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Long-term population and community patterns of benthic macroinvertebrates and fishes in Northern California Mediterranean-climate streams

Vincent H. Resh¹, Leah A. Be[^]che², Justin E. Lawrence¹
Raphael D. Mazor³, Eric P. McElravy¹, Alison P. O'Dowd⁴
Deborah Rudnick⁵, Stephanie M. Carlson¹

¹*Department of Environmental Science, Policy & Management, University of California, Berkeley,*

²*Villeurbanne, France*

³*Southern California Coastal Water Research Project Costa Mesa, USA*

⁴*Department of Environmental Science & Management, Humboldt State University, Arcata, CA, USA*

⁵*Integral Consulting Inc., Seattle, WA, USA*

ABSTRACT

Long-term studies can document temporal patterns in freshwater ecosystems, and this is particularly important in mediterranean-climate (med-climate) regions because of strong interannual variation in precipitation amounts and consequently stream flow. We review long-term studies of populations and communities of benthic macroinvertebrate and fishes from sites throughout the med-climate region of California and develop generalities that may apply broadly to med-climate streams worldwide. Severe drought may result in community shifts, and alter agestructure in both macroinvertebrates and fishes. Within-year seasonal patterns in macroinvertebrate

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