

Seth D. Newsome

University of New Mexico
Assistant Professor, Department of Biology
Associate Director, Center for Stable Isotopes
190 Castetter Hall, MSC03-2020
Albuquerque, NM 87131 USA
newsome@unm.edu; <http://sethnewsome.org>

Research Interests Animal Ecology, Eco-Physiology, Historical Ecology

Education

2000–2006 Ph.D., University of California-Santa Cruz (Santa Cruz, CA)
1995–1999 B.A., Dartmouth College, Environmental Earth Sciences (Hanover, NH)

Professional Development

1/2014–Present *Associate Director*, University of New Mexico Center for Stable Isotopes
1/2013–Present *Assistant Professor*, Biology Department, University of New Mexico (Albuquerque, NM)
8/2009–12/2012 *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 Dave Williams
1/2006–6/2009 *Post-Doctoral Research Scientist*, Carnegie Institution for Science (Washington, DC)
Research focused on (1) development of stable isotopes to assess ecological niche 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
9/2000–1/2006 *Graduate Student*, 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
1/2000–9/2000 *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
6/1998–6/1999 *Senior Honors Thesis*, Dartmouth College (Hanover, NH)

Grants & Awards

2016 American Society of Microbiology–Kavli Award (pending, \$315,345)
“The role of gut microbiota in supplying amino acids to their mammalian hosts”
Co-PI with Drs. Tina Takacs-Vesbach and Marilyn Fogel
2016 National Science Foundation: Division of Environmental Biology (\$5,400,000)
“Sevilleta LTER – Climate variability and dryland ecotones”
Co-PI with Drs. Jennifer Rudgers, Marcy Litvak, Yiqi Luo, and Tom Miller
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 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 (University of Wyoming)
- 2014 National Science Foundation: Major Research Instrumentation (\$449,021)
 “MRI: acquisition of instrumentation for compound-specific stable isotope analysis at UNM”
 Co-PI with 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”
 Co-PI with 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”
 Co-PI with Drs. Jim Bodkin (USGS), Brenda Ballachey (USGS), Heather Coletti (NPS)
- 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”
 Co-PI with Dr. Patrick R. Lemons (U.S. Fish & Wildlife Service)
- 2012 National Park Service and U.S. Navy (\$28,040)
 “Characterizing island fox dietary preferences across habitats on the Channel Islands”
 Co-PI with Drs. Katherine Ralls and Brian Cypher
- 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”
 Co-PI with 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”
 Co-PI with 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”
 Co-PI with 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”
 Co-Investigator 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”
 Co-PI with 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”
 Co-PIs with Dr. Paul W. Collins (SBNHM) and Dr. Peter Sharpe (IWS)
- 2011 Australian Marine Mammal Centre (\$21,198)
 “Southern right whales and stable isotopes: toward defining feeding habitat and trophic ecology”
 Co-Investigator with PIs Mark Hindell, Simon Childerhouse, and Glenn Dunshea

- 2011 United States Geological Survey, Alaska Science Center–Anchorage, AK (\$40,000)
“Demographic parameters of walrus estimated from the analysis of stable isotopes in archived teeth”
Co-PI with Dr. Dan Monson (USGS)
- 2011 Fisheries and Oceans Canada–Ottawa, CAN (\$14,000)
“Coupling isotopes and GPS-derived ringed seal movement data”
Co-PI with 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”
Co-PI with 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”
Co-PI with Dr. Paul W. Collins (Santa Barbara Museum of Natural History)
- 2010 United States Geological Survey, Alaska Science Center–Anchorage, AK (\$23,000)
“Coastal ecosystem responses to influences from land and sea”
Co-Investigator 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 Dr. Carlos Martinez del Rio (University of Wyoming)
- 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 Institution)
- 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 Institution)
- 2007 United States Fish & Wildlife Service–Anchorage, AK (\$14,500)
“Investigating dietary links to valvular endocarditis in Lower Cook Inlet, AK sea otters”
Co-PI with 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

Newsome, S.D., Berman Kowalewski, M., Chivers, S. (In Press) The influence of lipid-extraction and long-term dimethyl sulfoxide preservation on carbon and nitrogen isotope values in cetacean skin. *Marine Mammal Science*.

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*.

Braje, T.J., Rick, T.C., Szpak, P., **Newsome, S.D.**, McCain, J.M., *Elliott Smith, E.A., Glassow, M., Thakar, H. (2017) The past, present, and future of the southern California sheephead (*Semicossyphus pulcher*) fishery. *Science Advances*.

Maldonado, K., Bozinoviz, F., **Newsome, S.D.**, Sabat, P. (2017) Assessing the niche variation hypothesis and phylogenetic conservatism on individual specialization in a community of passerine birds. *Ecology*.

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. (In Press) Nucleating IsoBank. *Proceedings of the National Academy of Sciences USA*.

*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*.

Sepulveda, M., *Pavez, G., Santos, M., Muñoz*, L., Moraga, R., Pequeño, G., **Newsome, S.D.** (In Press) Impacts of salmon introduction on the trophic ecology of the South American sea lion in southern Chile. *Marine Mammal Science*.

- *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*.
- 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*.
- *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*.
- Riccialdelli, L. **Newsome, S.D.**, Fogel, M.L., Fernandez, D.A. (2016) Trophic relationships and foraging diversity in a sub-Antarctic food web in the Beagle Channel: Lapatia Bay, Argentina. *Polar Biology*.
- 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*.
- 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-Bilbao, 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*.
- *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. *Estuarine, Coastal, and Shelf Science*.
- Watts, D.E., **Newsome, S.D.** (In Press) Exploitation of marine resources by wolves and its potential consequences for wolf-ungulate interactions in southwest Alaska. *Journal of Mammalogy*.
- Yeakel, J.D., Bhat, U., *Elliott Smith, E., **Newsome, S.D.** (2016) Exploring the isotopic niche: isotopic variance, physiological incorporation, and the temporal dynamics of foraging. *Frontiers in Ecology and Evolution*.
- 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.
- 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.**, 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.**, 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.
- *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*.
- 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*.
- *Orr, T.J., **Newsome, S.D.**, Wolf, B.O. (2015) Cacti supply limited nutrients to a desert rodent community. *Oecologia* 178:1045–1062.
- Pauli, J.N., Steffan, S.S., **Newsome, S.D.** (2015) It is time for IsoBank. *Bioscience*.
- Sepulveda, M., **Newsome, S.D.**, *Pavez, G., Oliva, D., Costa, D.P. Huckstadt, L.A. (2015) Using satellite tracking and isotopic information to characterize the impact of South American sea lions on salmonid aquaculture in southern Chile. *PLoSOne*.
- *vonBiela V.R., **Newsome, S.D.**, Zimmerman, C.E. (2015) Correlation between otolith and muscle $\delta^{13}\text{C}$ values supports the use of otoliths as diet proxies in wild-caught black rockfish (*Sebastes melanops*). *Aquatic Ecology* 23:201–208.
- Wolf, N., **Newsome, S.D.**, *Peters, J., Fogel, M.L. (2015) $\delta^{13}\text{C}$ analysis shows flexibility in the routing of dietary protein and lipids to consumer tissues. *Rapid Communications in Mass Spectrometry* 29:1448–1456.
- Newsome, S.D.**, Wolf, N., *Peters, J., Fogel, M.L. (2014) Compound specific $\delta^{13}\text{C}$ analysis shows that mammals can use dietary lipids to synthesize non-essential amino acids for tissue synthesis. *Integrative and Comparative Biology* 54:890–902.
- Hamilton, S.L., **Newsome, S.D.**, Caselle, J.E. (2014) Niche expansion of a kelp forest predator recovering from intense commercial exploitation. *Ecology* 95:164–172.
- *Hernandez, L.D., Lounsberry Z.T., Collins, P.W., Henry, R.W., **Newsome, S.D.**, Sacks B.N. (2014) Development and characterization of 15 polymorphic microsatellite markers for North Pacific albatross using paired-end Illumina shotgun sequencing. *Conservation Genetics Resources*.
- Rick, T.C., Sillett, T.S., Ghalambor C.K., Hofman, C.A., Ralls, K., Anderson, R.S., Boser, C., Braje, T.J., Cayan, D., Chesser, T., Collins, P.W., Erlandson, J.M., Faulkner, K.R., Fleischer, R., Funk W.C., Galipeau, R., Huston, A., King, J., Laughrin, L., Maldonado, J., McEachern, K., Muhs, D.R., **Newsome, S.D.**, Reeder-Myers, L., Still, C., Morrison, S.A. (2014) From the Pleistocene to the Anthropocene: 20,000 years of ecological change and the future of biodiversity on the Channel Islands, California. *Bioscience*.
- *Polo-Silva, C., Galvan-Magana, F., **Newsome, S.D.**, Grijalba-Bendeck, M., Sanjuan-Munoz, A. (2013) Trophic shift in the diet of pelagic thresher shark (*Alopias pelagicus*) based on stable isotope analysis and stomach contents. *Marine Biology Research* 9: 958–971.
- *Elorriaga-Verplancken, F., Auriolles-Gamboa D., **Newsome, S.D.** (2013) Sex and age differences in feeding habits of California sea lions (*Zalophus californianus*): reconstruction from $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ values in dental collagen. *Marine Biology* 160: 641–652.
- *Ricciardelli, L., **Newsome, S.D.**, Dellabianca, N.A., Fogel, M.L., Goodall, N.P. (2013) Ontogenetic variation in trophic habits of Commerson's dolphin (*Cephalorhynchus commersonii*) off Tierra del Fuego, Argentina. *Polar Biology* 36: 617–627.
- *Tyrrell, L.P., **Newsome, S.D.**, Veins, M., Murray, M. (2013) Vibrissae growth rates and trophic discrimination factors in captive southern sea otters (*Enhydra lutris nereis*). *Journal of Mammalogy* 94: 331–338.

- *Wolf, N., Fogel, M.L., **Newsome, S.D.**, Martinez del Rio, M. (2013) The relationship between drinking water and δD and $\delta^{18}O$ values of avian tissues. *The Auk* 130: 323–330.
- Newsome, S.D.**, Wheatley, P.V., Tinker, M.T., Yeakel, J.D. (2012) Tools for quantifying isotopic niche space and dietary variation at the individual and population level. *Journal of Mammalogy* 93: 329–341.
- Alter, S.E., **Newsome, S.D.**, Palumbi, S.R. (2012) Pre-whaling genetic diversity and population ecology in eastern Pacific gray whales: insights from ancient DNA and stable isotopes. *PLoSOne* 7: e35039
- Ben-David, M., **Newsome, S.D.**, Whiteman, J.P. (2012) Lipid and amino acid composition influence incorporation and discrimination of stable carbon and nitrogen isotopes in captive mink. *Journal of Mammalogy* 93: 399–412.
- Graves, G.R., **Newsome, S.D.**, Willard, D.E., Grossheusch, D., Fogel, M.L. (2012) Stable isotope correlates of body condition of great gray owls during a historic winter irruption. *Canadian Journal of Zoology* 90: 787–797.
- Ricciardelli, L., **Newsome, S.D.**, Fogel, M.L., Goodall, N.P. (2012) Insight into Risso's dolphin population structure in the southwestern Atlantic Ocean using carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope values. *Marine Mammal Science* 28: 503–515.
- Wheatley, P.V., Peckham, H., **Newsome, S.D.**, Koch, P.L. (2012) Estimating marine resource use by *Crocodylus acutus* in southern Florida. *Marine Ecology Progress Series* 447: 211–229.
- Wolf, N., **Newsome, S.D.**, Fogel, M.L., Martinez del Rio, M. (2012) An experimental exploration of the incorporation of hydrogen isotopes from dietary sources into avian tissue. *Journal of Experimental Biology* 215: 1915–1922.
- Newsome, S.D.**, Collins, P., Rick, T., Guthrie, D.A., Erlandson, J.M., Fogel, M.L. (2011c) Reply to Hudgens et al.: Bald eagles, no-analog ecological scenarios, and conservation strategies on the Channel Islands. *Proceedings of the National Academy of Sciences USA* (online).
- Newsome, S.D.**, Miller, G.H., Magee, J.W., Fogel, M.L. (2011b) Quaternary record of aridity and mean annual precipitation based on $\delta^{15}N$ in ratite and dromornithid eggshells from Lake Eyre, Australia. *Oecologia* 167: 1152–1162.
- Newsome, S.D.**, Martinez del Rio, C., Kelly, L., Fogel, M.L. (2011a) Contributions of direct incorporation from diet and microbial amino acids to protein synthesis in Nile tilapias. *Functional Ecology* 25: 1050–1062.
- Hamilton, S.L., Caselle, J.E., Lantz, C., Egloff, T., Kondo, E, **Newsome, S.D.**, Loke-Smith, K., Young, K.A., Lowe, C.G. (2011) Extensive geographic and ontogenetic variation characterize the trophic ecology of California sheephead (*Semicossyphus pulcher*) in southern California. *Marine Ecology Progress Series* 429: 227–244.
- Orr, A.J., **Newsome, S.D.**, Laake, J.L., VanBlaricom, G.R., DeLong, R.L. (2011) Ontogenetic trends in foraging behaviors of California sea lions (*Zalophus californianus*) using stable isotopes. *Marine Mammal Science* 28: 714–732.
- Orr, A.J., VanBlaricom, G.R., DeLong, R.L., Cruz-Escalona, V.H., **Newsome, S.D.** (2011) Intraspecific comparison of California sea lion (*Zalophus californianus*) diet assessed using fecal and stable isotope analysis. *Canadian Journal of Zoology* 89:109–122.
- Newsome, S.D.**, Ralls, K., Van Horn Job, C., Fogel, M.L., Cypher B.L. (2010e) Stable isotopes evaluate exploitation of anthropogenic food by the endangered San Joaquin kit fox (*Vulpes macrotis mutica*). *Journal of Mammalogy* 91(6): 1313–1321.

- Newsome, S.D.**, Park, J.S., Henry, R.W., Holden, A., Fogel, M.L., Linthicum, J., Chu, V., Hooper K. (2010d) Polybrominated diphenyl ether (PBDE) burdens in California peregrine falcons (*Falco peregrinus*) are correlated with diet and human population density. *Environmental Science and Technology* 44(13): 5248–5255.
- Newsome, S.D.**, Collins, P.W., Rick, T.C., Guthrie, D.A., Erlandson, J.M., Fogel, M.L. (2010c) Pleistocene to historic shifts in bald eagle diets on the northern Channel Islands, California. *Proceedings of the National Academy of Sciences USA* 107(20): 9246–9251.
- Newsome, S.D.**, Bentall, G.B., Tinker, M.T., Oftedal, O., Ralls, K., Fogel, M.L., Estes, J.A. (2010b) Variation in diet-vibrissae $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ trophic discrimination factors in a wild population of California sea otters (*Enhydra lutris nereis*). *Ecological Applications* 20(6): 1744–1752.
- Newsome, S.D.**, Clementz, M.R., Koch, P.L. (2010a) Using stable isotope biochemistry to study marine mammal ecology. *Marine Mammal Science* 26(3): 509–572.
- Alexander, C.M.O.D., **Newsome, S.D.**, Fogel, M.L., Nitler, L.R., Busemann, H., Cody, G.D. (2010) Deuterium enrichments in chondritic macromolecular material – implications for the origin and evolution of organics, water, and asteroids. *Geochimica et Cosmochimica Acta* 74(15): 4417–4437.
- Graham, B., Koch, P.L., **Newsome, S.D.**, McMahon, K., Aurioles, D. (2010) Using isoscapes to trace the movement and foraging behavior of top predators in oceanic ecosystems. In: West J.B., Bowen G.J., Dawson T.E., Tu K.P. (eds.) *Isoscapes: Understanding Movement, Pattern, and Process on Earth through Isotope Mapping*. Springer-Verlag, Berlin.
- Pinsky, M.L., **Newsome, S.D.**, Dickerson, B., van Tuinen, M., Ream, R.R., Hadly, E.A. (2010) Minimal genetic effects of a demographic bottleneck and range contraction in *Callorhinus ursinus*. *Molecular Ecology* 19: 2418–2429.
- Ricciardelli, L., **Newsome, S.D.**, Fogel, M.L., Goodall, N.P. (2010) Isotopic assessment of prey and habitat preferences of a cetacean community in the southwestern Atlantic Ocean. *Marine Ecology Progress Series* 418: 235–248.
- Newsome, S.D.**, Etnier, M.A., Monson, D.H., Fogel M.L. (2009b) Retrospective characterization of ontogenetic shifts in killer whale diets via $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ analysis of sectioned teeth. *Marine Ecology Progress Series* 374: 229–242.
- Newsome, S.D.**, Tinker, M.T., Monson, D.H., Oftedal, O., Ralls, K., Fogel, M.L., Estes, J.A. (2009a) Using stable isotopes to investigate individual diet specialization in California sea otters (*Enhydra lutris nereis*). *Ecology* 90(4): 961–974.
- Aurioles-Gamboa, D., **Newsome, S.D.**, Salazar-Pico, S., Koch, P.L. (2009) Stable isotopic differences between sea lions (*Zalophus californianus*) from the Gulf of California and Galapagos Islands. *Journal of Mammalogy* 90(6): 1410–1420.
- Barton, L., **Newsome, S.D.**, Chen, F.H., Wang, H., Bettinger, R.L. (2009) Agricultural origins and the isotopic identity of domestication in northern China. *Proceedings of the National Academy of Sciences USA* 106(14): 5523–5528.
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- Orr, A.J., **Newsome, S.D.**, DeLong R.L. (2009) Variation in stable carbon and nitrogen isotope values from multiple tissues of California sea lions (*Zalophus californianus*). Pages 121–129 in: Damiani, C.C. and Garcelon, D.K. (eds.) *Proceedings of the 7th Annual Channel Islands Symposium*. Institute for Wildlife Studies, Arcata, CA.

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- Manuscripts in Review/Revision:**
- Cloyed, C.S., **Newsome S.D.**, Eason, P.K. (In Revision) Morphological, behavioral, and ecological causes of intrapopulation niche variation in bullfrogs, *Lithobates catesbeianus*. *Oecologia*.
- Betts, M.G., **Newsome, S.D.**, Wunder, M., Holmes, R.T., Fogel, M.L., Graves, G.R. (In Revision) Do source-sink dynamics of migrant songbirds occur a range-wide scales? A test using hydrogen stable isotopes. *Ecology*.
- *Busquets-Vass G., **Newsome, S.D.**, Calambokidis, J., Aguiniga-Garcia, S., Serra-Valente, G., Jacobsen, J., Gendron, D. (In Review) Inferring blue whale skin and baleen turnover via stable isotopes: implications for assessing the foraging ecology and movement patterns in mysticetes. *PLoSOne*.
- Hassrick, J.L., **Newsome, S.D.**, Palacios, D., Aurióles, D., Crocker, D.E., Costa, D.P. (In Revision) Isoscapes and trophic diversity revealed by combined satellite and isotopic tracking of a long-distance forager, the northern elephant seal. *Marine Ecology Progress Series*.
- *O'Brien, S.L., Cook, J.A., **Newsome, S.D.** (In Review) Small mammal niche differentiation within the Alexander Archipelago, Southeast Alaska. *Journal of Mammalogy*.

*Poblete, Y., Gutierrez, V., Venegas, C., Cid, V., **Newsome, S.D.**, Sabat, P., Vasquez, R. (In Review) Behavioral and morphometric differences among populations: exploration and migration at different altitudes in Rufous collared sparrow. *Oecologia*.

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

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

Manuscripts in Preparation:

Newsome, S.D., Bradley, C.J., *Feeser, K., *Wolf, C., Vesbach-Takacs, C., Fogel, M.L. (11/2016) Examining the role of gut microbes in protein metabolism: linking microbial community composition with amino acid $\delta^{13}\text{C}$ analysis. *Proceedings of the National Academy of Sciences USA*.

Bradley, C.J., **Newsome, S.D.**, *Wolf, C., Fogel, M.L. (12/2016) Tracking the metabolism and synthesis of amino acids in mouse liver and muscle tissue using nitrogen isotopes. *Proceedings of the National Academy of Sciences USA*.

*Curras, M.R., Fogel, M.L., **Newsome, S.D.** (10/2016) Assimilation and discrimination of hydrogen isotopes in a terrestrial mammal. *Oecologia*.

*Elliott Smith, E.A., Harrod, C., **Newsome, S.D.** (3/2017) Untangling the importance of kelp carbon to an intertidal ecosystem using amino acid $\delta^{13}\text{C}$ analysis. *Journal of Applied Ecology*.

*Hughes, K., Newsome, S.D. (3/2017) The relationship between dietary protein content, body condition, and $\delta^{15}\text{N}$ discrimination in a mammalian omnivore. *Functional Ecology*.

Gadek, C.R., **Newsome, S.D.**, Beckman, E.J., Chavez, E.N., Galen, S.C., Witt, C.C. (2/2017) Ecological and evolutionary consequences of broad elevational ranges in the tropics: a comparison of four songbird species on the Andean west slope. *Ecography*.

Gehrt, S.D., Muntz, E.M., Wilson, E.C., **Newsome, S.D.** (10/2016) Space use, activity, and diet of coyotes in relation to coyote-human conflicts in Cape Breton Highlands National Park, Nova Scotia. *Journal of Applied Ecology*.

Graves, G.R., **Newsome, S.D.**, Fogel, M.L. (10/2016) Stable hydrogen isotope variability in feather keratin of a migratory wood warbler. *The Condor: Ornithological Applications*.

Koch, P.L., Hall, B.L., de Bruyn, M., Hoelzel, A.R., Baroni, C., Salvatore, M.C., **Newsome, S.D.**, Gilbert, K.N., van den Hoff, J. (12/2016) Implications of mummified and skeletal southern elephant seal (*Mirounga leonina*) remains along the Victoria Land Coast, Antarctica. *Marine Mammal Science*.

Monson, D.H., **Newsome, S.D.**, Riccialdelli, L., Garlich-Miller, J. (12/2016). Retrospective isotopic analysis of walrus tooth dentin shows flexibility in maternal strategies. *Marine Ecology Progress Series*.

*Polo-Silva, C., Galvan-Magana, F., **Newsome, S.D.**, Kim, S.L., Soto-Jimenez, M.F., O'Hara, T.M. (11/2016) 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*.

*Richins, A.E., Lightfoot, D.C., **Newsome, S.D.** (10/2016) Intra- and inter-specific variation in grasshopper foraging strategies in a mixed grassland/shrubland environment in central New Mexico. *Journal of Arid Environments*.

*Vokhshoori, N., Collins, P.W., Etnier, M.A., Rick, T.C., McCarthy, M.D., **Newsome, S.D.** (3/2017) 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*.

Teaching & Advising Experience

Assistant Professor, University of New Mexico

Evolution & Ecology (Biology 203): Fall 2013, Spring 2015, Spring 2017

Elemental Ecology (Biology 402/502): Spring 2014, Fall 2015

Ecology of the Past (Biology 402/502): Fall 2014, Fall 2016

Marine Ecology (Biology 419/519); Spring 2017

Senior Honors Thesis Writing Seminar; Spring 2015

Center for Stable Isotopes Brown Bag Seminar; Fall 2014–2016

Applied Wildlife Ecology Seminar; Fall 2016

UNM Biology Department Committee Participation

Development of Ecology Concentration: 2013

Biology Scholarship Committee: 2013–2014

Undergraduate Honors Thesis Committee: 2013–2016

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

*Emma Elliott Smith – UNM Biology Department (Albuquerque, NM)

*Deborah Boro – UNM Biology Department (Albuquerque, NM)

*Laura Pages – UNM Biology Department (Albuquerque, NM)

Meghan Balk – UNM Biology Department (Albuquerque, NM)

†Matt Baumann – UNM Biology Department (Albuquerque, NM)

†Corrie Bergman – UNM Biology Department (Albuquerque, NM)

Brittney Coe – UNM Biology Department (Albuquerque, NM)

Jennifer Noble – UNM Biology Department (Albuquerque, NM)

†Melissa Pardi – UNM Biology Department (Albuquerque, NM)

Catalina Tome – UNM Biology Department (Albuquerque, NM)

Cyler Conrad – UNM Anthropology Department (Albuquerque, NM)

Clayton Meredith – UNM Anthropology Department (Albuquerque, NM)

Marian Hamilton – UNM Anthropology Department (Albuquerque, NM)

Jon Dombrosky – UNM Anthropology Department (Albuquerque, NM)

†Carl Cloyed – 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)

Organizer and/or Lecturer, Isotope Ecology Short Courses

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

June 2013–2016 – University of Utah (Salt Lake City, UT)

May 2013 – Centro Austral De Interdisciplinario Cientificas (Ushuaia, Argentina)

November 2012 – Universidad de Chile (Santiago, Chile)

March 2012 – Instituto Politecnico Nacional (La Paz, Mexico)

January 2012 – Universidad de Los Lagos (Puerto Montt, Chile)

March 2009 – Universidad de La Plata (La Plata, Argentina)

Co-Lecturer, Isotope Ecology (University of Wyoming, 8/2011–12/2011)

Responsible for designing and teaching a module for a graduate-level course on how to use stable isotopes as a tool to the study the ecology and physiology of animals.

Lecturer, *The Fossil Record* (UC-Santa Cruz, 1/2005–3/2005)

Responsible for designing and teaching an upper-level undergraduate course that combined systematics with paleoecology. Emphasis on phylogeny or major fossil forming groups, fundamental concepts in ecology and evolutionary biology, and methods used to study animal ecology past and present.

Teaching Assistant, UC-Santa Cruz (9/2000–6/2004)

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).