

DIANE LE BOUILLE

◇ Curriculum Vitae ◇

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Landscape Scientist
The Nature Conservancy
Arizona Chapter, Tucson Office

PROFESSIONAL APPOINTMENTS

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

EDUCATION

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

SKILLS

Programming Languages	Python, R, C/C++, Matlab, VBA
Theoretical knowledge	Ecology, Evolution, Conservation & Restoration Ecology Micro Economics, Natural Resources Economics Mathematical Optimization, Spatial Analysis, Statistics (frequentist & Bayesian)
Software & Tools	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)
Field-Based skills	Fieldwork in strenuous and remote settings, Handling/Marking of vertebrates, Plant and animal identification

RESEARCH EXPERIENCE

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

- 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

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

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

Adjunct Lecturer

EEB Department

2022 - 2023

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

EEB Department

2015-2020

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

Research Supervision

USGS-TTU Coop. Research Unit

2023

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

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

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 (SFE²), American Fisheries Society (ASF)

LANGUAGES

English

Fluent

French

Native

Spanish

Working Proficiency