unmarked.html>
- Hierarchical models for abundance, distribution and species richness in spatially-structured populations using **unmarked** and **WinBUGS**. Workshop at Patuxent Wildlife. April 2012 with M. Kéry and J.A. Royle.
- Analysis of wildlife occurrence and abundance data using the **R** package **unmarked**. January 2012. With J.A. Royle. <https://sites.google.com/site/unmarkedinfo/home/webinars/2012-january>
- Hierarchical models of wildlife occurrence, abundance, and survival. 2011. Graduate-level course taught at UMass. With W. Deluca. <https://sites.google.com/site/hierarchicalmodelingcourse/>
- Monitoring Nearctic birds in the Neotropics. 2008. Field course taught to Latin American researchers in Colombia.

Referee Service

Animal Conservation, Annals of Applied Statistics, The Auk, Biometrics, Canadian Journal of Fisheries and Aquatic Sciences, Diversity and Distributions, Ecography, Ecology, Ecology Letters, Folia Zoologica, Ibis, Journal of Applied Ecology, Journal of Mammology, Methods in Ecology and Evolution, Ornothología Neotropical, PLoS One.

Advising

Graduate students

- Paige Howell, PhD candidate. Spatial metapopulation models for informing conservation decisions.
- Joel Owen, MS candidate. Conservation of trailing-edge populations.
- An Chee Hsiung, MS candidate. Conservation in tropical agricultural landscapes.
- Samuel Merker, MS candidate. Investigating the factors limiting species distributions at low latitude range margins.
- James Johnson, PhD candidate (co-advised with Dr. Karl Miller). Monitoring white-tailed deer populations using camera traps.
- Daniel Crawford, MS candidate (co-advised with Dr. Karl Miller). Resource selection of white-tailed deer in South Florida.
- Brian Kelly, MS candidate (co-advised with Dr. Karl Miller). Cause-specific mortality of white-tailed deer in South Florida.

Postdoctoral researchers

- Michael Cherry. Monitoring white-tailed deer and Florida panther population dynamics. Co-sponsored with Dr. Mike Conner, Dr. Robert Warren, and Dr. Karl Miller
- Jared Laufenberg. Refinements in monitoring methods for the Louisiana Black Bear. Co-sponsored with Dr. Joseph Clark.

Professional Memberships

Ecological Society of America, American Ornithologists' Union (Elective Member), The Wildlife Society, Society for Conservation Biology