

CURRICULUM VITAE

Michael L. Treglia, Ph.D.

Lead Scientist
The Nature Conservancy, New York State Cities Program
322 Eighth Ave, 16th Floor
New York, NY 10001

E-mail: michael.treglia@tnc.org
Website: <http://mltconsecol.github.io/>

Research Interests

I focus on identifying opportunities for biodiversity conservation and improved environmental quality for people while advancing analytical techniques and our understanding of ecology. I integrate methods from statistics, GIS, and remote sensing to study landscape-scale patterns and processes, working closely with collaborators. My research has historically largely focused on anthropogenic threats to herpetofauna, though at The Nature Conservancy I have generally focused on urban social-ecological systems, primarily in New York City.

Education

2009-2014 Ph.D., Dept. of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX.
2007-2010 M.S., Dept. of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX.
2004-2007 B.S., Natural Resources, Cornell University, Ithaca, NY.

Professional Experience

2020-Pres **Lead Scientist, New York State Cities Program at The Nature Conservancy.** Oversees science efforts for The Nature Conservancy's work in Cities across New York State, while also leveraging GIS and Remote Sensing technologies to understand the roles that open space plays for local ecosystems and people. Supervisor: Ms. Emily Maxwell, The Nature Conservancy.

2016-20 **Urban Spatial Planner, NYC Program, The Nature Conservancy.** Focused on understanding dynamics of open space in New York City using GIS and Remote Sensing data, and quantifying the roles that open space plays for native ecosystems and people. Supervisor: Ms. Emily Maxwell, The Nature Conservancy.

2014-16 **Postdoctoral Scholar.** Focused on understanding relationships between environmental variability across multiple scales and biodiversity; worked as part of the Oklahoma NSF-EPSCoR Program. Supervisor: Dr. Ron Bonett, University of Tulsa.

2009-14 **Doctoral Dissertation.** Title: *Conservation of the endangered Arroyo Toad across multiple scales*. Five chapters focused on identifying threats to, and conservation opportunities for, the Arroyo Toad (*Anaxyrus californicus*). Supervisor: Dr. Lee Fitzgerald, Texas A&M University.

2007-10 **Master's Thesis.** Title: *A translocated population of the St. Croix Ground Lizard: Analyzing its detection probability and investigating its impacts on the local prey base*. Four chapters focused on understanding the ecology of the endangered St. Croix Ground Lizard (*Ameiva polops*), and examining effects of the species' detectability on monitoring. Supervisor: Dr. Lee Fitzgerald, Texas A&M University.

- 2007 **Research Assistant.** Collected field data for a long-term study on relationships between forestry management, coarse woody debris, and biodiversity. Supervisor: Dr. Stephen Morreale, Cornell University.
- 2005-07 **Research Assistant.** Maintained collection of live reptiles for research and teaching, including over 40 venomous snakes and lizards. Supervisor: Dr. Harry Greene, Cornell University.
- 2006 **NSF-REU Intern.** Conducted undergraduate research on reptiles and amphibians of St. Vincent, Lesser Antilles, resulting in four publications. Supervisor: Dr. Robert Powell, Avila University.
- 2005 **Urban Park Ranger for NYC Dept. of Parks and Recreation.** Conducted public outreach and led educational programs in New York City parks as a summer employee.
- 2004-05 **Lab Assistant.** Set up soil samples for chemical analysis with gas chromatograph. Supervisor: Dr. Joseph Yavitt, Cornell University.

Publications

14. Clay, T. A., M. A. Steffen, **M. L. Treglia**, C. D. Torres, A. L. Trujano-Alvarez, and R. M. Bonett. 2019. Multiple stressors produce differential transcriptomic patterns in a stream-dwelling salamander. *BMC Genomics* 20(1):482. DOI: 10.1186/s12864-019-5814-y
13. **Treglia, M.L.**, A.C. Landon, R.N. Fisher, G. Kyle, L.A. Fitzgerald. 2018. Multi-scale effects of land cover and urbanization on the habitat suitability of an endangered toad. *Biological Conservation* 228, 310–318. DOI: 10.1016/j.biocon.2018.10.032.
12. Wang, H.-H., C.L. Wonkka, **M.L. Treglia**, W.E. Grant, F.E. Smeins, and W.E. Rogers. 2018. Incorporating local-scale variables into distribution models enhances predictability for rare plant species with biological dependencies. *Biodiversity and Conservation*:1–12. DOI: 10.1007/s10531-018-1645-4
11. Schaffer-Smith, D., S. Tomasha, K. Jarvis, D. Maguire, **M.L. Treglia**, J. Liu. 2018. Network analysis as a tool for quantifying the dynamics of metacoupled systems: an example using global soybean trade. *Ecology and Society*: 23(4):3 DOI: 10.5751/ES-10460-230403
10. Liu, J., Y. Dou, M. Batistella, E. Challies, T. Connor, C. Friis, J.D.A. Millington, E. Parish, C.L. Romulo, R.F.B. Silva, H. Triezenberg, H. Yang, Z. Zhao, K.S. Zimmerer, F. Huettmann, **M.L. Treglia**, et al. 2018. Spillover systems in a telecoupled Anthropocene: typology, methods, and governance for global sustainability. *Current Opinion in Environmental Sustainability*. DOI: 10.1016/j.cosust.2018.04.009.
9. Fitzgerald, L.A., **M.L. Treglia**, N. Angeli, T.J. Hibbitts, D.J. Leavitt, A.L. Subalusky, I. Lundgren, and Z. Hillis-Starr. 2015. Determinants of successful establishment of a new population of the critically endangered St. Croix Ground Lizard (Teiidae: *Ameiva polops*). *Restoration Ecology*. DOI: 10.1111/rec.12248
8. **Treglia, M.L.**, R.N. Fisher, and L.A. Fitzgerald. 2015 Integrating potential and current species distribution models to identify conservation opportunities for an endangered toad. *PLoS ONE*. DOI: 10.1371/journal.pone.0131628
7. Wang, H.H., C.L. Wonka, **M.L. Treglia**, W.E. Grant, F.E. Smeins, W.E. Rogers. 2015. Species distribution modeling of an endangered endemic orchid, *Spiranthes parksii* (Correll). *AoB Plants*. DOI: 10.1093/aobpla/plv039
6. **Treglia, M.L.**, J. Valiulis, D. J. Leavitt, and L.A. Fitzgerald. 2013. Establishment of the Puerto Rican Ground Lizard (*Ameiva exsul*: Teiidae), on St. Croix, U.S. Virgin Islands: a threat to native fauna. *Caribbean Journal of Science* 47(2-3): 373-378. DOI: 10.18475/cjos.v47i3.a26
5. **Treglia, M.L.** and L.A. Fitzgerald. 2011. Translocation of the St. Croix ground lizard to Buck Island Reef National Monument, St. Croix, U.S. Virgin Islands. Pp. 109-115. In. Soorae P.S. (ed.) (2011). *Global Re-introduction Perspectives: 2011. More case studies from around the globe*. Gland, Switzerland:

IUCN/SSC Re-introduction Specialist Group and Abu Dhabi, UAE: Environment Agency-Abu Dhabi. xiv +250 pp.

4. **Treglia, M.L.**, O. Ramirez. 2009. *Nerodia rhombifer*. Geographic distribution. *Herpetological Review* 40(2):238.
3. **Treglia, M.L.**, A.J. Muensch, R. Powell, and J.S. Parmerlee, Jr. 2008. An invasive anole, *Anolis sagrei* on St. Vincent and its potential impact on native anoles. *Caribbean Journal of Science* 44(2):251–256.
2. Henderson, R.W., **M.L. Treglia**, and S.D. Powell. 2008. *Corallus cookii*. Foraging. *Herpetological Review* 38(4):466.
1. Powell, S.D., **M.L. Treglia**, R.W. Henderson, and R. Powell. 2007. Treeboas in the West Indies: responses of *Corallus cookii* and *C. grenadensis* to disturbed habitats. Pp. 374–387 in: R. W. Henderson and R. Powell (eds.). *Biology of the Boas and Pythons*. Eagle Mountain Publ., Utah.

In Review. **Treglia, M.L.**, T. McPhearson, E. Sanderson, G. Yetman, E.N. Maxwell. Characterizing Green Roofs of New York City. In Review at *Ecology and Society* (Accepted with Minor Revisions)

Technical Reports and Other Publications (including published datasets)

- | | |
|------|---|
| 2018 | Treglia, M.L. , T. McPhearson, E.W. Sanderson, G. Yetman, and E.N. Maxwell. Green Roofs Footprints for New York City, Assembled from Available Data and Remote Sensing (Version 1.0.0) [Data set]. <i>Zenodo</i> . DOI: 10.5281/zenodo.1469674 |
| | Treglia, M.L. 2015. An Introduction to GIS Using QGIS (v. 3.0). Training material for QGIS, available at: http://mltconsecol.github.io/QGIS-Tutorial/ . |
| 2017 | Treglia, M. L. , R. N. Fisher, and L. A. Fitzgerald. 2017. Potential and current distribution models for the endangered arroyo toad (<i>Anaxyrus californicus</i>). <i>KNB Data Repository</i> . DOI: 10.5063/F157190H |
| 2015 | Treglia, M.L. 2015. An Introduction to GIS Using QGIS (v. 2.6.1). Training material for QGIS. |
| 2014 | Treglia, M.L. 2014. Results of surveys for the endangered Arroyo Toad (<i>Anaxyrus californicus</i>) in 2013. <i>Annual Report to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife</i> . |
| 2013 | Daut, E. F., K. Dennis, E. Gómez-Ruiz, Z. Hurst, K. A. Roach, A. N. Santos, D. Toledo, M. L. Treglia , C. J. van Riper, and M. A. Wood. 2013. Reaching toward outward accountability of environmental non-governmental organizations. <i>Applied Biodiversity Sciences Perspectives Series</i> 3:1-6. |
| 2010 | Treglia, M. L. and L. A. Fitzgerald. 2010 The translocation of the St. Croix ground lizard, <i>Ameiva polops</i> , to Buck Island Reef National Monument. <i>Final Report to the National Park Service, U.S. Fish and Wildlife Service and Virgin Islands Department of Planning and Natural Resources</i> . |
| | Treglia, M. L. and L. A. Fitzgerald. 2010 Population estimation of the St. Croix ground lizard, <i>Ameiva polops</i> , on Protestant Cay and Ruth Cay, St. Croix, United States Virgin Islands. <i>Final Report to the United States Fish and Wildlife Service (Cooperative Agreement 401917J125)</i> . |
| 2006 | Treglia, M.L. 2006. An annotated checklist of the amphibians and reptiles of St. Vincent, West Indies. <i>Iguana</i> 13: 252–263. |

Fellowships, Grants, and Awards

- 2013-14 Tom Slick Doctoral Dissertation Fellowship. College of Agriculture and Life Sciences, Texas A&M University. \$25,000.
- 2013 Willie May Harris Fellowship for Outstanding Teaching Assistants, College of Agriculture and Life Sciences, Texas A&M University. \$12,000.
E. E. Williams Research Grant, The Herpetologists' League. \$1,000.
Sylvia Scholarship, Mensa Foundation. \$600.
- 2012, 2013 Travel Grants, Ecology and Evolutionary Biology Program at Texas A&M. \$675; \$700.
- 2010-12 NSF-IGERT Traineeship for the Applied Biodiversity Science Doctoral Program at Texas A&M University. \$84,000.
- 2009 Outstanding Master's Student, Department of Wildlife and Fisheries Sciences, Texas A&M University.
- 2008 2nd Place for Talk, "An Invasive Anole, *Anolis sagrei*, on St. Vincent and its Potential Impact on Native Anoles." Student Research Week, Texas A&M University.
- 2007-08 Regents Graduate Fellowship, Texas A&M University. \$15,000.

Oral Presentations at Major Conferences and Invited Presentations (* indicates Invited Presentation)

- 2019 **Treglia, M.L.** Green Roofs in NYC Where are they? Where are they needed? *Annual meeting of the Green Roof Researchers Alliance, New York, NY.*
***Treglia, M.L.** Open Tools & Open Data for Understanding Green Space in NYC. *Symposium of the Society for Conservation GIS – NY/NJ Chapter, New York, NY.*
- 2018 **Treglia, M.L.,** T. McPhearson, E.W. Sanderson, G. Yetman, E.N. Maxwell. Greenspaces over our heads: Mapping green roofs in NYC. *Annual Meeting of the International Association of Landscape Ecologists, Chicago, IL.*
- 2017 **Treglia, M.L.,** L.A. Alleman, E.N. Maxwell. Planning urban landscapes for people and pollinators: exploratory work in New York City. *Annual Meeting of the International Association of Landscape Ecologists, Baltimore, MD.*
Treglia, M.L., D. Schaffer-Smith, D. Maguire, S. Tomscha, J. Liu. Application of network analysis for quantifying dynamics of telecoupled systems: an example using global soy trade. *Annual Meeting of the International Association of Landscape Ecologists, Baltimore, MD.*
- 2015 Wang, H-H, C.L. Wonkka, **M.L. Treglia,** W.E. Grant, F.E. Smeins and W.E. Rogers. Edaphic determinants of the distribution of an endangered terrestrial orchid: using Maxent as an investigative tool for rare plant conservation. *Texas Plant Conservation Conference, Biennial Meeting, Fort Worth, Texas.*
- 2015 **Treglia, M.L.,** A. Mathews, and D. Wilson. Development of LiDAR-Based Data Products for Oklahoma. *Oklahoma Remote Sensing Workshop, Norman, OK.*
***Treglia, M.L.** Landscape-Scale Approaches Guide Conservation and Inform Ecology in a Complex World. *Lecture to the Anthropology Department at the University of Tulsa.*
Treglia, M.L., S.D. Martin, A.L. Boardman, and R.M. Bonett. Multi-scale influences of environmental variability on life history strategies of the Oklahoma salamander. *World Congress of the International Association of Landscape Ecologists, Portland, OR.*
- 2014 Wang, H.-H., C.L. Wonkka, **M.L. Treglia,** W.E. Grant, F.E. Smeins, and W.E. Rogers. Determinants and likelihood of occurrence of an endangered endemic orchid (*Spiranthes parksii* (Correll)) in central Texas. *Texas Plant Conservation Conference, Austin, TX.*

***Treglia, M.L.** Multi-Scale Conservation in an Altered Landscape: The Case of the Endangered Arroyo Toad in Southern California. *Department of Biological Science, The University of Tulsa, Tulsa, OK.*

Treglia, M.L. and G.T. Kyle. Estimating effects of land cover at multiple scales on habitat for the endangered arroyo toad. In J. Franklin, J.M. Sierra-Diaz, and L. Sweet (Chairs), *Impacts of Global Change: Linking Across Scales*. Symposium presented at the *Annual Meeting of the U.S. Regional Association of the International Association for Landscape Ecology, Anchorage, AK.*

2013 **Treglia, M.L.** and R.N. Fisher. Integrating Historic and Current Distribution Models of an Endangered Species to Benefit Conservation. *Annual Meeting of the U.S. Regional Association of the International Association for Landscape Ecology, Austin, TX.*

***Treglia, M.L.** Conservation of the Endangered St. Croix Ground Lizard. *Lecture to Aggies for the Protection of Endangered Species at Texas A&M University.*

2011 ***Treglia, M.L.** Manifold GIS: Exploring the Capabilities of an Alternative GIS Package. *U.S. Geological Survey, Western Ecological Research Center – San Diego Field Station. San Diego, CA.*

Treglia, M.L. Anthropogenic Disturbances and Conservation of Endangered Amphibians in a Semi-arid Landscape: A Proposal Talk. *12th Annual Ecological Integration Symposium, Texas A&M University.*

2010 **Treglia, M.L.** and L.A. Fitzgerald. Effects of an Insular Lizard Translocation on the Local Invertebrate Assemblage. *Annual Meeting of the Ecological Society of America, Pittsburgh, PA.*

Treglia, M.L. and L.A. Fitzgerald. Impacts of a Translocated Lizard on an Island Arthropod Assemblage. *11th Annual Ecological Integration Symposium, Texas A&M University.*

2009 **Treglia, M.L.** and L.A. Fitzgerald. Effects of Detectability on Lizard Population Estimates. *Annual Meeting of the Southwestern Association of Naturalists, Monterrey, Nuevo Leon, MX.*

2008 **Treglia, M.L.** *The Translocation of an Extirpated Lizard in the Caribbean: A Proposal Talk. Student Research Week/9th Annual Ecological Integration Symposium, Texas A&M University.*

Treglia, M.L., A.J. Muensch, R. Powell, J.S. Parmelee, Jr. An Invasive Anole: *Anolis sagrei* on St. Vincent and its Potential Impact on Native Anoles. *Student Research Week/9th Annual Ecological Integration Symposium, Texas A&M University.*

Poster Presentations (†indicates Mentored Student)

2020 **Treglia, M.L.,** and E.N. Maxwell. Greenspaces over our heads: Exploring need for green roofs across NYC. *Annual Meeting of the International Association of Landscape Ecologists, Chicago, IL.*

2015 †Mohanty, R.P. and **M.L. Treglia.** Modeling the Current and Future Distributions of *Juniperus virginiana* Across the Continental United States. *Oklahoma NSF-EPSCoR Annual Conference, Norman, OK*

Treglia, M.L., S.D. Martin, A.L. Boardman, and R.M. Bonett. Does Habitat Stability Promote the Loss of a Complex Life Cycle in a Stream-Associated Salamander? *Oklahoma NSF-EPSCoR Annual Conference, Norman, OK*

Treglia, M.L. and M.E. Young. Utilizing Patch Metrics to Improve Classification of Remote Sensing Imagery. *World Congress of the International Association of Landscape Ecologists, Portland, OR.*

2014 Lovette, J. T. Chang, **M.L. Treglia,** T. Gan, J. Duncan. Assessing Ecohydrological Impacts of Forest Disturbance Using Open Source Software. *Annual Meeting of the American Geophysical Union, San Francisco, CA.*

- 2012 **Treglia, M.L.** and A.C. Landon. Integrative Research for Biodiversity Conservation and Water Resource Management. *Student Conference on Conservation Science – New York. New York, NY.*
Treglia, M.L. and R.N. Fisher. Presence-Only Modeling to Understand the Historic Distribution of an Endangered Toad. *7th World Congress of Herpetology. Vancouver, BC, Canada*
- 2011 **Treglia, M.L.** Conserving an Endangered Toad in a Dynamic Landscape. *1st Annual NSF-IGERT Online Poster Session.*
- 2009 **Treglia, M.L.** Effects of Detectability on Population Estimates of the Ground-Dwelling Lizard, *Ameiva polops*. *10th Annual Ecological Integration Symposium, Texas A&M University.*

Teaching Experience

- 2018 Instructor for *Mapping the Physical World*. Pratt Institute, NYC, NY
- 2016 Instructor for *Landscape Analysis and Modeling*, University of Tulsa, Tulsa, OK.
- 2015 Instructor for *Graduate Seminar on Spatial Ecology*, University of Tulsa, Tulsa, OK.
 Instructor for *Landscape Analysis and Modeling*, University of Tulsa, Tulsa, OK.
- 2014 Half-day course on QGIS, as part of the Open Source for Open Science Workshop for the Ecology and Evolutionary Biology Program, Texas A&M University, College Station, TX.
- 2010, 2013 TA for *Herpetology*, Texas A&M University, College Station, TX.
- 2012 Guest Lecturer for class, *Recreation Management of Wildlands*, Texas A&M University, College Station, TX.
- 2007, 2012 TA for *Natural History of the Vertebrates*, Texas A&M University, College Station, TX.
- 2009 TA for *Fundamentals of Ecology Lab*, Texas A&M University, College Station, TX.
- 2008 TA for *Natural History of the Invertebrates*, Texas A&M University, College Station, TX.

Service

- 2019-Pres Board member for the New York State Urban Forestry Council
- 2014-16 Reviewer for E.E. Williams Research Grant Program, The Herpetologists' League.
- 2011-12 Co-Chair of the 13th Annual Ecological Integration Symposium, Texas A&M University.
- 2010-11 Treasurer of the Association of Graduate Wildlife and Fisheries Scientists.
- 2009-10 President of the Association of Graduate Wildlife and Fisheries Scientists.
 Web-Designer for the 11th Annual Ecological Integration Symposium, Texas A&M University.
 Judge for Student Research Week, Texas A&M University.
- 2007-08 Mentor for Undergraduate Research at Texas A&M University, supervised by Dr. Lee Fitzgerald.
- 2006-07 President of the Cornell Herpetological Society.
- 2005-06 Treasurer of the Cornell Herpetological Society.

Reviewer for the following journals: *African Journal of Herpetology; Applied Herpetology; Biological Invasions; Ecological Modeling; Herpetologica; Herpetological Conservation and Biology; Herpetological Review; Journal of Applied Ecology; Journal of Biogeography; PeerJ; Scientific Reports.*

Member of: North American Chapter of the International Association for Landscape Ecology

Active member of the following software listserves: QGIS-User List (QGIS); R-Sig-Geo (R Spatial).

Contributor to the following R Packages: pgirmess (available on CRAN); Rfrag (available at the Fragstats Website); iButtonDataOrganizer (available on GitHub).

Technical Skills

- Programming in R and SQL
- Multivariate Statistics and Machine Learning
- GIS, Remote Sensing, and LIDAR with Open Source Software, ArcGIS and Google Earth Engine
- Git Version Control System
- Familiarity with Python, Bash, LaTeX, Markdown, HTML, Stata

Extracurricular Workshops Attended

- | | |
|------|---|
| 2019 | Software Carpentry Workshop on R and Git, Albany, NY (Organizer/Host and Assistant) |
| 2016 | Conversant Communication Training, Saratoga Springs, NY.
Software Carpentry Instructor Training, Oklahoma State University, Stillwater, OK. |
| 2015 | Software Carpentry Workshop on Python and Git. Oklahoma State University, Stillwater, OK. |
| 2014 | Open Science for Synthesis workshop on Scientific Computing. Held Jointly at the National Center for Ecological Analysis and Synthesis, Santa Barbara, CA and the Renaissance Computing Institute, Chapel Hill, NC.

How to Design Plausible and Useful Scenarios for Modeling Landscape Change. Workshop at the US Regional Association of International Association for Landscape Ecology Meeting, Anchorage, AK. |
| 2013 | Nonparametric and Machine Learning Modeling using Open Source Tools: Workflows for Linking GIS with Statistical Software in R. Workshop at the US Regional Association of International Association for Landscape Ecology Meeting, Austin, TX. |