

Seth D. Newsome

University of New Mexico
Associate Professor, Department of Biology
Associate Director, Center for Stable Isotopes
190 Castetter Hall
Albuquerque, NM 87131 USA
newsome@unm.edu
<http://sethnewsome.org>

Research Interests Animal Ecology, Animal Eco-Physiology, Historical Ecology, Conservation Biology

Education

2000–2005 Ph.D., University of California Santa Cruz (Santa Cruz, CA)
Earth & Planetary Sciences Department

1995–1999 B.A., Dartmouth College (Hanover, NH)
Earth Sciences Department

Positions & Professional Development

2018– *Associate Professor*, Biology Department, University of New Mexico (Albuquerque, NM)

2014– *Associate Director*, University of New Mexico Center for Stable Isotopes

2013–2018 *Assistant Professor*, Biology Department, University of New Mexico (Albuquerque, NM)

2009–2012 *Post-Doctoral Research Scientist*, University of Wyoming (Laramie, WY)
Research focused on (1) using compound specific stable isotope analysis to quantify protein routing in mammals, birds and fish; (2) characterizing the ecology of an adaptive radiation in a group of South American songbirds via biochemical, physiological, and genetic tools. Advisors: Drs. Carlos Martinez del Rio and David G. Williams

2006–2009 *Post-Doctoral Research Scientist*, Carnegie Institution of Washington (Washington, DC)
Research focused on (1) development of stable isotope methods to assess ecological niche and eco-physiological variation, foraging specialization, and dispersal characteristics of mammals and birds; (2) human impacts on ecosystem change in Australia and southern California.
Advisor: Dr. Marilyn L. Fogel

2000–2005 *Ph.D. Candidate*, UC-Santa Cruz (Santa Cruz, CA)
Research focused on historic and prehistoric ecology of marine mammals, with emphasis on the northern fur seal in the northeast Pacific Ocean.
Advisor: Dr. Paul L. Koch

2000 *Senior Lab Technician*, Lawrence Berkeley National Laboratory (Berkeley, CA)
Managed stable isotope facility and conducted research using isotopic tracers to track fluid and contaminant migration through sediments and groundwater.
Advisor: Dr. Mark E. Conrad

1998–1999 *Senior Honors Thesis*, Dartmouth College (Hanover, NH)

Grants (2006–2019)

- 2019 National Science Foundation: Biological Oceanography (\$983,680, pending)
“Heat, hydrodynamics, and heterotrophy: investigating the role of food supply in coral resilience to ocean warming”
Co-PI with Drs. Anne Cohen and Michael Fox (WHOI)
- 2019 National Science Foundation: Systematics and Biodiversity Science (\$730,000, pending)
“Small mammal microbiomes, arthropods, and helminths (SMASH)”
Co-PI with Drs. Joe Cook (UNM), Steve Greiman (GSU), and Derek Sikes (UAF)
- 2019 National Institutes of Justice: Biological Oceanography (\$222,282, pending)
“Compound-specific stable isotope analysis of human keratin tissues for migration and region of origin determination”
Co-PI with Dr. Christy Mancuso (UNM)
- 2018 FONDECYT–Chile (\$341,000)
“Using stable isotope values of prehistorical and contemporary marine consumers to characterize change and the role of natural and anthropogenic disturbance in coastal food webs over 13,000 years”
International Collaborator with PI Dr. Chris Harrod (University of Antofagasta)
- 2018 National Science Foundation: Advanced Biological Infrastructure (\$1,367,313)
“IsoBank: a centralized repository for isotopic data”
Lead PI with Co-PIs Drs. Jon Pauli (UWM), Chris Jordan (TACC), and Gabe Bowen (UU)
- 2018 National Science Foundation: Division of Integrative and Organismal Systems (\$900,735)
“The role of gut microbiota in supplying amino acids to their mammalian hosts”
Lead PI with Co-PIs Drs. Cristina Takacs-Vesbach (UNM) and Marilyn Fogel (UCR)
- 2018 National Science Foundation: Division of Environmental Biology (\$6,400,000)
“LTER: Sevilleta (SEV) Site: Climate variability at dryland ecotones”
Co-PI with Drs. Jennifer Rudgers (UNM), Marcy Litvak (UNM), Yiqi Luo (OSU), and Tom Miller (Rice)
- 2017 National Science Foundation: Division of Environmental Biology (\$276,566)
“EAGER: Collaborative Research: Environmental variability at dryland ecotones”
Co-PI with Drs. Jennifer Rudgers (UNM), Marcy Litvak (UNM), Yiqi Luo (OSU), and Tom Miller (Rice)
- 2016 National Science Foundation: Biological Oceanography (\$747,825)
“The energetic assembly of biological communities: a test with deep-sea woodfalls”
Co-PI with Dr. Craig McClain (LUMCON)
- 2016 National Science Foundation: Division of Environmental Biology (\$720,000)
“Moving beyond causation: the ecological consequences of the terminal Pleistocene extinction of North American megafauna.”
Co-PI with Drs. Felisa Smith (UNM) and Kate Lyons (Smithsonian)
- 2016 National Science Foundation, Archaeology (\$300,000)
“Late Pleistocene and early Holocene climate change and human ecology in the tropical Maya lowlands”
Senior Personnel with Co-PIs Drs. Keith Prufer, Yemane Asmerom, Doug Kennett, Brendan Culleton
- 2016 FONDECYT–Chile (\$289,693)
“Passerine birds facing marine environments: foraging on salty prey and fighting oxidative stress”
Senior Personnel with Co-PIs Drs. Pablo Sabat, Francisco Bozinovic, and Robert Nespolo
- 2015 North Pacific Research Board (\$152,602)
“The effects of sea ice loss on protein and fat stores of food-deprived polar bears”
Co-PI with Dr. Merav Ben-David (UW)
- 2014 National Science Foundation: Major Research Instrumentation (\$449,021)
“MRI: acquisition of instrumentation for compound-specific stable isotope analysis at UNM”
Lead PI with Co-PIs Drs. Zach Sharp, Blair Wolf, Dave Hanson, and Tom Turner (UNM)
- 2014 United States Fish & Wildlife Service–King Salmon, AK (\$38,000)
“Marine resource use and individual diet specialization of Alaska wolves”
Co-PI with Dom Watts (USFWS)
- 2013 Smithsonian Institution (\$100,000)
“Biodiversity, Genomics, and Human Ecology of California's Channel Islands”
Collaborator with Drs. Torben Rick, Scott Sillett, Rob Fleischer, Jesus Maldonado, Kathy Ralls
- 2013 United States Fish & Wildlife Service–King Salmon, AK (\$10,000)
“Marine resource use and individual diet specialization of Alaska Peninsula wolves”
Lead PI with Co-PI Dom Watts (USFWS)

- 2013 United States Geological Survey & National Park Service—Anchorage, AK (\$17,000)
“Inter-tidal interactions among kelp and invertebrates in south central Alaska”
Lead PI
- 2012 North Pacific Research Board (\$143,970)
“Retrospective study of walrus foraging and movement patterns during a major ecosystem shift in the Bering and Chukchi Seas”
Lead PI with Co-PIs Dr. Patrick R. Lemons (USFWS)
- 2012 National Park Service and U.S. Navy (\$28,040)
“Characterizing island fox dietary preferences across habitats on the Channel Islands”
Lead PI with Co-PI Drs. Katherine Ralls (Smithsonian) and Brian Cypher (CSUB)
- 2012 United States Geological Survey, Alaska Science Center—Anchorage, AK (\$24,000)
“Demographic parameters of walruses estimated from the analysis of stable isotopes in archived teeth”
Lead PI with Co-PI Dr. Dan Monson (USGS)
- 2012 United States Fish & Wildlife Service—Homer, AK (\$20,000)
“Determining sea otter forage taxa in southeast Alaska through isotope markers in vibrissae”
Lead PI with Co-PI Dr. Verena Gill (USFWS)
- 2012 United States Fish & Wildlife Service—King Salmon, AK (\$26,000)
“Marine resource use and individual diet specialization of Alaska Peninsula wolves”
Lead PI with Co-PI Dom Watts (USFWS)
- 2011 FONDECYT—Chile (\$92,732)
“The introduction of salmon in southern Chile and its effects on the trophic ecology of sea lions”
International Collaborator with PI Dr. Maritza Sepulveda Martinez (University of Valparaiso)
- 2011 United States Geological Survey, Alaska Science Center—Anchorage, AK (\$24,750)
“Coastal ecosystem responses to influences from land and sea”
Co-Investigator with Co-PIs Drs. Jim Bodkin and Tim Tinker (USGS)
- 2011 National Science Foundation: Population and Community Ecology (\$380,000)
“Extending the potential for hydrogen isotope tracers in ecology”
Lead PI with Co-PI Dr. Marilyn L. Fogel (Carnegie Institution of Washington)
- 2011 Montrose Settlements Restoration Program (\$50,823)
“Quantifying the diets of breeding bald eagles on the Channel Islands: a multi-proxy approach”
Lead PI with Co-PIs Drs. Paul W. Collins (SBNHM) and Peter Sharpe (IWS)
- 2011 Australian Marine Mammal Centre (\$21,198)
“Southern right whales and stable isotopes: toward defining feeding habitat and trophic ecology”
Co-PI with PIs Mark Hindell, Simon Childerhouse, and Glenn Dunshea
- 2011 United States Geological Survey, Alaska Science Center—Anchorage, AK (\$40,000)
“Demographic parameters of walruses estimated from the analysis of stable isotopes in archived teeth”
Lead PI with Co-PI Dr. Dan Monson (USGS)
- 2011 Fisheries and Oceans Canada-Ottawa, CAN (\$14,000)
“Coupling isotopes and GPS-derived ringed seal movement data”
Lead PI with Co-PI Dr. Steve Ferguson (Fisheries & Oceans Canada)
- 2010 United States Fish & Wildlife Service—Homer, AK (\$20,000)
“Determining sea otter forage taxa in southeast Alaska through isotope markers in vibrissae”
Lead PI with Co-PI Dr. Verena Gill (USFWS)
- 2010 Montrose Settlements Restoration Program (\$26,203)
“Quantifying the diets of breeding bald eagles on the Channel Islands: a multi-proxy approach”
Lead PI with Co-PI Dr. Paul W. Collins (SBNHM)
- 2010 United States Geological Survey, Alaska Science Center—Anchorage, AK (\$23,000)
“Coastal ecosystem responses to influences from land and sea”
Lead PI with Co-PIs Drs. Jim Bodkin and Tim Tinker (USGS)
- 2008 National Science Foundation: Integrative Biology Program (\$527,000)
“Isotopes, niches, and birds: the functional ecology of an adaptive radiation”
Senior Personnel with PI Dr. Carlos Martinez del Rio (UW)
- 2007 Smithsonian Walcott Fund (\$35,000)
“Stable isotope analysis of great gray owl (*Strix nebulosa*) invasions in North America”
Co-PI with Dr. Gary R. Graves (Smithsonian)
- 2007 Smithsonian Endowment Fund (\$30,000)
“Evaluating dietary specialization in sea otters via fatty acid and stable isotope analysis”
Co-PI with Drs. Katherine Ralls & Olav Oftedal (Smithsonian)

- 2007 United States Fish & Wildlife Service-Anchorage, AK (\$14,500)
 “Investigating dietary links to valvular endocarditis in Lower Cook Inlet, AK sea otters”
 Lead PI with Co-PIs Drs. Angela Doroff & Verena Gill (AKFWS)
- 2006 National Science Foundation: Biological Oceanography Program (\$235,319)
 “Holocene phylochronology and ecology of the northern fur seal”
 Co-written with Drs. Liz Hadly & Marcel van Tuinen (Stanford University)

Peer-Reviewed Publications

*Student Author

Manuscripts in Review

- Newsome, S.D.**, *Feeser, K., Bradley, C.J., *Wolf, C., Vesbach-Takacs, C., Fogel, M.L. (In Review) Quantifying the role of the gut microbiome in host essential amino acid metabolism. *ISME Journal*
- Aurioles-Gamboa, D., Rosas Hernandez M., Hernandez Camacho, C., **Newsome, S.D.** (In Revision) Isotopic breadth and overlap in juvenile and adult female *Zalophus californianus*. *Marine Mammal Science*.
- *Elliott Smith, E.A., Tinker, M.T., *Whistler, E.L., Kennett D.J., Vellanoweth, R.L., Gifford-Gonzalez, D., **Newsome, S.D.** (Submitted) The absent niche: range-wide historical ecology of the southern sea otter (*Enhydra lutris nereis*). *Conservation Biology*.
- *Dyez, K.A., Koch, P.L., Ford, H.L., Schellenberg, S.A, **Newsome, S.D.**, Hylkema, M.G. (In Revision) Mollusk geochemical records show stable late Holocene climate on the central California coast. *The Holocene*.
- *Fox, M.D., *Elliott Smith, E.A., Smith, J.E., **Newsome, S.D.** (In Revision) Amino acid $\delta^{13}\text{C}$ analysis reveals trophic plasticity in a common reef-building coral. *Functional Ecology*.
- *Noble, J.D., Collins, S.L., *Hallmark, A.J., Wolf, B.O., **Newsome, S.D.** (In Review) Foraging strategies of individual silky pocket mice over a boom-bust population cycle in a highly stochastic arid ecosystem. *Oecologia*.
- *Phillips, N.D., *Elliott Smith E.A., **Newsome, S.D.**, Houghton, J.D.R., Carson, C., Alfaro Shigueto, J., Mangel, J., Eagling, L.E., Harrod, C. (Submitted) Bulk tissue and amino acid stable isotope analysis reveal global ontogenetic patterns in ocean sunfish diet and habitat use. *Marine Ecology Progress Series*.
- *Polo-Silva, C., Newsome, S.D., Kim, S.L., Soto-Jimenez, M.F., O'Hara, T.M., Galvan-Magana, F. (In Review) Ontogenetic variation in diet and habitat use of blue sharks (*Prionace glauca*) in the Mexican Pacific determined from stable isotope analysis. *Marine Ecology Progress Series*.
- *Tome, C.P., *Elliott Smith, E.A., Lyons, S.K., Stafford, T.W., **Newsome, S.D.**, Smith, F.A. (In Review) The response of a small herbivorous mammal (*Sigmodon hispidus*, hispid cotton rat) to the late Pleistocene megafauna extinction. *Ecography*.

2019

- Aurioles-Gamboa, D., **Newsome, S.D.**, Hassrick, J., Acosta-Pachon, T., Aurioles-Rodriguez, F., Costa, D.P. (2019) Vibrissa growth rates in free ranging northern elephant seal females (*Mirounga angustirostris*). *Marine Ecology Progress Series* 614: 199–207.
- *Carter, W., Whiteman, J.P., Cooper-Mullin C., **Newsome, S.D.**, McWilliams, S. (2019) The dynamics of zebra finch flight muscle lipids revealed by fatty acid turnover. *Physiological and Biochemical Zoology*. 92: 239–251.
- Maldonado, K., **Newsome, S.D.**, Razeto-Barry, P., Manuel Rios, J., Piriz, G., Sabat, P. (2019) Individual diet specialization is driven by phenotypic plasticity in digestive enzymes and trade-offs in animal performance. *Ecology Letters* 22: 128–137.

- Sabat, P., Bozinovic, F., Contreras-Ramos, C., Nespolo, R., **Newsome, S.D.**, Quirici, V., Maldonado, K., Ramirez-Otarola, N., Sanchez-Hernandez, J.C. (In Press) The interplay between ambient temperature and salt intake affects oxidative status and immune responses in a ubiquitous Neotropical passerine, the rufous-collared sparrow. *Comparative Biochemistry and Physiology A*.
- Tinker, M.T., Tomoleoni, J.A., Wietzman, B.P., Staedler, M., Jessup, D., Murray, M.J., Miller, M., Burgess, T., Bowen, L., Miles, A.K., Thometz, N., Tarjan, L., Golson, E., Batac, F., Dodd, E., Berberich, E., Kunz, J., Bentall, G., Fujii, J., Nicholson, T., **Newsome, S.D.**, Melli, A., LaRoche N., MacCormick H, Johnson, A., Henkel, L., Kreuder-Johnson, C., Conrad, P. (2019) Southern sea otter (*Enhydra lutris nereis*) population biology at Big Sur and Monterey, California — Investigating the consequences of resource abundance and anthropogenic stressors for sea otter recovery. *USGS Open-File Report 2019-1022*.
- *Vokhshoori, N., McCarthy, M.D., Collins, P.W., Etnier, M.A., Rick, T.C., **Newsome, S.D.** (2019) Evaluating long-term shifts in the distribution and diet of North Pacific albatrosses with bulk tissue and amino acid isotope values. *Marine Ecology Progress Series* 610: 1–13.
- Whiteman, J.P., *Elliott Smith E.A., *Besser, A.C., **Newsome, S.D.** (2019) A guide to using compound-specific stable isotope analysis to study molecules, organisms, and ecosystems. *Diversity* 11: 8.
- Whiteman, J.P., Sharp, Z.D., Gerson, A.R., **Newsome, S.D.** (In Press) Relating $\Delta^{17}\text{O}$ values of animal body water to exogenous water inputs and metabolism. *BioScience*.
- 2018
- Newsome, S.D.**, Chivers, S., Berman Kowalewski, M. (2018) The influence of lipid-extraction and long-term dimethyl sulfoxide preservation on carbon and nitrogen isotope values in cetacean skin. *Marine Mammal Science* 34:277–293.
- *Elliott Smith, E.A., Harrod, C., **Newsome, S.D.** (2018) Untangling the importance of kelp carbon to an intertidal ecosystem using amino acid $\delta^{13}\text{C}$ analysis. *Ecosphere* 9: e02516.
- *Gadek, C.R., **Newsome, S.D.**, Beckman, E.J., Chavez, E.N., Galen, S.C., Witt, C.C. (2018) Why are tropical mountain passes low for some species? Genetic and stable isotope tests for differentiation, migration, and expansion in elevational generalist songbirds. *Journal of Animal Ecology* 87:741–753.
- Graves, G.R., **Newsome, S.D.**, Fogel, M.L. (2018) Stable hydrogen isotope variability in feather keratin of a migratory wood warbler. *PLoS ONE* 13: e0193486.
- *Hixon, S.W., *Elliott Smith E.A., Crowley B., Perry, G., Bankoff, R., Kennett, D., **Newsome, S.D.** (2018) Patterns in $\delta^{15}\text{N}$ values for amino acids in lemur bone are inconsistent with aridity driving megafaunal extinction in southwestern Madagascar. *Journal of Quaternary Science* 33: 958–968.
- Hobson, K.A., Wassenaar, L.I., Bowen, G.J., Courtiol, A., Trueman, C.V., Voight, C.C., West, J.B., McMahon, K.W., **Newsome, S.D.** (2018) Outlook for using stable isotopes in animal migration studies. *Tracking Animal Migration with Stable Isotopes*. K.A. Hobson, L.I. Wassenaar, editors. Elsevier.
- *Hughes, K., Whiteman, J.P., **Newsome, S.D.** (2018) The relationship between dietary protein content, body condition, and $\delta^{15}\text{N}$ discrimination in a mammalian omnivore. *Oecologia* 186: 357–367.
- McMahon, K.W., **Newsome, S.D.** (2018) Compound-specific isotope analysis: the next frontier in isotopic tracking of animals. *Tracking Animal Movement with Stable Isotopes*. K.A. Hobson, L.I. Wassenaar, editors, Elsevier.
- *Poblete, Y., Gutierrez, V., Venegas, C., Cid, V., **Newsome, S.D.**, Sabat, P., Vasquez, R. (2018) Behavioral and morphometric differences among populations: exploration and migration at different altitudes in Rufous collared sparrow. *Oecologia* 186: 931–938.

Resasco, J., Tuff, K., Cunningham, S.A., Melbourne, B.A., Hicks, A., **Newsome, S.D.**, Davies, K.F. (2018) Experimental forest fragmentation alters food-web structure and the environment: evidence from a generalist predator's niche shift. *Ecography* 41: 1209–1219.

*Rodriguez Curras, M.R., Fogel, M.L., **Newsome, S.D.** (2018) Assimilation and discrimination of hydrogen isotopes in a terrestrial mammal. *Oecologia* 188: 381–393.

*Rodriguez Perez, M.Y., Auriolos-Gamboa, D., Sanchez-Velasco, L., Lavin, M.F., **Newsome, S.D.** (2018) Isoscape of the upper Gulf of California: a tool for identifying critical habitat for the endemic and endangered vaquita (*Phocoena sinus*). *Marine Mammal Science* 34: 790–805.

*Tapia-Monsalve, R., **Newsome, S.D.**, Sanchez-Hernandez J.C., Bozinovic, F. Nespolo, R., Sabat P. (2018) Terrestrial birds in coastal environments: metabolic rate and oxidative status varies with the use of marine resources. *Oecologia* 188: 65–73.

Whiteman, J.P., Kim, S.L., McMahon, K.W., Koch, P.L., **Newsome, S.D.** (2018). Amino acid isotope discrimination factors for a carnivore: physiological insights from leopard sharks and their diet. *Oecologia* 188: 977–989.

2017

Newsome, S.D., Wolf, N., Bradley, C.J., Fogel, M.L. (2017) Hydrogen isotope assimilation and discrimination in tilapia: implications for studying animal diet with $\delta^2\text{H}$. *Ecosphere* 8.

Braje, T.J., Rick, T.C., Szpak, P., **Newsome, S.D.**, McCain, J.M., *Elliott Smith, E.A., Glassow, M., Thakar, H. (2017) Historical ecology and the conservation of large, hermaphroditic fishes in Pacific coast kelp forest ecosystems. *Science Advances* 3: e1601759.

*Busquets-Vass G., **Newsome, S.D.**, Calambokidis, J., Aguiniga-Garcia, S., Serra-Valente, G., Jacobsen, J., Gendron, D. (2017) Estimating blue whale skin isotopic incorporation rates and baleen growth rates: implications for assessing diet and movement pattern in mysticetes *PLoSOne* 12: e0177880.

Maldonado, K., Bozinovic, F., **Newsome, S.D.**, Sabat, P. (2017) Testing the niche variation hypothesis in a community of passerine birds. *Ecology* 98: 903–908.

*O'Brien, S.L., Cook, J.A., **Newsome, S.D.** (2017) Small mammal niche differentiation within the Alexander Archipelago, Southeast Alaska. *Journal of Mammalogy* 99: 108–116.

Pauli, J.N., **Newsome, S.D.**, Cook, J.A., Harrod, C., Steffan, S.A., Baker, C.J.O., Ben-David, M., Bloom, D., Bowen, G.J., Cerling, T., Cicero, C., Cook, C., Dohm, M., Dharampal, P.S., Graves, G.R., Gropp, R., Hobson, K.A., Jordan, C., MacFadden, B.J., Pilaar Birch, S., Poelen, J., Ratnasingham, S., Russell, L., Stricker, C.A., Uhen, M.D., Yarnes, C.T., Hayden, B. (2017) Opinion: Why we need a centralized repository for isotopic data. *Proceedings of the National Academy of Sciences USA* 114: 2997–3001.

*Rader, J., **Newsome, S.D.**, Sabat, P., Chesser, R.T., Dillon, M.E., Martinez del Rio, C. (2017) Isotopic niches support the resource breadth hypothesis. *Journal of Animal Ecology* 86: 405–413.

Riccialdelli, L. **Newsome, S.D.**, Fogel, M.L., Fernandez, D.A. (2017) Trophic interactions and food web structure of a sub-Antarctic marine food web in the Beagle Channel: Bahia Lapataia, Argentina. *Polar Biology* 40: 807–821.

Sabat, P, Narvaez, C., Peña-Villalobos, I., Contreras, C., Maldonado, K., Sanchez-Hernandez, J.C., **Newsome, S.D.**, Nespolo, R. (2017) Coping with salt water habitats: metabolic and oxidative responses to salt intake in the rufous-collared sparrow. *Frontiers in Physiology* 8: 654.

Sepulveda, M., *Pavez, G., Santos, M., Muñoz*, L., Moraga, R., Pequeño, G., **Newsome, S.D.** (2017) Spatial, temporal, age, and sex relative variation in the diet of South American sea lions in southern Chile. *Marine Mammal Science* 33: 480–495.

Watts, D.E., **Newsome, S.D.** (2017) Exploitation of marine resources by wolves and its potential consequences for wolf-ungulate interactions in southwest Alaska. *Journal of Mammalogy* 98: 66–76.

Young, C., Miller, M.A., Kuchta, R., Brabec, J., **Newsome, S.D.**, Dailey, M. (2017) First report of an adult tapeworm (Cestoda: Diphylobothriidea) in a southern sea otter (*Enhydra lutris nereis*). *Journal of Wildlife Diseases* 53: 934–937.

2016

*Conrad, C., Jones, E.L., **Newsome, S.D.**, Schwartz D.W. (2016) Eggshell, bone isotopes, and turkey husbandry at Arroyo Hondo Pueblo. *Journal of Archaeological Science: Reports* 10: 566–574.

Fogel, M.L., *Griffin, P., **Newsome, S.D.** (2016) Hydrogen isotopes in individual amino acids reflect differentiated pools of hydrogen from food and water in *Escherichia coli*. *Proceedings of the National Academy of Sciences USA* 113: 4648–4653.

*Hofman, C.A., Rick, T.C., Maldonado, J.E., Collins, P.W., Fleischer R., Smith, C., Sillett, S., Ralls, K., Teeter, W., Vellanoweth, R., **Newsome, S.D.** (2016) Tracking the diet of an endangered carnivore across 7300 years of human cultural and environmental change. *Quaternary Science Reviews* 146: 147–160.

Jones, E.L., *Conrad, C., **Newsome, S.D.**, Kemp, B.M., *Kocer, J.M. (2016) Turkeys on the fringe: variable husbandry in marginal areas of the prehistoric American Southwest. *Journal of Archaeological Science: Reports* 10: 575–583.

Rode, K.D., Stricker, C.A., Erlenbach, J., Robbins, C.T., Cutting, A., Jensen, S. **Newsome, S.D.**, Cherry, S.G., Stenhouse, G., Brooks, M., Hash, A., Nicassio, N. (2016) Isotopic incorporation and the effects of fasting and dietary lipid content on isotopic discrimination in large carnivorous mammals. *Physiological and Biochemical Zoology* 89: 182–197.

Smith, F.A., *Tome, C.P., *Elliott Smith, E.A., Lyons, S.K., **Newsome, S.D.**, Stafford, T.W. (2016) Unraveling the consequences of the terminal Pleistocene megafauna extinction on mammal community assembly. *Ecography* 39: 223–239.

*Villegas, M., **Newsome, S.D.**, Blake, J.G. (2016) Seasonal patterns in hydrogen isotope ($\delta^2\text{H}$) values of multiple tissues from Andean birds provide insights into elevational migration. *Ecological Applications* 26: 2381–2387.

*von Biela, V.R., **Newsome, S.D.**, Bodkin, J.L., Kruse, G.H., Zimmerman, C.E. (2016) Widespread kelp-derived energy in pelagic and benthic nearshore fishes suggested by stable isotope analysis. *Estuarine, Coastal, and Shelf Science* 181: 364–374.

Yeakel, J.D., Bhat, U., *Elliott Smith, E.A, **Newsome, S.D.** (2016) Exploring the isotopic niche: isotopic variance, physiological incorporation, and the temporal dynamics of foraging. *Frontiers in Ecology and Evolution* 4.

2015

Newsome, S.D., Tinker, M.T., Gill, V.A., *Hoyt, Z.N., Doroff, A., Nichol, L., Bodkin J.L. (2015a) The interaction of intraspecific competition and habitat on individual diet specialization: a near range-wide examination of sea otters. *Oecologia* 178: 45–59.

Newsome, S.D., Garbe, H.M., *Wilson, E.C., Gehrt S.D. (2015b) Individual variation in anthropogenic resource use in an urban carnivore. *Oecologia* 178: 115–128.

Newsome, S.D., Collins, P.W., Sharpe P. (2015c) Quantifying the diets of breeding bald eagles on the Channel Islands, California. *The Condor: Ornithological Applications* 117: 396–413.

Newsome, S.D., Sabat, P., Wolf, N., *Rader, J. Martinez del Rio, C. (2015d) Evidence of altitudinal migration and tissue-specific $\delta^2\text{H}$ differences in *Cinclodes*. *Ecosphere* 6: 1–18.

- *Cloyd, C.S., **Newsome, S.D.**, Eason, P.K. (2015) Trophic discrimination factors and incorporation rates of carbon and nitrogen stable isotopes in adult green frogs, *Lithobates clamitans*. *Journal of Experimental Biology* 88: 576–585.
- *Elliott Smith, E.A., **Newsome, S.D.**, Estes, J.A., Tinker, M.T. (2015) The cost of reproduction: differential resource specialization in female and male California sea otters. *Oecologia* 178: 17–29.
- *Hofman, C.A., Rick, T.C., Hawkins, M.T.R., Funk, C., Ralls, K., Boser, C., Collins, P.W., Coonan, T., King, J., Morrison, S., **Newsome, S.D.**, Sillett, T.S., Fleischer, R., Maldonado, J.E. (2015) Mitochondrial genomes reveal rapid evolution of dwarf California Channel Islands foxes (*Urocyon littoralis*). *PLoSOne* 10: e0118240.
- Layman, C.A., **Newsome, S.D.**, *Gancos Crawford, T. (2015) Individual-level niche specialization within populations: emerging areas of study. *Oecologia* 178: 1–4.
- *Lounsberry Z.T., Brown, S.K., Collins, P.W., Henry, R.W., Nevins, H., Etnier, M.A., **Newsome, S.D.**, Sacks B.N. (2015) Sequencing mitogenomes of three North Pacific albatross (*Phoebastria* spp.) to circumvent confounding effects of gene duplications. *Molecular Ecology Resources* 15: 893–902.
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2005

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Manuscripts in Preparation

Newsome, S.D., *Nakamoto, B., *Rodriguez Curras, M., Fogel, M.L. Compound-specific $\delta^2\text{H}$ analysis highlights the complex interplay between direct assimilation versus de novo synthesis of amino acids from food and water in an omnivore. *Oecologia*.

*Besser, A.C., *Elliott Smith E.A., Barkalow, A., Turner, T.F., **Newsome, S.D.** An essential amino acid $\square^{13}\text{C}$ library for studying the synthesis and transfer of nutrients in freshwater aquatic and adjacent terrestrial ecosystems. *Ecological Applications*.

*Busquets-Vass, G., **Newsome, S.D.**, Pardo, M., Calambokidis, J., Serra-Valente, G., Jacobsen, J.K., Aguiniga-Garcia, S., Paez-Rosas, D., Gomez-Gutierrez, J., Gendron, D. Isotopic niche and diet of blue whales in the eastern Pacific Ocean. *Marine Ecology Progress Series*.

Gehrt, S.D., Muntz, E.M., *Wilson, E.C., **Newsome, S.D.** Space use, activity, and diet of coyotes in relation to coyote-human conflicts in Cape Breton Highlands National Park, Nova Scotia. *Proceedings of the National Academy of Sciences*.

Koch, P.L., Hall, B.L., de Bruyn, N., Hoelzel, A.R., Baroni, C., Salvatore, M.C., **Newsome, S.D.**, Gilbert, K.N., van den Hoff, J. Implications of mummified and skeletal southern elephant seal (*Mirounga leonina*) remains along the Victoria Land Coast, Antarctica. *Marine Mammal Science*.

*Lubcker, N., Whiteman, J.P., Millar, R., de Bruyn N, **Newsome, S.D.** Fasting affects amino acid nitrogen isotope values in southern elephant seal pups: implications for isotope-based dietary reconstructions. *Journal of Experimental Biology*.

Maldonado, K., **Newsome, S.D.** Individual diet specialization in a community of granivorous small mammals living in a stochastic environment. *Ecology*.

Monson, D.H., **Newsome, S.D.**, Riccialdelli, L., Garlich-Miller, J. Retrospective isotopic analysis of walrus tooth dentin shows flexibility in maternal strategies. *Marine Ecology Progress Series*.

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*Richins, A.E., Lightfoot, D.C., **Newsome, S.D.** Intra- and inter-specific variation in grasshopper foraging strategies in a mixed grassland/shrubland environment in central New Mexico. *Journal of Arid Environments*.

*Wedemeyer-Strombel, K.R., Seminoff, J.A., Liles, M.J., Neftali Sanchez, R., Chavarria, S., Valle, M., Altamirano, E., Gadea, V., Peterson, M.J., Peterson, T.R., Smith, K.J., Trueman, C.N., **Newsome, S.D.** Local ecological knowledge and stable isotope analysis confirm that mangrove estuaries are key developmental habitats for critically endangered hawksbill turtles. *Nature: Ecology and Evolution*.

Whiteman, J.P., Hobson, K.A., Chereh, Y., **Newsome, S.D.** Nutrient allocation differs between egg yolk and albumen in a capital breeder. *Physiological and Biochemical Zoology*.

*Wurth, A.M., **Newsome, S.D.**, Gehrt, S.D. Influence of urbanization on body size and condition of coyotes (*Canis latrans*) in the Chicago Metropolitan area. *Oecologia*.

Teaching & Advising Experience

Assistant/Associate Professor, University of New Mexico Department of Biology

Evolution & Ecology (Biology 303): Fall 2013, Spring 2015, Spring 2017, Spring 2018
Elemental Ecology (Biology 409/509): Spring 2014, Fall 2015, Fall 2017, Fall 2019
Biodiversity (Biology 191): Fall 2018
Ecology of the Past (Biology 409/509): Fall 2014, Fall 2016
Senior Honors Thesis Writing Seminar; Spring 2015–2018
Center for Stable Isotopes Brown Bag Seminar; 2014–2019 (every semester)
Applied Wildlife Ecology; Fall 2016

UNM Biology Department Committee Participation

Annual Review Committee: 2017–2018
Development of Ecology Concentration: 2013
Biology Scholarship Committee: 2013–2014
Undergraduate Honors Thesis Committee: 2013–2017

Organizer and Lecturer, Isotope Ecology Short Courses

Design and co-teach one- or two-week intensive short courses for graduate students and postdoctoral scientists on the uses of stable isotope analysis to study the ecology and physiology of marine and terrestrial plants and animals.

June 2013–2019: University of Utah (Salt Lake City, UT)
April 2017–2018: Sicily Center for International Education (Siracusa, Italy)
March 2012, July 2017, July 2019: Instituto Politecnico Nacional (La Paz, Mexico)
July 2017: Universidad de Guanajuato (Leon, Mexico)
March 2009: Universidad de La Plata (La Plata, Argentina)
May 2013: Centro Austral De Interdisciplinario Cientificas (Ushuaia, Argentina)
January 2012: Universidad de Los Lagos (Puerto Montt, Chile)
November 2012: Universidad de Chile (Santiago, Chile)

Graduate Student Thesis Committee Member (*Primary Advisor, †Graduated)

*Emma Elliott Smith (PhD) – UNM Biology Department (Albuquerque, NM)
**Deborah Boro (MS) – UNM Biology Department (Albuquerque, NM)
**†Laura Pages (MS) – UNM Biology Department (Albuquerque, NM)
*Alexi Besser (PhD) – UNM Biology Department (Albuquerque, NM)
†Meghan Balk (PhD) – UNM Biology Department (Albuquerque, NM)
†Matt Baumann (MS) – UNM Biology Department (Albuquerque, NM)
†Corrie Bergman (MS) – UNM Biology Department (Albuquerque, NM)
†Jennifer Noble (PhD) – UNM Biology Department (Albuquerque, NM)
†Melissa Pardi (PhD) – UNM Biology Department (Albuquerque, NM)
Catalina Tome (PhD) – UNM Biology Department (Albuquerque, NM)
†Alaina Pershall-Zimmerman (MS) – UNM Biology Department (Albuquerque, NM)
†Cycler Conrad (PhD) – UNM Anthropology Department (Albuquerque, NM)
†Marian Hamilton – UNM Anthropology Department (Albuquerque, NM)
Clayton Meredith – UNM Anthropology Department (Albuquerque, NM)
Jon Dombrosky – UNM Anthropology Department (Albuquerque, NM)
†Carl Cloyd – University of Louisville (Louisville, KY)
†Carlos Polo – Universidad Nacional Autonoma de Mexico (Mexico City, Mexico)
†Geraldine Busquets – Instituto Politecnico Nacional (La Paz, Mexico)
Carlos Alberto – Instituto Politecnico Nacional (La Paz, Mexico)
Yamila Becker – Centro Austral De Interdisciplinario Cientificas (Ushuaia, Argentina)

B.S. Senior Honors Thesis Students

Sarah Foster; Spring 2015; B.S. Biology; *Magna Cum Laude*.
Allyson Richins; Spring 2015; B.S. Biology; *Summa Cum Laude*
Mauriel Curras Rodriguez; Spring 2016; B.S. Biology; *Summa Cum Laude*
Chauncey Gadek; Spring 2016; B.S. Biology; *Summa Cum Laude*
Shannon O'Brien; 2017; B.S. Psychology (Honors College); *Summa Cum Laude*

Tommy Galfano; 2019 (Expected); B.S. Biology
Vishwa Patel; 2020 (Expected); B.S. Environmental Sciences
Alana Robinson; 2021 (Expected); B.S. Biology

Teaching Assistant (UC-Santa Cruz, 2000–2005)

Served as teaching assistant and lab coordinator for five undergraduate courses in the Earth Sciences Department, including *The Natural History of Dinosaurs (2x)*, *Vertebrate Paleontology*, *The Fossil Record*, and *The Earth as a Chemical System*.

Field Course Teaching Assistant (Dartmouth College, 1997–1999)

Served as teaching assistant and logistical coordinator for six field-based undergraduate courses focusing on stratigraphy, paleontology, tectonics, structural geology, mineralogy, hydrology, and geochemistry. These intensive 3-week field programs were staged in the Bighorn Basin of Wyoming (1997/98/99), Yellowstone National Park (1997/98), and Costa Rica (1999).