

## BRIAN NICHOLAS POPP

University of Hawaii

Department of Earth Sciences

1680 East-West Road, Honolulu, Hawaii 96822

Office - (808) 956-6206; Telefax - (808) 956-5512; email: [popp@hawaii.edu](mailto:popp@hawaii.edu)

Webpage: <http://www.soest.hawaii.edu/GG/FACULTY/POPP/bpopp.html>

ORCID: <https://orcid.org/0000-0001-7021-5478>

### EDUCATION

**Ph.D. University of Illinois**, Urbana, Illinois, January 1986, Geology  
Thesis: The Record of Carbon, Oxygen, Sulfur, and Strontium Isotopes and Trace Elements in Late Paleozoic Brachiopods.

**M.S. University of Illinois**, Urbana, Illinois, October 1981, Geology  
Thesis: Coordinated Textural, Isotopic, and Elemental Analysis of Constituents in Some Middle Devonian Limestones.

**B.S. University of Michigan**, Ann Arbor, Michigan, December 1978.

### PROFESSIONAL EXPERIENCE

**7/99-present: Professor**, University of Hawaii, Department of Earth Sciences. **3/13-present: Faculty** UH Marine Biology Graduate Program. **3/15-present** Affiliate Faculty Ecology, Evolution and Conservation Biology.

**7/94-6/99: Associate Professor**, University of Hawaii, Department of Geology and Geophysics.

**1/90-6/94: Assistant Professor**, University of Hawaii, Department of Geology and Geophysics. **5/91-present: Cooperating Graduate Faculty**, Department of Oceanography.

### PROFESSIONAL SOCIETIES

American Geophysical Union  
Association for the Sciences of Limnology and Oceanography  
Ecological Society of America  
Geological Society of America  
The Oceanography Society

### TEACHING

Course	Instr.	Sem	# students	Schedule	Sum Eval
ERTH/SUST101 Dynamic Earth	Solo	F2025	241	Online	
ERTH639 Stable Isotope Biogeochemistry	Solo	S2025	10	T Th 1:30-2:45	4.83
ERTH/SUST101 Dynamic Earth	Solo	S2025	240	Online	4.68
ERTH/SUST101 Dynamic Earth	Solo	F2024	196	Online	4.59
ERTH/SUST101 Dynamic Earth	Solo	S2024	216	Online	4.65
ERTH/SUST101 Dynamic Earth	Solo	F2023	191	Online	4.72
ERTH639 Stable Isotope Biogeochemistry	Solo	S2023	10	T Th 1:30-2:45	4.75
ERTH101 Dynamic Earth	Solo	F2022	195	Online	4.42
ERTH101 Dynamic Earth	Solo	S2022	136	Online	4.54
ERTH101 Dynamic Earth	Solo	F2021	168	Online	4.70
ERTH639 Stable Isotope Biogeochemistry	Solo	S2021	14	Online	3.83

ERTH101 Dynamic Earth	Solo	F2020	73	Online	4.81
ERTH101 Dynamic Earth	Solo	S2020	93	Online	4.68

### STUDENT COMMITTEES

B.A./B.S. Students	Employed	Advised
2025	1	2
2024	1	1
2023	1	0
2022	1	0
2021	0	0
2020	0	0

Graduate Students	M.S. (Chair)	Ph.D. (Chair)
2024	0 (0)	8 (3)
2024	1 (1)	10 (5)
2023	3 (2)	6 (5)
2022	3 (2)	6 (5)
2021	4 (2)	3 (3)
2020	2 (0)	6 (2)

### CITATIONS (Google Scholar – 10/2025)

Published Papers: **182**. Cumulative citations 1981-2025: **19,611**. Hirsch index: **79**.

### REFEREED SCHOLARSHIP (2020-2025)

1. Shea C. H., Drazen J. C., and Popp B. N. (2025) A Bayesian model for assessing organic matter supply in complex marine food webs using amino acid isotope analysis. *PeerJ* (in press 21 September 2025).
2. Miller L.C., Close H.G., Grabb K.C., Huffard C.L., Li F., Lark D.M., Smith K.L., DeLong E.F., Benitez-Nelson C.R., Drazen J.C., and Popp B.N. (2025) Transformations of particulate organic matter from the surface to the abyssal plain in the North Pacific as inferred from compound-specific stable isotope and microbial community analyses. *Deep-Sea Research* 225, <https://doi.org/10.1016/j.dsr.2025.104597> (in press 24 September 2025)
3. Dowd M.H., Assad V.E., Cazares-Nuesser A.E., Drazen J.C., Goetze E., White A.E., and Popp B.N. (2025) Deep-Sea mining discharge: Implications for midwater food web dynamics. *Nature Communications* (in press 26 August 2025).
4. Miller L.C., Romero-Romero S., Popp B.N., and Drazen J.C. (2025) Niche partitioning among abyssal deposit-feeding echinoderms is linked to mobility and gut microbiota. *Marine Ecology Progress Series* 770:63-81, <https://doi.org/10.3354/meps14947>.
5. Chang C-T., Madigan D.J., Carlisle A.B., Wallsgrove N., Nakamura I., Nyegaard M., Allain V., Drazen J.C., Chiang W-C., and Popp B.N. (2025) Integrating isoscapes and amino acid  $\delta^{15}\text{N}$  analyses to reveal migration patterns and habitat

- use of molids in the western Pacific Ocean. *Progress in Oceanography* 235:103492, <https://doi.org/10.1016/j.pocean.2025.103492>.
6. Chang C-T., Drazen J.C., Hixon M.A., Nyegaard M., Phillips N.D., Chiang W-C., Ho Y-H., and Popp B.N. (2024) Diet breadth and overlap in the Family Molidae. *Environmental Biology of Fish*, <https://doi.org/10.1007/s10641-024-01582-7>.
  7. Umhau B.P., Motta L.C., Blum J.D., Close H.G, Drazen J.C., Popp B.N. and Benitez-Nelson C.R. (2024) Particulate mercury export in the central Pacific Ocean using  $^{234}\text{Th}$ - $^{238}\text{U}$  disequilibria. *Marine Chemistry* 265-266, 104433 <https://doi.org/10.1016/j.marchem.2024.104433>.
  8. Edwards P.M., Popp N.C., Pan Y., Weilhoefer C.L., Peterman A.B., Mork L.A., Johnson M., Morgan C.R., Colley M., Thorne C.R. and Popp B.N. (2024) Reconnecting a stream channel to its floodplain: Implications for benthic diatoms and macroinvertebrate trophic structure. *Restoration Ecology* <https://doi.org/10.1111/rec.14123>.
  9. Shea C.H., Wojtal P.J., Close H.G., Maas A.E., Stamieszkin K. Cope J.S., Steinberg D.K., Wallsgrove N. and Popp B.N. (2023) Small particles and heterotrophic protists support the mesopelagic zooplankton food web in the subarctic northeast Pacific Ocean. *Limnology and Oceanography* DOI: 10.1002/lno.12397.
  10. Wojtal P.K., Doherty S.C., Shea C.H., Popp B.N., Benitez-Nelson C.R., Buesseler K.O., Estapa M.L., Roca-Martí M., Close H.G. (2023) Deconvolving mechanisms of particle flux attenuation using nitrogen isotope analyses of amino acids. *Limnology and Oceanography* DOI: 10.1002/lno.12398.
  11. Chang C-T., Drazen J.C., Chiang W-C., Madigan D.J., Carlisle A.B., Wallsgrove N.J., Hsu H-H., Ho Y-H, and Popp B.N. (2023) Ontogenetic and seasonal shifts in diets of sharptail mola, *Masturus lanceolatus*, in waters off Taiwan. *Marine Ecology Progress Series* doi: 10.3354/meps14356.
  12. Torri G, Nugent A.G. and Popp B.N. (2023) The isotopic composition of rainfall on a subtropical mountainous island. *Journal of Hydrometeorology*, doi: <https://doi.org/10.1175/JHM-D-21-0204.1>.
  13. Motta L.C., Blum J.D., Popp B.N., Umhau B.P., Benitez-Nelson C.R., Close H.G., Washburn S.J., Drazen J.C. (2022) Mercury isotopic evidence for the importance of particles as a source of mercury to marine organisms. *Proceeding of the National Academy of Sciences* 119 (44): e2208183119 <https://doi.org/10.1073/pnas.2208183119>.
  14. Akiona A.K., Popp B.N., Toonen R.J., Kotubetey K. Kawelo H., and Franklin E.C. (2022) Predatory fish diets shift towards invasive mullet in a traditional Hawaiian aquaculture system. *Aquaculture, Fish, and Fisheries* doi: 10.1002/aff2.68.
  15. Gelippi M., Caraveo-Patino J., Gauger M.F.W., Popp B.N., Panigada S., and Marcin-Medina R. (2022) Isotopic composition of eastern grey whale epidermis indicates contribution of prey outside Arctic feeding grounds. *Scientific Reports* 12:7055, <https://doi.org/10.1038/s41598-022-10780-1>.

16. Okuhata B.K., Thomas D.M., Dulai H., Popp B.N., Lee J. and El-Kadi A.I. (2022) Inference of young groundwater ages and modern groundwater proportions using chlorofluorocarbon and tritium/helium-3 tracers from West Hawai'i Island. *Journal of Hydrology* 609:127755, doi.org/10.1016/j.jhydrol.2022.127755.
17. Chang C-T., Chiang W-C., Musyl M.K., Popp B.N., Lam C-H., Lin S-J., Watanabe Y., Ho Y-H. and Chen J-R. (2021) Water column structure influences long-distance latitudinal migration patterns and habitat use of bumphead sunfish *Mola alexandrini* in the Pacific Ocean. *Scientific Reports* 11:21934, <https://doi.org/10.1038/s41598-021-01110-y>.
18. Tejada J.V., Flynn J.J., MacPhee R., O'Connell T., Cerling R., Bermudez L., Capunay C., Wallsgrove N. and Popp B.N. (2021) Isotope data from amino acids indicate Darwin's ground sloth *Mylodon* was not an herbivore. *Scientific Reports* 11:18,944, <https://doi.org/10.1038/s41598-021-97996-9>.
19. Siegel, D.A., I. Cetinić, J.R. Graff, C.M. Lee, N. Nelson, M.J. Perry, I. Soto Ramos, D.K. Steinberg, K. Buesseler, R. Hamme, A.J. Fassbender, D. Nicholson, M.M. Omand, M. Robert, A. Thompson, V. Amaral, M. Behrenfeld, C. Benitez-Nelson, K. Bisson, E. Boss, P.W. Boyd, M. Brzezinski, K. Buck, A. Burd, S. Burns, S. Caprara, C. Carlson, N. Cassar, H. Close, E. D'Asaro, C. Durkin, Z. Erickson, M.L. Estapa, E. Fields, J. Fox, S. Freeman, S. Gifford, W. Gong, D. Gray, L. Guidi, N. Haëntjens, K. Halsey, Y. Huot, D. Hansell, B. Jenkins, L. Karp-Boss, S. Kramer, P. Lam, J.-M. Lee, A. Maas, O. Marchal, A. Marchetti, A. McDonnell, H. McNair, S. Menden-Deuer, F. Morison, A.K. Niebergall, U. Passow, B. Popp, G. Potvin, L. Resplandy, M. Roca-Martí, C. Roesler, T. Rynearson, S. Traylor, A. Santoro, K. Duncan Seraphin, H.M. Sosik, K. Stamieszkin, B. Stephens, W. Tang, B. Van Mooy, Y. Xiong and X. Zhang (2021) An operational overview of the EXport Processes in the Ocean from RemoTe Sensing (EXPORTS) Northeast Pacific field deployment. *Elementa Science of the Anthropocene*, 9: 1. DOI: <https://doi.org/10.1525/elementa.2020.00107>.
20. Romero-Romero S., Miller E., Black J., Popp B.N. and Drazen J.C. (2021) Deposit feeders as secondary consumers in the abyssal food web: what is the role of gut microbes? *Scientific Reports* 11:12594, doi.org/10.1038/s41598-021-91927-4.
21. Doherty S.C, Maas A.E, Steinberg D.K., Popp B.N., and Close H.G. (2021) Distinguishing zooplankton fecal pellets as a component of the biological pump using compound-specific isotope analysis of amino acids. *Limnology and Oceanography* doi: 10.1002/lno.11793.
22. Wall C.B, Wallsgrove N.J., Gates R.D., and Popp B.N. (2021) Amino acid  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  analyses reveal distinct species-specific patterns of trophic plasticity in a marine symbiosis. *Limnology and Oceanography* 66: 2033-2050. doi: 10.1002/lno.11742.
23. Seminoff J.A., Komoroske L.M., Amorocho D., Dutton P.H., Donoso M., Heidemeyer M., Hoefler G., Jones T.T., Kelez S., Lemons G.E., de Paz N., Rguez-Baron J.M., Sampson L., Santos Baca L., Vejar Rubio M., Zárata P., Zavala-Norzagaray A., and Popp B.N. (2021) Large-scale patterns in the trophic ecology of green turtles in the eastern Pacific: Insights from bulk tissue and compound specific stable isotope analysis. *Ecosphere* 12:e03479. doi: 10.1002/esc2.3479.
24. Blum J.D., Drazen J.C., Johnson M.W., Popp B.N., Motta L.C., and Jamieson A.J. (2020) Mercury isotopes identify near-surface mercury in deep sea trench biota.

*Proceeding of the National Academy of Sciences* 117:29292-29298. doi:  
10.1073/pnas.2012773117.

25. Dores D., Glenn C.R., Torri G., Whittier R.B. and Popp B.N. (2020) Implications for groundwater recharge from stable isotopic composition of precipitation in Hawai'i during the 2017-2018 La Niña. *Hydrological Processes* 34:4675-4696, doi: 10.1002/hyp.13907.
26. Gelippi M., Popp B.N., Gauger M.F.W. and Caraveo-Patino J. (2020) Tracing gestation and lactation in free ranging gray whales using the stable isotopic composition of epidermis layers. *PLoS ONE* 15(10): e0240171, <https://doi.org/10.1371/journal.pone.0240171>.
27. Lemons G., Lewison R., Copenrath C., Seminoff J. and Popp B.N. (2020) Nitrogen isotope fractionation of amino acids in a highly migratory marine ectotherm, the green turtle (*Chelonia mydas*). *Marine Biology* 167:149, <https://doi.org/10.1007/s00227-020-03745-3>.
28. Shih J.L and Popp B.N (2020) Assessment of an invasive tropical sponge on coral reefs in Hawaii. *Pacific Science* 74(2):175-187, doi:10.2984/74.2.7.
29. Tokuda A.K., Drazen J.C., Geringer M.E., Popp B.N., Grammatopoulou E. and Mayor D.J. (2020) Trophic interactions of megafauna in the Mariana and Kermadec trenches inferred from stable isotope analysis. *Deep Sea Research I* 164:103360, <https://doi.org/10.1016/j.dsr.2020.103360>.
30. Romero-Romero S., Ka'apu-Lyons C.A., Umhau B.P. Benitez-Nelson C.R., Hannides C.C.S, Close H.G., Drazen J.C. and Popp B.N. (2020) Deep zooplankton rely on small particles in response to low particle flux. *Limnology and Oceanography Letters* 5:410-416, doi: 10.1002/lol2.10163.
31. Motta L.C., Blum J.D., Popp B.N., Drazen J.C., and Close H.G. (2020) Mercury stable isotopes in flying fish as a monitor of phytochemical degradation of methylmercury in the Atlantic and Pacific Oceans. *Marine Chemistry* 223:103790, <https://doi.org/10.1016/j.marchem.2020.103790>.
32. Fackrell J., Glenn C., Thomas D., Whittier R. and Popp B.N. (2020) Stable isotopes of precipitation and groundwater provide new insight into groundwater recharge and flow in a structurally complex hydrogeologic system; West Hawaii, USA. *Hydrology Journal* 28:1191-1207, doi/10.1007/s10040-020-02143-9.
33. Hannides C.C.S., Popp B.N., Close H.G, Benitez-Nelson C.R., Ka'apu-Lyons C.A., Gloeckler K., Wallsgrove N., Umhau B., Palmer E., and Drazen J.C., (2020) Seasonal dynamics of midwater zooplankton and relation to particle cycling in the North Pacific Subtropical Gyre. *Progress in Oceanography* 182:102266, <https://doi.org/10.1016/j.pocean.2020.102266>.
34. Wall C.B., Kaluhiokalani M., Popp B.N., Donahue M. and Gates R.D. (2020) Divergent symbiont communities determine the physiology and isotope values of a reef coral across a light-availability gradient. *The ISME Journal* <https://doi.org/10.1038/s41396-019-0570-1>.

35. Shih J.L., Selph K.E., Wall C.B., Wallsgrove N.J., Lesser M.P and Popp B.N. (2020) Trophic ecology of the tropical Pacific sponge *Mycale grandis* inferred from amino acid compound specific isotopic analyses. *Microbial Ecology* 79:495-510, <https://doi.org/10.1007/s00248-019-01410-x>.

## GRANTS & CONTRACTS (2020-2025)

### Active Grants

1. BALEEN: Balaenopterids – A layered Exposures and Effects Nexus. K. West is PI, B.N. Popp is co-PI. 5/2020-4/2026. \$1,174,875. Office of Naval Research. Two graduate students supported.
2. Collaborative Research: Isotopic indicators for mechanisms of organic matter degradation under high productivity and high carbon flux conditions (EXPORTS). B.N. Popp is PI/PD and K.D. Seraphin co-PI are joint with H. Close (RSMAS), 08/01/2021 – 12/31/2025, UH share \$507,547. NSF-OCE. One graduate student supported.

### Pending

1. None

### Previous Grants (now inactive)

1. MRI: Track 1 Acquisition of a Stable Isotope Mass Spectrometer for Earth and Ocean Science Research. B.N. Popp is PI/PD. 8/2023-7/2024. \$209,705. NSF-MRI.
2. Characterization and monitoring of the water column ecosystem in the eastern CCZ (NORI –D). J.C. Drazen is PI, C. Carter, M. Hatta, E. Goetze, B.N. Popp and A. White co-PIs. 04/2020-03/2023. \$2,872,734. DeepGreen Metals Inc. Three graduate students supported.
3. Collaborative Research: Assessing the relative importance of small vs large particles as sources of nutrition to abyssal communities. J.C. Drazen is PI/PD, B.N. Popp and C.R. Smith co-PIs, 09/2019-08/2023, \$1,070,925, NSF-OCE Biological Oceanography. Two graduate students, one undergraduate student and 1 postdoc supported.
4. Understanding Chondria spread at Papahānaumokuākea Marine National Monument (HI). A. Sherwood is PI/PD, A. Kealoha and B.N. Popp are co-PI. 06/2022-12/2023, \$115,969. NOAA through the National Fish and Wildlife Foundation. One graduate student supported.
5. Collaborative Research: Isotopic indicators for mechanisms of organic matter degradation in the northeast Pacific (EXPORTS). B.N. Popp is PI/PD, 07/2018-06/2022, \$430,812. NSF-OCE Chemical Oceanography. One graduate student and one undergraduate student supported.

6. Collaborative Research: Chemoautotrophy in Antarctic bacterioplankton communities supported by the oxidation of urea-derived nitrogen. B.N. Popp is PI/PD, 10/2017-09/2020, \$164,510. NSF-OPP Antarctic Organisms and Ecosystems. One undergraduate student supported.

*Number of Grant Application Submitted but not Funded*

2025 - 1  
2024 - 0  
2023 - 1  
2022 - 0  
2021 - 0  
2020 - 0  
2019 - 0  
2018 - 0  
2017 - 1

**AWARDS AND HONORS**

- University of Hawaii Board of Regents Excellence in Research Award (2022)
- Editor, Special Volume, ACS Earth and Space Chemistry (2019-2021)
- Tejada *et al.* (2021) Top 100 downloaded ecology papers in 2021, *Scientific Reports*
- Editorial Board, ACS Earth and Space Chemistry (2017-2020)
- Blum *et al.* (2013) Recognized by Web of Science, Highly cited paper in Geosciences
- Beman *et al.* (2011) Recognized by Web of Science, Highly cited paper in Geosciences
- Beman *et al.* (2008) Recognized by Web of Science, Highly cited paper in Geosciences
- Fellow, Geochemical Society and European Association for Geochemistry, 2006
- Laws *et al.* (1995) Best Paper of the Year 1995, Organic Geochemistry Division of the Geochemical Society

**SERVICE, SYNERGISTIC ACTIVITIES**

2025

Member, Faculty Success Committee  
Chair, Paleoclimatology Faculty Search Committee  
Member, SOEST Ship Operations Committee  
Member, SOEST Research Council

2024

Member, Faculty Success Committee  
Chair, Paleoclimatology Faculty Search Committee  
Member, SOEST Ship Operations Committee

Member, SOEST Research Council

2023

Member, Faculty Success Committee  
Member, Geophysics Faculty Search Committee  
Member, SOEST Ship Operations Committee  
Member, SOEST Research Council

2022

Member, Faculty Success Committee  
Chair, Coastal Geology Faculty Search Committee  
Member, SOEST Ship Operations Committee  
Member, SOEST Research Council

2021

Chair, Departmental Personnel and Planning Committee  
Member, SOEST Ship Operations Committee  
Member, SOEST Research Council

2020

Chair, Departmental Personnel and Planning Committee  
Co-Chair, Departmental Faculty Search Committee (3 faculty positions)  
Guest Editor, Earth and Space Chemistry Special Issue