

C. ASHTON DREW
KDV Decision Analysis LLC
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Core Competencies:

- Integrate data, knowledge, and values in data visualizations and statistical models with R
- Design adaptive management and monitoring solutions for complex and complicated systems
- Model systems to identify optimal management decisions given available resources and uncertainty

Education:

Beloit College, WI	Environmental Biology	BA 1995
Dalhousie University, NS	Marine Management	MMM 1996
North Carolina State University, NC	Marine Biology	PhD 2006
North Carolina State University, NC	Landscape Ecology	Post-doc 2006-11

Professional Work Experience:

- KDV Decision Analysis, 2015-present, Owner & Lead Consultant
- NCSU, 2011-2015, Research Coordinator, Environmental Decision Analysis
- NCSU, 2006-2011, Post-Doctoral Researcher, Biodiversity and Spatial Information Center
- NCSU, 2003-2005, Graduate Research Associate, Marine Ecology and Conservation Lab
- NCSU, 2000-2003, NSF Graduate Research Fellow, Marine Ecology and Conservation Lab
- NCSU, 1999-2000, Laboratory Technician, Marine Ecology and Conservation Lab
- US EPA, 1998-1999, Research Technician (contractor), Landscape Characterization Branch
- Axys Environmental Consulting, 1996-1998, Wildlife Biologist and GIS Technician
- Marine Biological Laboratory, 1993, NSF Research Experience for Undergraduates Intern

Selected Current and Past Projects:

“Automated collection and reporting of water resources information for National Wildlife Refuges” (USFWS 2019)

“New Zealand Department of Conservation budget exploration application rapid prototype” (NZDOC 2019)

“Preliminary data analysis of disturbance features in Eagle Plains” (YLUPC, 2018)

“Advancing transportation through linkages, automation and screening project” (HDR/NCDOT, 2017-2019)

“Application to visualize and report temporal trends in survey data” (Team Elements, 2017)

“R data visualization and report generation for leadership surveys and narrative data” (Onfoot Consulting, 2017)

“Generalized additive models to predict wetland occurrence for roadway planning” (Honestat/NCDOT, 2017)

“Shiny application and database for Puerto Rico endangered species recovery decision analysis” (NCSU, 2017)

“Shiny application for national endangered species prioritization protocol” (ASU, 2016)

“Assessment of South Atlantic Landscape Conservation Cooperative Terrestrial Indicators” (USFWS, 2013-2014)

“Vertebrate Biodiversity of Agricultural Fields: A Database and Metrics to Facilitate Conservation Partnerships in Productive Landscapes” (co-PI with J. Collazo, NC Wildlife Resources Commission, \$401K, 2013-2016)

R Course Development and Instruction:

Co-Space, Yukon, Canada (2015-present): Intro to R, Graphing with R, Tidy R and Data Design, R Markdown, R Shiny, Spatial Data with R

Dept. Water Quality, Yukon, Canada (2016): Water quality metrics and statistics with R

Dept. Fisheries and Oceans, Yukon, Canada (2016): Introduction to data analysis and visualization with R

Transmitting Science, Barcelona, Spain (2017-present): Introduction to R, Interactive Data Visualization with R

Tutoring: 100+ hours of private instruction to individuals with data in marketing, natural sciences, and organizational development fields

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Selected Publications:

- Gerber LR, Runge MC, Maloney RF, Drew CA, Avery-Gomm S, Iacona GD, Brazil-Boast J, Crouse D, Epanchin-Niel RS, Hall SB, Maguire LA, Male T, Morgan D, Newman J, Possingham HP, Rumpff L, Weiss KCB, Wilson RS, Zablan MA (2018) Resources and recovery under the Endangered Species Act. *Science* 362 (6412): 284-286.
- Drew CA, Eddy M, Kwak T, Cope WG, Augspurger (2018) Hydrologic characteristics of freshwater mussel habitat: novel insights from modeled flows. *Freshwater Science* 37(2):343-356.
- Pickens B, Mordicai M, Drew CA, Alexander-Vaughn L, Keister A, Morris H, Collazo J (2017) Indicator-driven Conservation Planning Across Terrestrial, Freshwater Aquatic, and Marine Ecosystems of the South Atlantic, USA. *Journal of Fisheries and Wildlife Management* 8(1):219-233.
- Drew CA, Collazo JA (2014) Bayesian Networks as a Framework to Step-down and Support Strategic Habitat Conservation of Data-poor Species: A case study with King Rail (*Rallus elegans*) in Eastern North Carolina and Southeastern Virginia. Prepared for the USFWS Region 4, Raleigh Field Office by the USGS - NC Cooperative Fish and Wildlife Research Unit, North Carolina State University
- Drescher M, Perera AH, Johnson CJ, Buse LJ, Drew CA, and Burgman MA (2013) Toward rigorous use of expert knowledge in ecological research. *Ecosphere* 4(7): 83
- Costanza, JK, Abt R, Drew CA, Gonzales R, Collazo JC (2013) Modeling Impacts of Biomass Production on Landscapes and Wildlife: Final Report to the Biofuels Center of NC
- Drew CA, Alexander-Vaughn LB, Collazo JA, McKerrow A, Anderson J (2013) Developing an Outcome-based Biodiversity Metric in Support of the Field to Market Project. Technical Bulletin 334, NC Agricultural Research Service, College of Agriculture and Life Sciences, North Carolina State University
- Hightower, JE, Harris JE, Raabe JK, Brownell P, Drew CA (2012) Habitat suitability models for American shad in southeastern rivers. *Journal of Fish and Wildlife Management* 3(2):184-198
- Perera AH, Drew CA, Johnson CJ (eds) (2011) Expert Knowledge and its Application in Landscape Ecology. Springer, New York
- Pijanowski B, Iverson L, Rhemtulla J, Wimberly M, Drew CA, Bartsch A, Bulley H, Peng J (2010) Addressing the interplay between poverty and landscapes: a grand challenge topic for landscape ecologists. *Landscape Ecology* 25:5-16
- Drew CA, Wiersma Y, Huettmann FH (eds) (2010) Predictive Species and Habitat Modeling in Landscape Ecology: Concepts and Applications. Springer, New York
- Hess GR, Rubino MJ, Koch FH, Eschelbach KA, Drew CA, Favreau JM (2006) Comparing the potential effectiveness of conservation planning approaches in central North Carolina, USA. *Biological Conservation* 128: 358-368
- Favreau JM, Drew CA, Hess GR, Eschelbach KA, Rubino MJ, Koch FH (2006) Recommendations for assessing the effectiveness of surrogate species approaches. *Biodiversity and Conservation* 15: 3949-3969

Certifications and Training

- R Studio Master R Workshops (2017 & 2018)
- Reproducible Research Methods for Data Sciences (2015)
- SenseMaker Environments (2015) and Signification Design (2015)
- Analysis of Community Data with PCOrd and R (2014)
- Bayesian Network Analysis with Netica (2013)
- Introduction to R Programming (2012)
- Elicitor & Probability Elicitation through Scenario Analysis (2011)
- Modeling Patterns and Dynamics of Species Occurrence Workshop (2007)
- Model Based Inference in the Life Sciences Workshop (2007)
- ArcGIS and Spatial Analyst (2006); Introduction to Arc/Info (1999)