

Erin Murphy

172 E Bonita Way, Tempe, AZ, 85281
630-687-3318 | elmurph1@asu.edu
<https://elmurph1.wixsite.com/home>

EDUCATION

- Arizona State University – Ph.D. Biology, 4.0 GPA May 2023
Dissertation: Mitigating marine plastic pollution: environmental, economic, and social dimensions. Committee co-chairs: Dr. Leah Gerber & Dr. Beth Polidoro
- University of Illinois Urbana-Champaign – M.Sc. Geology, 4.0 GPA May 2015
Thesis: Quantitative tracking of the cellular and skeletal response of the coral *Orbicella annularis* to gradients in marine sewage pollution. Committee chair: Dr. Bruce Fouke
- University of Illinois Urbana-Champaign – B.S. Integrative Biology, 3.97 GPA May 2013

AWARDS & HONORS

- 2022 Graduate College Completion Fellowship (\$19,200)
2022 Lisa Dent Memorial Fellowship (\$6,440)
2021 Arijit Guha Graduate Student Advocacy Award
2020 North American Congress for Conservation Biology Student Presentation Award Finalist
2015 Harriet Wallace Outstanding Female Graduate Student
2015 Outstanding Graduate Teaching Assistant Award
2013 Evergreen Endowed Fellowship in Geology (\$20,000)
2013 Bronze Tablet Award (graduated in top 3% of college)
2013 Chancellor’s Scholar Graduate
2013 James Scholar Graduate

RESEARCH EXPERIENCE

- | | |
|--------------------|--|
| Jan 2023–Present | Post-Doctoral Researcher, Ocean Conservancy & University of Toronto |
| May 2023–Present | Program Lead for Pollution and Environmental Policy, CBO , ASU |
| Oct 2023–Present | Research Consultant, Polidoro Lab, ASU |
| Aug 2018– May 2023 | Ph.D. Researcher, Conservation Innovation Lab, ASU |
| Aug 2020–May 2021 | Research Assistant, Bayer and Center for Biodiversity Outcomes, ASU |
| Jan 2019–Aug 2019 | Research Assistant, Center for Biodiversity Outcomes, ASU |
| Oct 2016–Apr 2018 | ORISE Fellow, Office of Wetlands, Oceans, and Watersheds, EPA |
| Nov 2015–Oct 2016 | Research Assistant, Afterschool Alliance |
| Aug 2013–May 2015 | Master’s Thesis Researcher, Dr. Bruce Fouke Lab, University of Illinois |

PUBLICATIONS

- Murphy, E. L.,** Gerber, L. R., Rochman, C., Polidoro, B. (Accepted). A macroplastic vulnerability index for marine mammals, seabirds, and sea turtles in Hawai’i. *Science of the Total Environment*.
- Murphy, E. L.,** Fredette-Roman, C., Rochman, C., Gerber, L. R., Polidoro, B. (2023) A multi-taxonomic, trait-based framework for assessing macroplastic vulnerability. *Science of the Total Environment*.

- Murphy, E. L.,** Polidoro, B., Gerber, L. R. (2023) The Plastic-scape: Insights from seascape ecology as framework for researching and mitigating marine plastic pollution *Frontiers in Marine Science*.
- Murphy, E. L.,** Iacona, G., Bernard, M., Barnes, M., McGivern, A., & Gerber, L. R. (2022) A decision framework for estimating the cost of marine plastic pollution interventions. *Conservation Biology*. [conbio.onlinelibrary.wiley.com/doi/10.1111/cobi.13827](https://doi.org/10.1111/cobi.13827)
- Helm, L., **Murphy, E. L.,** McGivern, A., Borrelle, S. B. (2022) Impacts of plastic pollution mitigation strategies. *Environmental Reviews*. <https://doi.org/10.1139/er-2021-0117>
- Murphy, E. L.,** Eikenberry, S., Iacona, G., Watson, G., & Gerber, L. R. (2021) The value of increased spatial resolution of pesticide usage data for assessing risk to endangered species. *Conservation Science and Practice*. [conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/csp2.551](https://doi.org/10.1111/csp2.551)
- Murphy, E. L.,** Bernard, M., Gerber, L. R., & K. Dooley. (2021) Evaluating the role of market-based instruments in protecting marine ecosystem services in wild-caught fisheries. *Ecosystem services*. [sciencedirect.com/science/article/pii/S2212041621001145](https://doi.org/10.1016/j.ecoser.2021.1001145)
- Kittinger, J., Bernard, M., Finkbeiner, E., **Murphy, E.,** Obregon, P., Klinger, D. H., Schoon, M. L., Dooley, K. J., & Gerber, L. R. (2021) Integrating market incentives and governance improvements for sustainable ocean production at the ecosystem scale. *Conservation Science and Practice*. [conbio.onlinelibrary.wiley.com/doi/full/10.1111/csp2.386](https://doi.org/10.1111/csp2.386)
- Cramer, K. L., Bernard, M. L., Bernat, I., Gutierrez, L., **Murphy, E. L.,** Sangolquí, P., Surrey, K., Gerber, L. R. (2021). The present and future status of ecosystem services for coral reef. *Imperiled: The Encyclopedia of Conservation*.
- Murphy, E. L.,** Bernard, M., Helm, L., Hill, I & Tunas-Corzon, A. (2020) Policy Recommendations to reinvigorate recycling in Arizona. *The Journal of Science Policy & Governance*. [sciencepolicyjournal.org/article_1038126_jspg170115.html](https://doi.org/10.1080/1038126.2020.170115)
- Borrelle, S. B., Ringma, J., Law, K. L., Mannahan, C. C., Lebreton, L., McGivern, A., **Murphy E.,** Jambeck, J., Leonard, G. H., Hilleary, M. A., Eriksen, M., Possingham, H. P., Gerber, L. R., Polidoro, B., Tahir, A., Bernard, M., De Frond, H., Mallos, N., Barnes, M., & Rockman C. M. (2020) Predicted growth in plastic waste exceeds efforts to mitigate marine plastic pollution. *Science*. [science.org/doi/abs/10.1126/science.aba3656](https://doi.org/10.1126/science.aba3656)
- Plastic Pollution Emissions Working Group. Evaluating the impact of mitigation strategies for marine litter and microplastics to inform policy: A white paper. (2018). https://docs.wixstatic.com/ugd/0e7900_c5645ab3497f489f92e7330f1fe48ce3.pdf
- Murphy, E. L.,** Jung, J., Ardisana, R., Sivaguru M., Vermeij, M, Fouke, B. W. (In prep) Physiological consequences of nitrogen enrichment under phosphate limitation for a reef building coral in the Caribbean. *Communications Biology*.
- Fredette-Roman, C., Rolsky, C., Polidoro, B., **Murphy, E. L.** (In prep) A global ranking of the relative vulnerability of marine mammals to macroplastic entanglement and ingestion. *Conservation Biology*.

RESEARCH GRANTS

- 2023 Darwin Initiative (Submitted and in review \$240,000)
- 2022 ASU Graduate and Professional Student Association Terminal Research Grant (\$2000)
- 2022 Center for Biology and Society Unusual Student Project Funding (\$2000)
- 2022 Center for Biology and Society Student Travel Award (\$1060)
- 2022 ASU Graduate and Professional Student Association Travel Grant (\$950)
- 2022 ASU School of Life Sciences Travel Grant (\$400)

- 2021 ASU Tripke Travel Grant (\$2000)
- 2021 ASU Graduate and Professional Student Association Publication Grant (\$900)
- 2021 ASU Graduate College Travel Award (\$300)
- 2019 ASU School of Life Sciences Travel Grant (\$400)
- 2019 ASU Graduate and Professional Student Association Travel Grant (\$950)
- 2014 Lerner Gray Memorial Fund, AMNH (\$1400)
- 2014 AAPG-GIA, Edward C. and Caroline Beaumont Named Grant (\$1500)
- 2014 Sohl Research Award, UIUC Geology Department (\$2,843)
- 2013 UIUC Graduate College travel grant (\$500)

TEACHING EXPERIENCE

- Aug 2021–Aug 2022 Adjunct Professor, Marine Biology, Estrella Mountain Community College
- Aug 2021–Aug 2022 Teaching Assistant, Environmental Ethics, Arizona State University
- May 2021–Aug 2021 Teaching Assistant, Why People Steal, Lie and Cheat, Arizona State University
- Jan 2020–May 2020 Teaching Assistant, Bioethics, Arizona State University
- Jun 2020–Aug 2020 Teaching Assistant, Why Sex?, Arizona State University
- Aug 2018–Dec 2019 Teaching Assistant, Introductory Biology Lab, Arizona State University
- Jan 2015–May 2015 Biocomplexity, Teaching Assistant, University of Illinois
- Aug 2014–May 2015 History of the Earth System, Teaching Assistant, University of Illinois

LEADERSHIP AND SERVICE

- 2020–Present The Circulate Initiative, Impact Metrics Working Group
- 2020–Present AZ Forward, Plastic Committee Lead and Circular Economy Committee Member
- Jan–Aug 2023 Arizona Recycling Coalition, Long-term Steering Committee Member
- 2021–2023 Arizona Recycling Coalition, Policy Chair
- 2021–2023 Keep Tempe Beautiful, Founding Board Member
- 2021–2023 Arizona Science Policy Network, Executive Board Co-Chair
- 2020–2022 SOLS Executive Board, Sustainability Representative
- 2020–2022 SOLS Sustainability Committee, President
- 2019–2022 SOLS Sustainability Committee, Founding Vice President
- 2018–2022 Ask a Biologist, Marine Biology Expert
- 2019–2020 Arizona Science Policy Network, Waste Management Committee Chair
- 2019–2020 SOLS Executive Board, Strategic Planning Representative
- 2019–2020 ASU Prison Biology Program, Instructor
- 2018–2020 AZ Women’s Climbing Coalition, Tempe Chapter Lead

MENTORSHIP

Master’s students

- 2021-2023 Cassidy Fredette-Roman
- 2019 – 2021 Infynity Hill

Undergraduate students

- 2023 Cecelia Darter, [SOLUR](#) Advisor
- 2023 Catelyn Chang, [SOLUR](#) Advisor
- 2021-2022 Kristin Deacon, thesis committee
- 2021 Victoria Rader, AzRC intern

REFEREE ACTIVITIES

- 2021 Peer reviewer for Conservation Biology
- 2021 Peer reviewer for the International Journal of the Commons
- 2020 Peer reviewer for Plos One

OUTREACH

- 2023 Guest lecturer in Environmental Life Sciences Ph.D. Seminar, ASU
- 2023 Plenary speaker for The Sustainability Consortium Annual Conference
- 2022 Guest speaker for Wells Fargo Sustainability Team
- 2022 Guest speaker at Arizona State Prison Complex
- 2021 Bi-annual guest lecturer at California State University, Chico
- 2021 WE Empower UN SDG Challenge Judge
- 2021 ASU Sustainability Challenge Pitch Day judge
- 2021 Guest speaker at Chaparral High School
- 2020 Bi-annual guest lecturer at California State University, Chico
- 2020 WE Empower UN SDG Challenge Judge
- 2019 ASU Open Door
- 2019 OdySEA Aquarium Conservation Expo

PRESENTATIONS

- Murphy, E. L.**, Fredette-Roman, C., Polidoro, B. A relative trait-based vulnerability ranking of the world's marine mammals to plastic ingestion and entanglement. International Marine Debris Conference. Bhusan, South Korea. 2022.
- Murphy, E. L.**, Fredette-Roman, C., Rochman, C., Gerber, L. R., Polidoro, B. Ranking the relative vulnerability of Hawai'ian Species to marine macroplastic. North American Congress for Conservation Biology. Reno, NV. 2022.
- Ahumada, J., Cheng, S., **Murphy, E. L.** Interactive tools can drive evidence-informed decisions in conservation: insights from camera trap surveys in the Amazon. Association for tropical biology and conservation. Cartagena de Indias, Colombia. 2022.
- Murphy, E. L.**, Fredette-Roman, C., Rochman, C., Gerber, L. R., Polidoro, B. Assessing the relative vulnerability of marine biodiversity to macroplastics. Association for the Sciences of Limnology and Oceanography's Ocean Sciences Meeting. Honolulu, HI. 2022.
- Murphy, E. L.**, Eikenberry, S., Iacona, G., Watson, G. The value of increased spatial resolution of pesticide usage data for assessing risk to endangered species. Society for Environmental Toxicology and Chemistry annual conference. Portland, OR. 2021.
- Murphy, E. L.**, Bernard, M., Iacona, G., Borrelle, S. B., Barnes, M., McGivern, A., Emmanuel, J., Gerber, L. R. A decision framework for estimating the cost of marine plastic pollution intervention. Society for Conservation Biology's Emerging Issues in Conservation Seminar. Virtual. 2021. <https://vimeo.com/638724724>
- Murphy, E.**, Bernard, M., Gerber, L., Dooley, K. Evaluating the role of market-based instruments in protecting marine ecosystem services in wild-caught fisheries. North American Congress for Conservation Biology. Denver, Colorado. 2020.
- Barnes, M., Iacona, G., Bernard, M., Gerber, L., **Murphy, E.** Costs of mitigating marine plastic

pollution: a decision support tool. International Congress for Conservation Biology., Kuala Lumpur, Malaysia. 2019.

Watts-Fitzgerald, K., **Murphy, E.** EPA's Vessel Sewage Program. SOBA Annual Conference. Anchorage, AK. 2017.

Grant, J., Braithwaite, M., Dvorak, M., **Murphy, E. L.** Juvenile Justice. 21st Century Community Learning Centers (21st CCLC) 2016 Summer Institute. Phoenix, AZ. 2016.

POSTERS

Murphy, E. L., Borrelle, S., Kittinger, J., Gerber, L. R. Engaging stakeholders in identifying scenarios to mitigate marine plastic pollution in Hawai'i. American Geophysical Union. Chicago, IL. 2022.

Murphy, E. L., Barnes, M., Iacona, G., Bernard, M., Gerber, L. R., McGivern, A., Borrelle, S. The cost of mitigating marine plastic pollution. Institute for Social Science Research. Tempe, AZ. 2020.

Murphy, E. L., Barnes, M., Iacona, G., Bernard, M., Gerber, L. R., McGivern, A., Borrelle, S. The cost of mitigating marine plastic pollution. Society for Environmental Toxicology and Chemistry annual conference. Toronto, Canada. 2019.

Murphy, E. L., Sivaguru, M., Fouke, F. W. Physiological Response of the Caribbean Coral *O. annularis* to Pollution Gradients. Midwest Geobiology Conference. 2014.

Murphy, E. L., M. Sivaguru, B. W. Fouke. Physiological Response of the Caribbean Coral *O. annularis* to Pollution Gradients. American Geophysical Union. 2014.

MEDIA

CM. 2023. Arizona lawmakers want to restore recycling fund. But environmentalists fear one addition. <https://www.azcentral.com/story/news/local/arizona-environment/2023/05/03/arizona-lawmakers-consider-plan-to-fund-plastic-to-fuel-plants/70147952007/>

EM, LH. 2021. Lawmakers raided funds meant for recycling, raising fees, or scaling back programs. AZ Central. [azcentral.com/story/opinion/op-ed/2021/02/05/arizona-recycling-fund-raided-lawmakers-hurt-programs/4377908001/](https://www.azcentral.com/story/opinion/op-ed/2021/02/05/arizona-recycling-fund-raided-lawmakers-hurt-programs/4377908001/)

AB, HKF, AZ, **EM.** 2020. Wellness Privacy, Recycling, & Commercialization of the Arctic [SciPol SoundBites - S3 | E6. *Journal of Science Policy and Governance*. [youtube.com/watch?v=7vBIGQ2VPIs](https://www.youtube.com/watch?v=7vBIGQ2VPIs)

EM, MB, IH, ATC, LH. 2020. Arizona should take steps to reinvigorate recycling. Arizona Capitol Times. [sceeu.org/arizona-should-take-steps-to-reinvigorate-recycling-arizona-capitol-times/](https://www.sceeu.org/arizona-should-take-steps-to-reinvigorate-recycling-arizona-capitol-times/)

NG. 2020. Study: Massive Global Effort Needed to Reduce Plastic Pollution By 2030. NPR KJZZ. [Fronterasdesk.org/content/1621612/study-massive-global-effort-needed-reduce-plastic-pollution-2030](https://www.fronterasdesk.org/content/1621612/study-massive-global-effort-needed-reduce-plastic-pollution-2030)