

Bradley A. Eichelberger

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EDUCATION

Master of Science - Applied Ecology and Conservation Biology. 2009. Frostburg State University, Frostburg, MD, USA.

Bachelor of Science - Biology, minor in Geography. 2003. Frostburg State University, Frostburg, MD, USA.

EXPERIENCE

Owner/Principal Consultant September 2019 - current
BAE-Ecospatial Consulting, Commonwealth of the Northern Mariana Islands; Saipan, MP

Duties:

- Upgraded the process for the management and dissemination of Pacific Data Hub .STAT statistical codelists for the Pacific Community (January - March 2023)
- Provided technical support to update QGIS manual for census and survey mapping for the Pacific Community (July - August 2022)
- Supported the development and trialing of a spatial analysis procedure for the identification of priority R2R sites in the Solomon Islands for the Pacific Community (November 2021 - February 2022)
- Updated the Republic of the Marshall Islands State of the Environment Report for the Secretariat of the Pacific Regional Environment Programme including identifying datasets, updating and crosswalking indicators, and leading stakeholder engagement workshops for atmosphere and climate, land, marine, biodiversity, traditional knowledge, built environment, and nuclear legacy themes (May 2021 - May 2022)
- Supported the Pacific Islands Protected Area Portal (PIPAP) for the Secretariat of the Pacific Regional Environment Programme by managing spatial data and visualization of data for the PIPAP using PostGIS and GeoServer instances; providing technical assistance and recommendations for spatial data management, mapping, spatial data delivery, and analysis; and instructing in-country and virtual training workshops to build GIS capacity for improved protected area mapping and management for 4 Pacific Island countries (Marshall Islands, Samoa, Solomon Islands, and Vanuatu) (Sept. 2019 - Dec. 2020)

Acting Wildlife Section Supervisor June 2022, Dec. 2022 - current
Chief Geographic Information Officer October 2020 - current
GIS Specialist/Project Leader May 2016 - September 2020

Division of Fish and Wildlife, Commonwealth of the Northern Mariana Islands; Saipan, MP

Duties:

- Serve as periodic and transitional Wildlife Section Supervisor directly supervising 13-16 employees and managing 15-20 active projects with annual operating budget of ~\$2 million (total of 270 work days)

- Develop intra- and inter-agency strategic plans and provide review and responses to federal and regional initiatives such as critical habitat designations, species recovery plans, integrated natural resource management plans
- Develop, manage, and oversee spatial data management systems for the Division
- Supervise 1 GIS Technician and manage ~\$150,000 in hardware and software assets
- Establish digital system applications to streamline spatial data collection, entry, QA/QC, and analysis
- Conduct landscape-scale analysis and modeling of spatial data for wildlife conservation projects and biological studies using ArcGIS, QGIS, Python, and R
- Create map products to enhance wildlife programs, outreach, and reporting
- Assist biologists with spatial elements of project design and planning
- Perform and manage long-term projects, including spatial analysis of endangered species habitat use and assessment of development permitting system
- Recommend and coordinate data technologies to aid biological programs and coordinate data cataloging and management
- Build, maintain, modify and update GIS for all islands of the CNMI
- Develop protocols to distribute DFW data to CNMI partnering agencies and federal grantor agencies
- Write funding proposals and manage GIS-related projects and grants

Adjunct Faculty

Fall 2016, Spring 2017

Northern Marianas College; Saipan, MP

Duties:

- Instructed students in “Special Topics in Natural Resource Management” course
- Focused on teaching students the scientific method, technical writing, sample design, and statistical analysis

Lecturer in Earth Systems

September 2014 - December 2014

Stanford University; Stanford, CA

Duties:

- Co-lectured ~35 graduate and undergraduate students in "Fundamentals of Geographic Information Science (GIS)" course
- Guided students in geospatial project design and analysis
- Supervised 2 teaching assistants

GIS Analyst

September 2011 - February 2016

Stanford University, The Natural Capital Project; Stanford, CA

Duties:

- Developed, tested, and applied hydrological and terrestrial models to evaluate the tradeoff of ecological services (ES) for land management decisions
- Consulted with resource managers to address management needs, develop modeling scenarios, and alter models
- Provided spatial and statistical analyses as well as developed Geographic Information System (GIS) tools using Python (GDAL, SciPy, NumPy) programming language and software (ArcGIS, QGIS, ENVI)
- Collected, created, preprocessed, refined, and managed large raster, vector, and table input data for models and write Python scripts to automate global data acquisition as needed
- Provided GIS and ES technical support for research staff

- Provided domestic and international training for over 200 technical and non-technical users (Italy, Kenya, South Korea, United Kingdom, United States)

GIS Programmer II

January 2009 - December 2010

Computer Aid Inc.; Harrisburg, PA

Duties:

- Served as contracted part-time GIS Programmer for Pennsylvania Department of the Conservation of Natural Resources Division of Forest Pest Management
- Developed Visual Basic and Python programming script to streamline processes for ArcGIS and ArcPad data creation and update of forest pest species distributions and defoliation

GIS Programmer

September 2008 - March 2011

The Natural Capital Project - Stanford University, The Nature Conservancy, and World Wildlife Fund

Duties:

- Served as part-time GIS Programmer for the Natural Capital Project, a collaboration between Stanford University, The Nature Conservancy, and World Wildlife Fund, to promote conservation by valuating the cost of land management decisions on ecosystem processes
- Developed, tested, and applied Python programming script tools for ArcGIS based on hydrological and terrestrial ecosystem processes for the Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST)

Ecologist

April 2007 - October 2011

Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy; Middletown, PA

Duties:

- Served as scientist responsible for the study, inventory, and conservation assessment of rare natural communities and species for the Natural Heritage Program and Pennsylvania Natural Diversity Inventory (PNDI)
- Coordinated, developed, and supervised project budgets, work efforts, and product outcomes
- Prepared grant proposals and lead research projects funded at federal and state levels
- Conducted field studies to assess the classification, quality, and condition of rare natural communities, flora, and wildlife
- Conducted statistical and spatial landscape analyses of ecosystem processes and interpreted remotely sensed imagery to identify areas of ecological significance
- Developed and customized GIS scripts, tools, and data using ArcGIS, SQL, Visual Basic, and Python programming languages to streamline analyses
- Managed project data using tabular and spatial relational databases and constructed detailed reports

COMMITTEES/PROJECTS

Open Source Geospatial Foundation (OSGeo) Oceania. Member 2021 - current.

Pacific GIS & Remote Sensing Council. Founding Member, CNMI National Focal Point 2018 - current, Secretary 2022 - current.

Pacific Regional Invasive Species and Climate Change. Core Team Member 2021 - current.

PUBLICATIONS

Peer-reviewed Publications and Book Chapters

- Bak, T., **B. A. Eichelberger**, E. Kohler, S. Mullin, and R. Camp. 2023. Forest bird population trends on Saipan, a small developing oceanic island. *Global Ecology and Conservation*. In review.
- Brewington, L., **B. A. Eichelberger**, N. Read, E. Parsons, H. Kerkering, C. Martin, W. Miles, J. Idechong, and J. Burgett. 2023. Pacific Island Perspectives on Invasive Species and Climate Change. Pages 59-78 in S. J. Walsh, C. F. Mena, J. R. Stewart, and J. P. Muñoz Pérez, editors. *Island Ecosystems. Social and Ecological Interactions in the Galapagos Islands*. Springer, Cham.
- Roark, E., J. Guilbert, E. Kohler, J. Atalig, L. R. Sablan, C. Mendiola, **B. A. Eichelberger**, and S. Mullin. 2022. A rapid assessment of cave occupancy for Pacific Sheath-tailed Bats (*Fanihin ganas*, *Emballonura semicaudata rotensis*) and Mariana Swiftlets (*Chachaguak*, *Aerodramus bartschi*) on Aguiguan, Mariana Islands. *Micronesica* 2022-02: 1–10.
- Hileman, E. T., **B. A. Eichelberger**, J. Liske-Clark, P. D. Barnhart, R. N. Reed, A. A. Yackel Adams, and M. G. Nafus. 2020. Landscape dominance of introduced herpetofauna on an oceanic island. *Global Ecology and Conservation* 22:e00984.
- Di Febbraro, M., L. Sallustio, M. Vizzarri, D. De Rosa, L. De Lisio, A. Loy, **B. A. Eichelberger**, and M. Marchetti. 2018. Expert-based and correlative models to map habitat quality: which gives better support to conservation planning? *Global Ecology and Conservation* 16:e00513.
- Sulistiyawan, B. S., **B. A. Eichelberger**, R. G. A. Boot, O. Hadian, W. Sukamantoro, P. Verweij, and G. Adzan. 2017. Connecting the fragmented habitat of endangered mammals in the landscape of Riau-Jambi-Sumatera Barat (RIMBA), central Sumatra, Indonesia. *Global Ecology and Conservation* 9:116-130.
- Ma, S., J. M. Duggan, **B. A. Eichelberger**, B. McNally, J. R. Foster, E. Pepi, M. N. Conte, G. C. Daily, and G. Ziv. 2015. Valuation of ecosystem services to inform management of multiple-use landscapes. *Ecosystem Services* 19:6-18.
- Duggan, J. M., **B. A. Eichelberger**, S. Ma, J. L. Lawler, and G. Ziv. 2015. Informing management of rare species with an approach combining scenario modeling and spatially explicit risk-assessment. *Ecosystem Health and Sustainability* 1:7-18.
- Chaplin-Kramer, R., R. P. Sharp, L. Mandle, S. Sims, J. Johnson, I. Butnar, L. M. Canals, **B. A. Eichelberger**, I. Ramler, C. Mueller, N. McLachlan, A. Yousefi, H. King, and P. M. Kareiva. 2015. Spatial patterns of agricultural expansion determine impacts on biodiversity and carbon storage. *Proceedings of the National Academy of Sciences* 112: 7402-7407.

Technical Reports and Non-peer-reviewed Publications

- Eichelberger, B.**, L. de la Rua, P. Bright, and G. Le Gall. 2022. QGIS Manual for Census and

- Survey Mapping: 2022 Update for QGIS 3.22 Long Term Release. The Pacific Community. 128 pp.
- Eichelberger, B.** 2022. Development and trialing of a procedure for the spatial prioritization of R2R sites in Solomon Islands. The Pacific Community. 48 pp.
- Liske-Clark, J., B. Chagnon, S. Mullin, and **B. Eichelberger**. 2018. Wildlife and vegetation surveys, Aguiguan 2016 (Technical Report #18). CNMI Division of Fish and Wildlife. Saipan, Commonwealth of the Northern Mariana Islands.
- Murray, C., J. Liske-Clark, S. Mullin, R. Ulloa, D. Page, and **B. Eichelberger**. 2018. Wildlife and vegetation surveys, Alamagan 2017 (Technical Report #17). CNMI Division of Fish and Wildlife. Saipan, Commonwealth of the Northern Mariana Islands.
- Daily, G. C., M. H. Ruckelshaus, S. Ma, **B. A. Eichelberger**, J. M. Duggan, Y. B. Ghile, G. M. Kaiser, B. W. McNally, G. Ziv, M. N. Conte, P. J. Denny-Frank, and E. M. Rauer. 2015. Enlisting ecosystem services: quantification and valuation of ecosystem services to inform installation management. DoD Environmental Security Technology Certification Program (ESTCP), RC-201113. Alexandria, VA: ESTCP.
- Zimmerman, E., T. Davis, G. Podniesinski, M. Furedi, J. McPherson, S. Seymour, **B. Eichelberger**, N. Dewar, J. Wagner, and J. Fike (editors). 2012. Terrestrial and Palustrine Plant Communities of Pennsylvania, 2nd Edition. Pennsylvania Natural Heritage Program, Pennsylvania Department of Conservation and Natural Resources, Harrisburg, Pennsylvania.
- Furedi, M., B. Leppo, M. Kowalski, T. Davis, and **B. Eichelberger**. 2011. Identifying species in Pennsylvania potentially vulnerable to climate change. Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy. 229 p.
- Podniesinski, G. S., M. Furedi, and **B. A. Eichelberger**. 2010. Conceptual models and recommendations for monitoring riparian plant communities within riverine parks of the Eastern Rivers and Mountain Network. Technical Report NPS/NER/NRTR-2010/023. National Park Service. Philadelphia, PA.
- Eichelberger, B. A.** and S. J. Perles. 2009. Determining the status and trends of key invasive plant species in the Upper Delaware Scenic and Recreational River. Technical Report NPS/NER/NRTR-2009/135. National Park Service. Philadelphia, PA.
- Eichelberger, B. A.** and S. J. Perles. 2009. Determining the status and trends of key invasive plant species in the Delaware Water Gap National Recreation Area. Technical Report NPS/NER/NRTR-2009/134. National Park Service. Philadelphia, PA.
- Perles, S. J., G. S. Podniesinski, M. Furedi, **B. A. Eichelberger**, A. Feldman, G. Edinger, E. Eastman, and L. A. Sneddon. 2008. Vegetation classification and mapping at Upper Delaware Scenic and Recreational River. Technical Report NPS/NER/NRTR-2008/133. National Park Service. Philadelphia, PA.

PRESENTATIONS

- Marianas Terrestrial Conservation Conference. February 2023. Habitat use area and selection for the Ga'Ga' Karisu/Nightingale Reed-warbler (*Acrocephalus hiwae*) on Saipan. Mangilao, Guam.
- Pacific Region Invasive Species and Climate Change: When Climate Change and Invasive Species Intersect Webinar Series. May 12, 2022. Big trouble on little islands - challenges for species conservation in the Northern Marianas. Virtual webinar.
- Pacific GIS and Remote Sensing Conference. Nov. 22, 2021. Estimating vegetation and wildlife resilience following typhoon events in the Northern Mariana Islands. Port Vila, Vanuatu.
- International Union for the Conservation of Nature (IUCN) World Conservation Congress. Sept. 6, 2021. Synergistic Effects of Climate Change + Invasive Species: A Call for RISCC Management. Marseilles, France.
- Pacific GIS and Remote Sensing Conference. Nov. 29, 2019. 1) Impacts of land conversion on bird populations within the Northern Mariana Islands (2011-2019). 2) Using multi-scale imagery to map vegetation in Saipan. Suva, Fiji.
- Brown Treesnake Technical Working Group Annual Meeting. Nov. 20, 2019. Invited Panel: The future is now: developing and implementing electronic data collection. Saipan, Northern Mariana Islands.
- Marianas Terrestrial Conservation Conference. Nov. 19, 2019. Mariana common moorhen population census and habitat modeling. Saipan, Northern Mariana Islands.
- Free and Open Source for Geospatial Conference (FOSS4G) Oceania. Nov. 14, 2019. Using open source software to map and survey wildlife populations in the Northern Mariana Islands. Wellington, New Zealand.
- Pacific GIS and Remote Sensing Conference. Nov. 29, 2018. Transcending tiny island issues: streamlining spatial data collection and management in the Northern Mariana Islands. Suva, Fiji.
- Marianas Terrestrial Conservation Conference. Nov. 14, 2018. Habitat associations of the golden white-eye on Saipan. Mangilao, Guam.
- Marianas Terrestrial Conservation Conference. Nov. 17, 2017. Predicting distributions of endemic bird species in the Northern Mariana Islands. Mangilao, Guam.
- Natural Capital Symposium. March 23, 2015. In depth: data processing (technical talk on GIS data for models). Stanford University, CA, USA.
- Natural Capital Symposium - March 28, 2014. Pre and post-processing: preparing inputs and making sense of outputs. Stanford University, CA, USA.
- NatureServe Conservation Conference. 2010. Obtaining a multi-taxa baseline to inform management decisions at Big Pine Flats, an unique ridgetop ecosystem in Pennsylvania. PA, USA.

WORKSHOPS/TRAININGS CONDUCTED

Enhancing multi-programme GIS support for the Secretariat of the Pacific Regional Environment Programme. October 12, 2021. Virtual workshop for SPREP, Samoa.

Development of the Republic of the Marshall Islands third State of the Environment report workshop. August 20, 2021 and Nov. 24, 2021. Virtual workshop for the Republic of the Marshall Islands.

Training on the Pacific Islands Protected Area Portal (PIPAP) and Geographic Information Systems (GIS) for improved protected area planning and management in the Solomon Islands. October 19-23, 2020. Virtual training for Solomon Islands.

Training on the Pacific Islands Protected Area Portal (PIPAP) and Geographic Information Systems (GIS) for improved protected area planning and management in the Marshall Islands. August 17-21, 2020. Virtual training for the Republic of the Marshall Islands.

Training on the Pacific Islands Protected Area Portal (PIPAP) and Geographic Information Systems (GIS) for improved protected area planning and management in Vanuatu. Feb. 26-28, 2020. Port Vila, Vanuatu.

Training on the Pacific Islands Protected Area Portal (PIPAP) and Geographic Information Systems (GIS) for improved protected area planning and management in Samoa. Feb. 19-21, 2020. Apia, Samoa.

InVEST models: mapping and valuating ecosystem services for better decision making. University of Padua. Sept. 9-11, 2015. San Vito de Cadore, Italy.

InVEST and RIOS Training. The Nature Conservancy. Feb. 3-6, 2015. Nairobi, Kenya.

International Training Program and 2nd Workshop on Marine Ecosystem Valuation and Spatial Management. Korea Maritime Institute/Partnerships in Environmental Management for the Seas of East Asia. Sept. 1-5, 2014. Seoul, South Korea.

InVEST and RIOS Training. The Nature Conservancy Eastern Division. April 29-30, 2014. Boston, MA, USA.

Integrated Valuation of Ecosystem Services and Tradeoffs. Ecosystems Knowledge Network. March 5 (London) and March 7 (Edinburgh), 2013. United Kingdom.

GRANTS/CONTRACTS AWARDED

CNMI Sport Fish Spatial Data Management. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2023. \$93,094.31 USD. Principal Investigator.

State Wildlife Grant Implementation - FY 2024. State Wildlife Grants Program, United States Fish and Wildlife Service. 2023. \$95,179.00 USD. Co-principal Investigator.

Spatial data management, support and analysis of wildlife projects for improved species

conservation - FY 2024. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2023. \$144,965.00 USD. Principal Investigator.

Wildlife Restoration Program Management and Outreach - FY 2024. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2023. \$398,861.00 USD. Principal Investigator.

Wildlife Technical Guidance and Disaster Readiness - FY 2024. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2023. \$355,245.00 USD. Co-principal Investigator.

Management and dissemination of statistical codelists for PDH.STAT. Short-term consultancy. The Pacific Community. 2023. €11,000.00 EUR.

Spatial data management, support and analysis of wildlife projects for improved species conservation - FY 2023. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2022. \$177,997.00 USD. Principal Investigator.

Technical support to update the SDD GIS Manual for Census and Survey Mapping. Short-term consultancy. The Pacific Community. 2022. €9,890.63 EUR.

Geospatial specialist to support development & trialing of a procedure for the identification of priority R2R sites in the Solomon Islands. Short-term consultancy. The Pacific Community. 2021. \$6,000.00 USD.

Spatial data management, support and analysis of wildlife projects for improved species conservation. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2021. \$161,127.00 USD. Principal Investigator.

Republic of the Marshall Islands State of the Environment Report consultant. Long-term consultancy, Secretariat of the Pacific Regional Environment Programme. 2020. \$29,884.00 USD.

Pacific Islands Protected Area Portal (PIPAP) GIS specialist consultant. Long-term consultancy, Secretariat of the Pacific Regional Environment Programme. 2019. \$53,928.00 USD.

Spatial data management, support and analysis. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2019-2020. \$269,267.00 USD. Principal Investigator.

Spatial analysis, technical support, and planning. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2018. \$122,191.38 USD. Principal Investigator.

Geospatial data management and technical support. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2017. \$163,879.61 USD. Principal Investigator.

Avian habitat associations - spatial relationships of bird abundance, richness, and distribution to habitat types. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2015. \$48,072.66 USD. Principal Investigator.

Data management system for wildlife conservation and management actions. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2015. \$98,966.04 USD. Principal Investigator.

Species Vulnerability Assessments as a Strategy for Climate Change Adaptation Planning for Birds and Mammals: Scoping and Planning. Wildlife and Sports Fish Recreation Program, United States Fish and Wildlife Service. 2015. \$13,808.37 USD. Co-principal Investigator.