

# DIANE LE BOUILLE

◇ Curriculum Vitae ◇

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Landscape Scientist  
The Nature Conservancy  
Arizona Chapter, Tucson Office

## PROFESSIONAL APPOINTMENTS

<b>Landscape Scientist</b> 2024 - <i>present</i>	The Nature Conservancy Tucson, USA
<b>Postdoctoral Researcher</b> 2022 - 2024	USGS / Texas Tech University Lubbock, USA
<b>Adjunct Lecturer</b> 2022 - 2023	University of Tennessee, Knoxville (remote)
<b>Postdoctoral Researcher</b> 2020 - 2022	Baylor University Waco, USA

## EDUCATION

<b>Ph.D. Student</b> 2014 - 2020	University of Tennessee Knoxville, USA
<b>M.Sc. - Ecology, Biodiversity, Evolution - Specialization in Conservation</b> 2010 - 2012	University P. and M. Curie Paris, France
<b>M.Sc. - Ecology</b> 2009 - 2010	University of Aberdeen Aberdeen, Scotland
<b>B.Sc. - Organismal Biology</b> 2008 - 2009	University of Bordeaux 1 Bordeaux, France

## SKILLS

<b>Programming Languages</b>	Python, R, C/C++, Matlab, VBA
<b>Theoretical knowledge</b>	Ecology, Evolution, Conservation & Restoration Ecology Micro Economics, Natural Resources Economics Mathematical Optimization, Spatial Analysis, Statistics (frequentist & Bayesian)
<b>Software &amp; Tools</b>	Remote sensing, GIS tools (ArcGIS, Arcpy), GPS tracking, Network sciences (Pajek, Netdraw), Database (MySQL, PostgreSQL), Solvers (Maple, GAMS), Markup languages (HTML, CSS, LaTeX), Version Control (Git)
<b>Field-Based skills</b>	Fieldwork in strenuous and remote settings, Handling/Marking of vertebrates, Plant and animal identification

## RESEARCH EXPERIENCE

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### **Spatial analyses and optimizations**

*Researcher with The Nature Conservancy*

2024 - current  
*Arizona Chapter, Tucson AZ*

- Developing species distribution and flow regime models to assess the health and resilience of freshwater resources across the arid South-West
- Developing a tailored renewable energy siting tool for Arizona with corporate and governmental partners
- Assessing the potential of various approaches for heat mitigation in fast growing urban areas

### **Niche models and hierarchical prioritization for stream protection**

*Postdoctoral research - Jane ROGOSCH*

2022 - 2024  
*Texas Tech University, Lubbock TX*

- Developing species distribution models for at-risk fish species (SGCN)
- Hierarchical spatial prioritization of a conservation network (Native Fish Conservation Areas)
- Coordinate the use of supporting datasets and research products with conservation stakeholders

### **Freshwater conservation and water rights**

*Postdoctoral research - Ryan McMANAMAY*

2020 - 2021  
*Baylor University, Waco TX*

- Relating U.S. stream and lake network structures with likelihood of zebra and quagga mussels establishment
- Comparing flow recommendations and current inflow conditions across Texas's major basins, in relation to present and projected water use and withdrawal laws

### **Costs of Protected Areas in the U.S.**

*PhD Dissertation - Paul ARMSWORTH*

2014 - 2020  
*University of Tennessee, Knoxville*

- Describing and explaining the spatial and temporal variations in conservation costs and funding for protected areas across the U.S.

### **Behavioural Shifts and Human Avoidance in Wolves**

*Master Thesis 2 - Luigi BOITANI, Paolo CIUCCI*

2012 - 7 months  
*University of Rome, Italy*

- Activity budgets and movement patterns of GPS-collared wolves in the Abruzzo, Lazio and Molise National Park (central Italy) in relation to human activity in the park

### **Road Kill Risk Assessment and Snake Conservation**

*Master Thesis 1 - Jean CLOBERT, Xavier BONNET*

2011 - 6 months  
*CNRS Labs of Moulis (Eco-Ex) and Chize (CEBC), France*

- Demographic study of snake populations in France by mark-capture-recapture, assessing population movements and deriving conservation measure - seasonal road closures

### **Metapopulation Dynamics and Generational Dispersal in Water Voles**

*Graduate Research Project - Xavier LAMBIN*

2010 - 3 months  
*University of Aberdeen, Scotland*

- Characterisation of Highland water vole dispersal network within and among metapopulations using kinship analyses and network science

### **Sex-biased Dispersal During Range Advance**

*Graduate Research Project - Justin TRAVIS*

2010 - 6 weeks  
*University of Aberdeen, Scotland*

- Modelling the erosion of sex-biased dispersal at the advancing range edge for an invasive species - theoretical modelling, Australian Cane Toads used as case study

### **Acid Rains and Erosion of Biodiversity in French Prairies**

*Undergraduate Thesis - Didier ALARD, Emmanuel CORCKET*

2009 - 3 months  
*University of Bordeaux 1, France*

- Impacts of nitrogen atmospheric pollution on prairies in the S-W of France. Direct species counts and greenhouse germination, growth and survival rates experiments.

## PUBLICATIONS

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- Armsworth P., Dilkina B., Fargione J., Fisher M., Fovargue R., Harris J., Jackson H., **Le Bouille D.** and Nolte C. (2024) *Optimal conservation outcomes consider donor geography and their willingness to support more distant projects*. Biological Conservation
- **Le Bouille D.** and Armsworth P. (2023) *The cost of buying land for protected areas in the United States*. Biological Conservation
- Armsworth P., Dilkina B., Fargione J., Fisher M., Fovargue R., Harris J., Jackson H., **Le Bouille D.**, Nolte C. and Richards C. (2023) *Multiplying the impact of biodiversity conservation funding using spatial exchange rates*. Frontiers in Ecology and the Environment
- **Le Bouille D.**, Armsworth P. and Fargione J. (2022) *Spatio-temporal variation in costs of managing protected areas*. Conservation Science and Practice
- Hyman A., **Le Bouille D.**, Zhu G. and Armsworth P. (2022) *Variation in preferences describing how to value the future among conservation practitioners and its implications for today's protection priorities*. Biological Conservation
- Pinnschmidt A., Hoogstra M., Fovargue R., **Le Bouille D.**, Fisher M., Harris J., Armsworth P. (2021) *Land trust investments in land protection may increase philanthropic giving to conservation*. Ecological Economics
- Armsworth P., Benefield A., Dilkina B., Fovargue R., Jackson H., **Le Bouille D.** and Nolte C. (2020) *Allocating resources for land protection using continuous optimization: biodiversity conservation in the United States*. Ecological Applications

## MANUSCRIPTS IN PREPARATION

1. **Le Bouille D.** and Armsworth P. (2025) *Predicting bargains sales occurrence and magnitude in land transactions for conservation in the U.S.*
2. **Le Bouille D.** and McManamay R. (2025) *Analysis of flow standards and recommendations in Texas rivers*
3. **Le Bouille D.**, Rogosch J., Bean M., Birdsong T., Broska J., Bunting D., Cohen A., Hendrickson D. and Smith, N. (2026) *Patterns of species richness and vulnerability across Texas' streams*
4. Armsworth P., Fovargue R., Jackson H., Kroetz K. and **Le Bouille D.** (2026) *Sources of support for conservation overlap locations offering the biggest impact when seeking to protect species and ecosystem services in the U.S.*

## BOOK CHAPTER

Lambin X., **Le Bouille D.**, Oliver M.K., Sutherland C., Tedesco E. and Douglas A. (2012) *High connectivity despite high fragmentation: iterated dispersal in a vertebrate metapopulation*. In: Dispersal Ecology and Evolution (chap. 32) Clobert et al. Editors, Oxford University Press.

## AWARDS AND FELLOWSHIPS

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2020 to 2022 - PNNL, Integrated Multisector Multiscale Modeling initiative	\$7,000
2019 - NIMBioS Graduate Awards - Competitive, Project-Based Award	\$2,500
2015 to 2019 - UT Competitive Yearly Research Awards and Project-based Travel Grants	\$5,000
2015 to 2019 - Chancellor Funds - Based on Application and Research Proposal Merit	\$25,000
2017 to 2018 - NIMBioS Graduate Research Assistant Fellowship	\$50,000
2012 - Six-Month Scholarship for MSc Research Project and Thesis	Equiv. \$3,300
2010 to 2012 - French Governmental Grant - Merit Based, Gov. Sponsorship for MSc	Equiv. \$10,000
2009 to 2010 - Erasmus Waivers and Scholarship to Study Abroad - U. of Aberdeen	Equiv. \$31,500

## CONFERENCES AND PRESENTATIONS

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### SYMPOSIUM

- NACCB 2022 - Le Bouille D. and Nolte C., *Strategies to Estimate the Costs of 30x30 Protection Actions Over Large Scales in the United States: Approaches, Standards and Evidence*

## PRESENTATIONS

- One Conservancy Science Gathering 2024 - Le Bouille D. et al., A new freshwater assessment for the arid South-West.
- CASC, South Central Center 2023 - Le Bouille D. et al., Patterns of biodiversity and vulnerability across Texas' watersheds and what it means for the State Wildlife Action Plan.
- ESA 2023 - Le Bouille D. et al., Species distribution modeling of Texas SGCN fishes to guide landscape-level conservation.
- AFS, TX Chapter 2023 - Le Bouille D. and Rogosch J., Species distribution modeling and projecting shifts in a changing world.
- ESA 2021 - Le Bouille D. and McManamay R., Analysis of Flow Standards and Recommendations in Texas Rivers
- ESA 2019 - Le Bouille D., Armsworth P. and Fargione J., What drives the cost of U.S. conservation?
- NACCB 2018 - Le Bouille D., Armsworth P. and Fargione J., Accurate acquisition cost prediction for optimal reserve planning
- ESA 2016 - Le Bouille D. and Armsworth P., The real cost of acquiring lands for conservation
- NACCB 2016 - Le Bouille D. and Armsworth P., Investigating the dynamic patterns of management costs in protected areas
- ESA 2015 - Le Bouille D., Armsworth P. and Iacona G., The time path of investments for the management of protected areas

## WORKSHOPS

- NIMBioS 2019-2020 - Workshop Facilitation for NIMBioS International Working Groups

## TEACHING EXPERIENCE

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### Adjunct Lecturer

2022 - 2023

EEB Department

University of Tennessee, Knoxville

- Landscape Ecology - EEB 422
- Conservation Decision Making - EEB 423
- Conservation Biology - EEB 484
- Perspective in Ecology and Evolutionary Bio. - EEB 409

### Teaching Assistant

2015-2020

EEB Department

University of Tennessee, Knoxville

- Mathematical Models in Biology - EEB/MATH 406
- GIS and Niche Modeling - EEB/GEO 550
- Research Ethics - PHILO/EEB 504
- Organismal and Ecological Biology, *Hons.* - BIO 158
- Organismal and Ecological Biology - BIO 150
- Cell Biology - BIO 140

## EXTRA TRAINING AND CERTIFICATIONS

Associate Level of CIRTL certification (Summer 2017) + Best Practices in STEM Teaching (Fall 2016)

## RESEARCH SUPERVISION AND MENTORING EXPERIENCE

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### Research Supervision

2023

USGS-TTU Coop. Research Unit

Texas Tech University, Lubbock

- David Creamer - Master Student (now PhD Student East Carolina University)
- Cienna Hanson - Master Student (graduating 2024)

## Academic Mentoring

EEB Department

2018-2020

University of Tennessee, Knoxville

- Undergraduate Mentoring Program
- Women in STEM Mentoring Group

## EXTRA TRAINING AND CERTIFICATIONS

Science Communication and Policy - ESA (Spring 2020) + ORI Research Ethics Certification (Spring 2017)

## OUTREACH AND SYNERGISTIC ACTIVITIES

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### Waco Backyard Farming Association

2023-current - Local Association

Bringing bio-diverse backyards, sustainable gardening and food security to all through grass-root, community lead efforts.

- ◇ Group creator, Event Leader

### TX A&M AgriLife Extension - Waco (TX)

2023-current - McLennan County

- ◇ Master Gardener

### Volunteering - Waco (TX)

2022 - After-School Program

Homework help and enrichment activities offered to underprivileged youth in Waco

- ◇ STEM Instructor

### EKEE - University of Tennessee

2015-2019 - Graduate Outreach Committee

Outreach activities in zoos, farmers' market, fairs

- ◇ Head of Tabling Events

### KidsU - University of Tennessee

Summer 2019 - Learning Summer Camp

Class Design, Teaching, Field Trips - Age 9-12

- ◇ Teacher, Activity Leader

### UT's Darwin Day - University of Tennessee

2018 - Science Communication Event

Advertisement and material creation

Design of activities, Open seminars organizer

- ◇ Event Organizer

### Naturalist Organization Timarcha - UPMC, Paris

2011-2012 - Graduate Organization

- ◇ Board Member, Event Leader

## PROFESSIONAL ACTIVITIES AND SERVICES

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### Manuscript Review

for Conservation Letters, Ecological Applications,  
J. of Environmental Management, Biological Conservation

### Grant Panels

NSF DISES grant program 2023

### University Services

Departmental Senator - UTK Graduate Student Senate  
Vice President - Baylor University Postdoc Association

### Professional Membership

Ecological Society of America (ESA), Society for Conservation Biology (SCB),  
French Society for Ecology and Evolution (SFE<sup>2</sup>), American Fisheries Society (ASF)

## LANGUAGES

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### English

Fluent

### French

Native

### Spanish

Working Proficiency