

University of California Merced, Sierra Nevada Research Institute, Yosemite National Park, CA 95389
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CURRENT POSITION DESCRIPTION:**Director, Sierra Nevada Research Institute, Wawona Field Station, Yosemite National Park:**

I am the 1st director of the 1st University of California research facility in Yosemite National Park. SNRI's mission is to foster synergistic links among science, art, education, minority outreach, and natural resource management. In addition to defining, developing, and implementing the vision of this research station, I act as a liaison between UCM and Yosemite National Park.

EDUCATION:

- B.A. 1988 Brown University, Providence, RI. (Biology)
– Advisor: Mark Bertness
- Ph.D. 1995 Oregon State University, Corvallis, OR (Ecology)
– Advisors: Jane Lubchenco and Bruce Menge

APPOINTMENTS:

- 2006-present STATION DIRECTOR
University of California Merced, Sierra Nevada Research Institute, Yosemite National Park.
- 2004-present RESEARCH SCIENTIST
Pacific Ecoinformatics and Computational Ecology (PEaCE) Laboratory, Berkeley CA
- 2005-2008 Alexander VON HUMBOLDT RESEARCH FELLOW
Ecological Networks Laboratory, Darmstadt Technical University, Darmstadt, Germany.
- 1999-2006 RESEARCH SCIENTIST
University of California San Diego, White Mountain Research Station, Bishop, CA
- 1999-2004, 2007-present VISITING SCHOLAR
University of California, Berkeley CA
- 1996 - 1998 NATIONAL SCIENCE FOUNDATION POSTDOCTORAL FELLOW
Department of Integrative Biology, University of California, Berkeley, CA
(advisor: Carla D'Antonio)
- 1995 - 1996 ANDREW MELLON POSTDOCTORAL FELLOW
Oregon State University, Corvallis OR.

GRANTS AND CONTRACTS:

- 1996-1998 NSF Postdoctoral Fellowship for Biol. Sciences Related to the Environment. (\$80,000)
- 1999-2002 NSF DEB: "CRB-Context-Dependent Constraints on Sagebrush-Herb Dynamics in Sierra Nevada Meadows." (\$300,000).
- 2000-2001 USGS Cooperative Agreement: "Data Collection for Ecological Assessment of the Inyo Wilderness Plan" (\$50,000).
- 2001-2002 USDA Forest Service, Contract to write the "Trophic Dynamics Prospectus" and the "Community Dynamics Prospectus" for the Ecosystem Process Conceptual Model that was developed for the Sierra Nevada Adaptive Management strategy. (\$8500).
- 2001-2002 USGS Cooperative Agreement: "Modeling Recreational Impacts to Montane Meadows in the Sierra Nevada" (\$100,000).

- 2002-2005 NSF REU: “Summer Research Opportunities in Environmental Sciences in the Sierra Nevada and White Mountains of California” (\$235,000).
- 2003-2004 CDGG: “Sierra Nevada Mountain Assessment: A collaborative project between California Dept. of Fish and Game and White Mt. Research Station.” (\$80,000)
- 2003 USDA Forest Service – ESICE Cost Share Agreement: “Preliminary experimental assessment of packstock trampling impacts to mountain meadows.” (\$18,600).
- 2003-2006 NSF BDI: “Webs on the Web: Internet Database, Analysis, and Visualization of Ecological Networks.” (\$1,550,000). Lead PI: N.D. Martinez.
- 2005-2008 Alexander von Humboldt Research Fellowship: “Predicting the consequences of species loss in complex ecological networks” (\$50,000)
- 2006-2009 Toyota Foundation: UC Merced - Yosemite Leadership Program (\$300,000)

SYNERGISTIC ACTIVITIES:

- Co-developer of protocols for monitoring ecological community dynamics in the Sierra Nevada bioregion, US Forest Service Region 5. This effort was part of the Sierra Nevada Framework plan to develop a model for integrated monitoring of the entire Sierra Nevada.
- Co-developer of legally defensible monitoring protocols for a court ordered environmental impact assessment of commercial pack-stock use in the John Muir and Ansel Adams Wilderness areas in the Sierra Nevada, California.
- Climate change and the decline of the Yosemite Toad – contract work to create a meadow geodatabase for the entire Sierra Nevada to help disentangle the effects of climate change and other human stressors on the decline of this threatened amphibian species
- Low-impact ecotourism consulting with [Telemarkzone's](#) “Ski for Nature” program to increase the economic viability and sustainability of ecotourism in emerging wilderness tourism markets. Current projects include Kamchatka in eastern Russia and the Arctic archipelago of Svalbard.
- [Swall Institute](#): Demonstration project for “green” residential construction on a tight budget.
- SNRI Scientific Visualization program – creator of a residency program in Yosemite National Park that supports artists to work closely with scientists as well as visitor display staff to creatively communicate science to the public.
- Awaken Café: LLC Board Member of this green business in downtown Oakland, CA. Advisor to the development of a Co-Working environment – a work space that combines elements of an institute, a start-up incubator, and a coffee shop. Café voted “Best Coffee Shop” and “Best New Business” in the East Bay.
- Reviewer: *Nature*, *Science*, *Proceedings of the National Academy of Science*, *Ecology*, *Ecology Letters*, *Conservation Biology*, *Marine Ecology Progress Series*, *Oikos*, *Oecologia*, *Wetlands*, *Archives of Environmental Contamination and Toxicology*, *Cambridge University Press*, *National Science Foundation*

PUBLICATIONS

**ISI top 1% of most highly cited ecology papers published that year
download pdf reprints at: www.wmrs.edu/people/bios/ericberlow/eric_pubs.html

a) Articles in Peer-Reviewed Journals:

Menge, B. A., **Berlow, E. L., Blanchette, C. A., Navarrete, S. A. and Yamada, S. B. 1994: The keystone species concept: Variation in interaction strength in a rocky intertidal habitat. *Ecological Monographs* 64: 249-286.

Berlow, E. L. and Navarrete, S. A. 1997. Spatial and temporal variation in rocky intertidal community organization: lessons from repeating field experiments. *Journal of Experimental Marine Biology and Ecology* 214: 195-229.

Berlow, E. L. 1997. From canalization to contingency: Historical effects in a successional rocky intertidal community. *Ecological Monographs* 67: 435-460.

****Berlow, E. L.** 1999. Strong effects of weak interactions in ecological communities. *Nature* 398: 300-334.

Berlow, E. L., Navarrete, S. A., Briggs, C. J., Power, M. E., and Menge, B. A. 1999. Quantifying variation in the strengths of species interactions. *Ecology* 80: 2206-2224.

Sala, O. E., Chapin, F. S., III, Armesto, J. J., **Berlow, E., Bloomfield, J., Dirzo, R., Huber-Sanwald, E., Huenneke, L. F., Jackson, R. B., Kinzig, A., Leemans, R., Lodge, D. M., Mooney, H. A., Oesterheld, M., Poff, N. L., Sykes, M. T., Walker, B. H., Walker, M. and Wall, D. A. 2000: Global biodiversity scenarios for the year 2100. *Science* 287: 1771-1774.

Berlow, E. L., D'Antonio, C. M. and Reynolds, S. A. 2002: Shrub expansion in montane meadows: the interaction of local-scale disturbance and site aridity. *Ecological Applications*. 12: 1103-1118.

Bauer, K., **Berlow, E. L.**, and D'Antonio, C. M. 2002: Shrub expansion into montane meadows: The relationship between climate and Rothrock sagebrush colonization patterns. *Journal of Range Management*. 55: 620-625.

Williams R. J., Martinez, N. D., **Berlow, E. L.**, Dunne, J. A. and Barabási, A-L. 2002: Two degrees of separation in complex food webs. *Proceedings of the National Academy of Sciences* 99: 12913-12916.

Berlow, E.L., D'Antonio, C. M. and Swartz, H. 2003: Response of herbs to shrub removal across natural and experimental variation in soil moisture. *Ecological Applications*. 13: 1375-1387.

****Berlow, E. L.**, Neutel, A.-M., Cohen, J. E., De Ruiter, P., Ebenman, B., Emmerson, M., Fox, J. W., Jansen, V. A. A., Jones, J. I., Kokkoris, G. D., Logofet, D. O., McKane, A. J., Montoya, J. and Petchey,

O. L. 2004: Interaction strengths in food webs: Issues and opportunities. *Journal of Animal Ecology*. 73: 585-598.

Moore, J.C., **Berlow, E. L., Coleman, D. C., de Ruiter, P. C., Dong, Q., Hastings, A., Collins Johnson, N., McCann, K. S., Melville, K., Morin, P. J., Nadelhoffer, K., Rosemond, A.D., Post, D. M., Sabo, J. L., Scow, K. M., Vanni, M. J. and Wall, D. 2004: Detritus, Trophic Dynamics, and Biodiversity. *Ecology Letters* 7: 584-600.

Brose, U., **E. L. Berlow**, and N. D. Martinez. 2005. Scaling up keystone effects from simple to complex ecological networks. *Ecology Letters*. 8: 1317-1325.

Brose, U., L. Cushing, **E. L. Berlow**, T. Jonsson, C. Banasek-Richter, L.-F. Bersier, J. L. Blanchard, T. Brey, S. R. Carpenter, M.-F. C. Blandenier, J. E. Cohen, H. A. Dawah, T. Dell, F. Edwards, S. Harper-Smith, U. Jacob, R. A. Knapp, M. E. Ledger, J. Memmott, K. Mintenbeck, J. K. Pinnegar, B. C. Rall, T. Rayner, L. Ruess, W. Ulrich, P. Warren, R. J. Williams, G. Woodward, P. Yodzis, and N. D. Martinez. 2005. Body sizes of consumers and their resources. *Ecology* 86: 2545

Navarrete, S.A. and **Berlow, E. L.** 2006. Variable interaction strengths stabilize marine community structure. *Ecology Letters*. 9: 526-536. (Cover Photo)

Brose, U., T. Jonsson, **E. L. Berlow, P. Warren, C. Banasek-Richter, L.-F. Bersier, J. L. Blanchard, T. Brey, S. R. Carpenter, M.-F. Cattin Blandenier, L. Cushing, H. A. Dawah, T. Dell, F. Edwards, S. Harper-Smith, U. Jacob, M. E. Ledger, N. D. Martinez, J. Memmott, K. Mintenbeck, J. K. Pinnegar, B. C. Rall, T. S. Rayner, D. C. Reuman, L. Ruess, W. Ulrich, R. J. Williams, G. Woodward, and J. E. Cohen. 2006. Consumer-resource body-size relationships in natural food webs. *Ecology* 87: 2411-2417.

Darrouzet-Nardi, A., C. M. D'Antonio, and **E.L. Berlow**. 2008. Effects of young invading *Artemisia rothrockii* shrubs on soil moisture, soil nitrogen cycling, and resident herbs. *Journal of Vegetation Science*. 19: 23-30.

Otto, S.B., **E.L. Berlow**, N.E. Rank, J. Smiley, and U. Brose. 2008. The diversity and identity of predators drive interaction strengths and trophic cascades in a montane food web. *Ecology*. 89: 134-144.

Berlow, E.L., U. Brose, N.D. Martinez. 2008. The "Goldilocks factor" in food webs. *Proceedings of the National Academy of Sciences*. 105: 4079-4080.

Brose, U., R.B. Ehnes, B.C. Rall, O. Vucic-Pestic, E.L. Berlow, and S. Scheu. 2008. Foraging theory predicts predator-prey energy fluxes. *J. Animal Ecology*. 77: 1072-1078.

Berlow, E. L., J. A. Dunne, N.D. Martinez, P.B. Stark, R.J. Williams, and U. Brose. 2009. Simple prediction of interaction strengths in complex food webs. *Proceedings of the National Academy of Sciences* 106: 187-191.

Romanuk, T, Z Yun, U. Brose, **E. Berlow**, R. Williams, N. Martinez. 2008. Predicting invasion success in complex ecological networks. *Philosophical Transactions of the Royal Society B*. in press.

b) Book Chapters, Reports, Dissertations, etc.

Berlow, E. L. 1995. Patterns and Dynamics of Context-Dependency in the Marine Rocky Intertidal. Ph.D. Dissertation. Oregon State University, Corvallis, OR. 180 pp.

Berlow, E. L. 1997. Shoreline biology. *Trends in Ecology and Evolution* 12: 329-330.

Reynolds, S.A. and **Berlow, E. L.** 2004. *Artemisia rothrockii* G. rothrock sagebrush. In: Wildland shrubs of the United States and its territories, Ed. Francis, J. K. *USDA Forest Service General Technical Report* IITF-WB-1. International Institute of Tropical Forestry, Río Piedras, PR. www.fs.fed.us/global/iitf/pdf/shrubs/Artemisia%20rothrockii.pdf. 3 pp.

D'Antonio, C.M., **Berlow, E.L.** and Haubensak, K.A. 2004: Invasive exotic plant species in Sierra Nevada ecosystems. In: Proceedings from the Sierra Science Conference 2002: Science for management and conservation. *USDA Forest Service General Technical Report*, PSW Station Albany, Oregon.

Harper-Smith, S, **Berlow, E. L.**, Knapp, R. A., Williams, R. J. and Martinez, N. D. 2005: Communicating through food webs: visualizing the impacts of introduced predators on alpine lake communities in the Sierra Nevada, CA. In: *Dynamic Food Webs- multispecies assemblages, ecosystem development and environmental change*, Eds. De Ruiter, P., Moore, J. C., and Wolters, V. (Amsterdam: Elsevier Press). Ch. 7.5. pp: 407-423.

Brose, U, **Berlow, E. L.**, and Martinez, N. D. 2005: From food webs to ecological networks: linking non-linear trophic interactions with nutrient competition. In: *Dynamic Food Webs- multispecies assemblages, ecosystem development and environmental change*, Eds. De Ruiter, P., Moore, J. C., and Wolters, V. (Amsterdam: Elsevier Press). Ch. 2.1. pp: 24-36.

Sabo, J. L., Beisner, B. E., **Berlow, E. L.**, Cuddington, K., Hastings, A., Koen-Alonso, M., McCann, K., Melian, C., and Moore, J. 2005: Population dynamics and food web structure—the dual role of reductionism and holism in advancing food web science. In: *Dynamic Food Webs- multispecies assemblages, ecosystem development and environmental change*, Eds. De Ruiter, P., Moore, J. C., and Wolters, V. (Amsterdam: Elsevier Press). Ch. 8.2. pp: 437-450.

Memmott, J., D. Alonso, **E.L. Berlow**, A. Dobson, J.A. Dunne, R. Solé, J. Wietz. 2005. Biodiversity loss and ecological network structure. In: *Ecological Networks: Linking Structure to Dynamics in Food Webs*, eds. M. Pascual and J.A. Dunne. Oxford University Press, New York. Ch. 14. pp: 325-347.