

CURRICULUM VITAE

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Education

Undergraduate: B.A. in Biology, summa cum laude, Smith College, MA
(1970)
Graduate: Ph.D. in Zoology, University of California, Berkeley,
California (1975)

Academic Employment

1975-present Assistant Professor, Associate Professor, and Professor,
Department of Ecology, Evolution and Marine Biology,
University of California, Santa Barbara

Selected Recent Professional Activity and University Service

Co-PI and Member of Moorea Coral Reef LTER project; member of Executive Committee. Participant in MCR LTER investigations of ecological structure and function of coral reef communities; <http://mcr.lternet.edu/>
Co-PI and Member of Santa Barbara Coastal LTER project; member of Executive Committee. Participant in SB LTER investigations of trophic structure and interactions on California rocky reefs; <http://sbc.lternet.edu/>
Co-organizer, Coral Reef Environmental Observatory Network (CREON; www.coralreefeon.org)
Vice-chair, Department of Ecology, Evolution and Marine Biology, UC Santa Barbara, 2005 - present
Chair, UCOP Select Committee of Decommissioning of Offshore Oil and Gas Production Facilities (report url: http://www.ucop.edu/research/ucmc_decommissioning/index.html)
Faculty Advisor, Santa Cruz Island Reserve, UC Natural Reserve System, 1981-present

Member, Executive Committee, University of California Toxic Substances
Research and Teaching Program
Member, UCSB Chancellor's Outreach Advisory Board and Chair, Faculty K-12
Outreach Grants Committee
Panel Member, Biological Oceanography, National Science Foundation
Member, Editorial Board, *Ecology* and *Ecological Monographs* (1988-1992)
Member, University of California White Mountain Research Station Advisory
Committee (1988-1999, Chair 1998-1999)

Courses Taught at University of California

Principles of Ecology (EEMB 120)
Laboratory in Ecology (EEMB 120AL, BL)
Topics in Population Biology (EEMB 595P)
Seminar in Coastal Toxicology (EEMB 595ET)

Publications

- Schmitt, R.J. and S.J. Holbrook. 2007. The scale and cause of spatial heterogeneity in the strength of temporal density dependence. *Ecology*, in press.
- Schmitt, R.J. and S.J. Holbrook. 2007. Predicting the magnitude of temporal variation in young-of-year class strength of surfperch (Teleostei: Embiotocidae). *The Raffles Bulletin of Zoology* Supplement No. 14: 155-160.
- Brooks, A.J., S.J. Holbrook and R.J. Schmitt. 2007. Patterns of microhabitat use by fishes in the patch-forming coral *Porites rus*. *The Raffles Bulletin of Zoology* Supplement No. 14: 227-236.
- Stewart, H.L., S.J. Holbrook, R.J. Schmitt and A.J. Brooks. 2006. Symbiotic crabs maintain coral health by clearing sediments. *Coral Reefs* 25:609-615.
- Holbrook, S.J., A.J. Brooks and R.J. Schmitt. 2006. Relationships between live coral cover and reef fishes: implications for predicting effects of environmental disturbances. *Proceedings of the 10th International Coral Reef Symposium* 241-249.
- Schmitt, R.J. and S.J. Holbrook. 2006. Developmental delays, recruitment storage and adult attrition rates in local populations of a tropical damselfish. *Proceedings of the 10th International Coral Reef Symposium* 232-240.
- Holbrook, S.J. and R.J. Schmitt. 2005. Growth, reproduction and survival of a tropical sea anemone (Actiniaria): benefits of hosting anemonefish. *Coral Reefs* 24:67-73.
- Holbrook, S.J. and R. J. Schmitt. 2004. Population dynamics of a damselfish: effects of a competitor that also is an indirect mutualist. *Ecology* 85:979-985.

- Bull, J.S., D.C. Reed and S.J. Holbrook. 2004. An experimental evaluation of different methods of restoring *Phyllospadix torreyi* (Surfgrass). *Restoration Ecology* 12:70-79.
- Bernardi, G., S.J. Holbrook, R.J. Schmitt and N.L. Crane. 2003. Genetic evidence for two distinct clades in a French Polynesian population of the coral reef three-spot damselfish *Dascyllus trimaculatus*. *Marine Biology* 143:485-490.
- Schmitt, R.J. and S.J. Holbrook. 2003. Mutualism can mediate competition and promote coexistence. *Ecology Letters* 6:898-902.
- Holbrook, S.J. and R. J. Schmitt. 2003. Spatial and temporal variation in mortality of newly settled damselfish: patterns, causes and co-variation with settlement. *Oecologia* 135:532-541.
- Holbrook, S.J., A. J. Brooks and R.J. Schmitt. 2002. Variation in structural attributes of patch-forming corals and patterns of abundance of associated fishes. *Marine and Freshwater Research* 53:1045-1053.
- Holbrook, S.J. and R.J. Schmitt. 2002. Competition for shelter space causes density-dependent predation mortality in damselfishes. *Ecology* 83:2855-2868.
- Osenberg, C.W., C.M. St. Mary, R.J. Schmitt, S.J. Holbrook, P. Chesson and B. Byrne. 2002. Rethinking ecological inference: density-dependence in reef fishes. *Ecology Letters* 5:715-721.
- Bernardi, G., S.J. Holbrook, R.J. Schmitt, N.L. Crane and E. DeMartini. 2002. Species boundaries, populations, and colour morphs in the coral reef three-spot damselfish (*Dascyllus trimaculatus*) species complex. *Proceedings of the Royal Society of London B* 269:599-605.
- Holbrook, S.J., A.J. Brooks and R.J. Schmitt. 2002. Predictability of fish assemblages on coral patch reefs. *Marine and Freshwater Research* 53:181-188.
- Brooks, A.J., R.J. Schmitt and S.J. Holbrook. 2002. Declines in regional fish populations: have species responded similarly to environmental change? *Marine and Freshwater Research* 53:189-198.
- Schmitt, R.J. and S.J. Holbrook. 2002. Spatial variation in concurrent settlement of three damselfishes: Relationships with near-field current flow. *Oecologia* 131:391-401.
- Schmitt, R.J. and S.J. Holbrook. 2002. Correlates of spatial variation in settlement of two tropical damselfishes. *Marine and Freshwater Research* 53:329-337.
- Holbrook, S.J., D.C. Reed and J.S. Bull. 2002. Survival experiments with outplanted seedlings of surfgrass (*Phyllospadix torreyi*) to enhance establishment on artificial structures. *ICES Journal of Marine Science* 59S:349-354.
- Bolker, B., C. St. Mary, C.W. Osenberg, R.J. Schmitt and S.J. Holbrook. 2002. Management at a different scale: marine ornamentals and local processes. *Bulletin of Marine Science* 70:733-748.

- Bernardi, G., S.J. Holbrook and R.J. Schmitt. 2001. Gene flow at three spatial scales in a coral reef fish, the three-spot damselfish, *Dascyllus trimaculatus*. *Marine Biology* 138:457-465.
- Schmitt, R.J. and S.J. Holbrook. 2000. Habitat-limited recruitment of coral reef damselfish. *Ecology* 81:3479-3494.
- Holbrook, S.J., G.E. Forrester and R.J. Schmitt. 2000. Spatial patterns in abundance of a damselfish reflect availability of suitable habitat. *Oecologia* 122:109-120.
- Holbrook, S.J., D.C. Reed, K. Hansen and C.A. Blanchette. 2000. Spatial and temporal patterns of predation on seeds of surfgrass, *Phyllospadix torreyi*. *Marine Biology* 136:739-747.
- Holbrook, S.J., D.C. Reed and J.S. Bull. 1999. Methods for enhancing habitat value of artificial structures by establishing surfgrass (*Phyllospadix torreyi*). Pp. 582-589 in G. Relini, G. Ferra and E. Massaro (eds.) *Proceedings of Seventh International Conference on Artificial Reefs and Related Aquatic Habitats* (7th CARAH), San Remo, Italy.
- Schmitt, R.J., S.J. Holbrook and C.W. Osenberg. 1999. Quantifying the effects of multiple processes on local abundance: A cohort approach for open populations. *Ecology Letters* 2:294-303.
- Blanchette, C.A., S. Worcester, D. Reed and S.J. Holbrook. 1999. Algal morphology, flow and spatially variable recruitment of surfgrass, *Phyllospadix torreyi*. *Marine Ecology Progress Series* 184:119-128.
- Schmitt, R.J. and S.J. Holbrook. 1999. Settlement and recruitment of three damselfish species: larval delivery and competition for shelter space. *Oecologia* 118:76-86.
- Schmitt, R.J. and S.J. Holbrook. 1999. Mortality of juvenile damselfish: implications for assessing processes that determine abundance. *Ecology* 80:35-50.
- Schmitt, R.J. and S.J. Holbrook. 1999. Temporal patterns of settlement of three species of damselfish of the genus *Dascyllus* (Pomacentridae) in the coral reefs of French Polynesia. Pp. 537-551 in B. Seret and J.-Y. Sire (eds.) *Proceedings 5th Indo-Pacific Fish Conference, Noumea, 1997*. Paris, Soc. Fr. Ichtyol.
- Holbrook, S.J. and R.J. Schmitt. 1999. *In Situ* Nocturnal Observations of Reef Fishes Using Infrared Video. Pp. 805-812 in B. Seret and J.-Y. Sire (eds.) *Proceedings 5th Indo-Pacific Fish Conference, Noumea, 1997*. Paris, Soc. Fr. Ichtyol.
- Reed, D.C., S.J. Holbrook, E. Solomon and M. Anghera. 1998. Studies on germination and root development in the surfgrass *Phyllospadix torreyi*: implications for habitat restoration. *Aquatic Botany* 62:71-80.
- Holbrook, S.J. and R.J. Schmitt. 1998. Have field experiments aided in the understanding of abundance and dynamics of temperate reef fishes? Pp. 152-169 in W.J. Resetarits and J. Bernado (eds.) *Experimental Ecology: Issues and Perspectives*. Oxford University Press, New York.

- Holbrook, S.J., R.J. Schmitt and J.A. Stephens, Jr. 1997. Changes in an assemblage of temperate reef fishes associated with a climate shift. *Ecological Applications* 7:1299-1310.
- Holbrook, S.J. and R.J. Schmitt. 1997. Settlement patterns and process in a coral reef damselfish: *In situ* nocturnal observations using infrared video. *Proceedings of the 8th International Coral Reef Symposium* 2:1143-1148.
- Osenberg, C.W., R.J. Schmitt, S.J. Holbrook, K.E. Abu-Saba and A.R. Flegal. 1996. Detection of environmental impacts: natural variability, effect size, and power analysis. Pp. 83-108 in R.J. Schmitt. and C.W. Osenberg (eds.) *Detecting Ecological Impacts: Concepts and Applications in Coastal Habitats*. Academic Press.
- Canestro, D., P.T. Raimondi, D.C. Reed, R.J. Schmitt and S.J. Holbrook. 1996. A Study of Methods and Techniques for Detecting Ecological Impacts. Pp. 53-67 in *Methods and Techniques of Underwater Research, Proceedings of the American Academy of Underwater Scientists Symposium 1996*. AAUS, Nahant, MA.
- Steichen, D.J., Jr., S.J. Holbrook and C.W. Osenberg. 1996. Distribution and abundance of benthic and demersal macrofauna within a natural hydrocarbon seep. *Marine Ecology Progress Series* 138:71-82.
- Schmitt, R.J. and S.J. Holbrook. 1996. Local-scale patterns of larval settlement in a planktivorous damselfish - do they predict recruitment? *Marine and Freshwater Research* 47:449-463.
- Holbrook, S.J. and R. J. Schmitt. 1996. On the structure and dynamics of temperate reef fish assemblages: are resources tracked? Pp. 19-48 in M.L. Cody and J. A. Smallwood (eds.) *Long-term Studies of Vertebrate Communities*. Academic Press.
- Holbrook, S.J. and R.J. Schmitt. 1995. Compensation in resource use by foragers released from interspecific competition. *Journal of Experimental Marine Biology and Ecology* 185:219-233.
- Holbrook, S.J., M.J. Kingsford, R.J. Schmitt and J.S. Stephens, Jr. 1994. Spatial and temporal patterns in assemblages of temperate reef fish. *American Zoologist* 34:463-475.
- Osenberg, C.W., R.J. Schmitt, S.J. Holbrook, K.E. Abu-Saba and A.R. Flegal. 1994. Detection of environmental impacts: power analysis and spatial inference. *Ecological Applications* 4:16-30.
- Holbrook, S.J. 1993. The effect of food density and dispersion on patch selection by foraging black surfperch. Pp. 485-493 in F.E. Hochberg (ed.) *Recent Advances in Research on the California Islands*. Santa Barbara Museum of Natural History, Santa Barbara, CA. 661 pp.
- Holbrook, S.J., S.L. Swarbrick, R.J. Schmitt, and R.F. Ambrose. 1993. Reef architecture and reef fish: Correlates of population densities with attributes of subtidal rocky environments. Pp. 99-106 in C.N. Battershill, D.R. Schiel, G.P. Jones, R.G. Creese, and A.B. MacDiamid (eds.) *Proceedings of the Second International Temperate Reef Ecology Symposium*. National Institute of Water and Atmospheric Research, New Zealand Oceanographic Institute.

- Osenberg, C.W., S.J. Holbrook, and R.J. Schmitt. 1992. Implications for the design of environmental assessment studies. Pp. 75-89 in P.M. Grifman and S. E. Yoder (eds.) *Perspectives on the Marine Environment, Proceedings from a Symposium on the Marine Environment of Southern California*. USC Sea Grant, Los Angeles, CA.
- Osenberg, C.W., R.J. Schmitt, S.J. Holbrook, and D.J. Canestro. 1992. Spatial scale of ecological effects associated with an open coast discharge of produced water. Pp. 387-402 in J.P. Ray and F.R. Engelhardt (eds.) *Produced Water: Technological/Environmental Issues and Solutions*. Plenum Publishing Co., New York, NY.
- Holbrook, S.J. and R.J. Schmitt. 1992. Causes and consequences of dietary specialization in surfperches: patch choice and intraspecific competition. *Ecology* 73:402-412.
- Holbrook, S.J. 1992. Review of *Ecology of Coral Reef Fish* by P.F. Sale. *Ecology* 73:1934-35.
- Holbrook, S.J., R.J. Schmitt, and R.F. Ambrose. 1990. Biogenic habitat structure and characteristics of temperate reef fish assemblages. *Australian Journal of Ecology* 15:489-503.
- Schmitt, R.J. and S.J. Holbrook. 1990. Contrasting effects of giant kelp on dynamics of surfperch populations. *Oecologia* 84:419-429.
- Holbrook, S.J., M.H. Carr, R.J. Schmitt and J.A. Coyer. 1990. The effect of giant kelp on local abundance of demersal fishes: the importance of ontogenetic resource requirements. *Bulletin of Marine Science* 47:104-114.
- Schmitt, R.J. and S.J. Holbrook. 1990. Population responses of surfperch released from competition. *Ecology* 71:1653-1665.
- Ebeling, A.W., S.J. Holbrook and R.J. Schmitt. 1990. Temporally concordant structure of a fish assemblage: bound or determined? *American Naturalist* 135:63-73.
- Holbrook, S.J. and R.J. Schmitt. 1989. Resource overlap, prey dynamics and the strength of competition. *Ecology* 70:1943-1953.
- Holbrook, S.J. and R.J. Schmitt. 1988. Effects of predation risk on foraging behavior: mechanisms altering patch choice. *Journal of Experimental Marine Biology and Ecology* 121:151-163.
- Holbrook, S.J. and R.J. Schmitt. 1988. The combined effects of predation risk and food reward on patch selection. *Ecology* 69:125-134.
- Holbrook, S.J. and R.J. Schmitt. 1986. Food acquisition by competing surfperch on a patchy environmental gradient. *Environmental Biology of Fishes* 16:135-146.
- [Reprinted as a book chapter in C.A. Simenstad and G.M. Cailliet (eds.), 1986. *Contemporary Studies on Fish Feeding*. D.W. Junk Publishers, Boston.]
- Schmitt, R.J. and S.J. Holbrook. 1986. Seasonally fluctuating resources and temporal variability of interspecific competition. *Oecologia* 69:1-11.
- Holbrook, S.J., R.J. Schmitt and J.A. Coyer. 1985. Size-related dietary patterns of sympatric adult surfperch (Embiotocidae). *Copeia* 1985:986-994.
- Schmitt, R.J. and S.J. Holbrook. 1985. Patch selection by juvenile black surfperch (Embiotocidae) under variable risk: interactive influence of food

- quality and structural complexity. *Journal of Experimental Marine Biology and Ecology* 85:269-285.
- Holbrook, S.J. and R.J. Schmitt. 1984. Experimental analyses of patch selection by foraging black surfperch (*Embiotoca jacksoni* Agassiz). *Journal of Experimental Marine Biology and Ecology* 79:39-64.
- Schmitt, R.J. and S.J. Holbrook. 1984. Gape-limitation, foraging tactics and prey size selectivity of two microcarnivorous species of fish. *Oecologia* 63:6-12.
- Schmitt, R.J. and S.J. Holbrook. 1984. Ontogeny of prey selection by black surfperch, *Embiotoca jacksoni* (Pisces: Embiotocidae): the roles of fish morphology, foraging behavior, and patch selection. *Marine Ecology Progress Series* 18:225-239.
- Holbrook, S.J. 1983. Paleoecology of Grasshopper Pueblo, Arizona. *National Geographic Society Research Reports* 15:387-402.
- Holbrook, S.J. 1982. Ecological inferences from mandibular morphology in *Peromyscus maniculatus*. *Journal of Mammalogy* 63:399-408.
- Holbrook, S.J. 1982. The prehistoric local environment of Grasshopper Pueblo, Arizona. *Journal of Field Archaeology* 9:207-215.
- Holbrook, S.J. 1982. Prehistoric environmental reconstruction by mammalian microfaunal analysis, Grasshopper Pueblo, Arizona. Pp. 73-86 in W.A. Longacre, S.J. Holbrook and M.W. Graves (eds.) *Multidisciplinary Research at Grasshopper Pueblo, Arizona*. Tucson, University of Arizona Press. 138 pp.
- Holbrook, S.J. and M.W. Graves. 1982. Modern environment of the Grasshopper Region. Pp. 5-11 in W.A. Longacre, S.J. Holbrook and M.W. Graves (eds.) *Multidisciplinary Research at Grasshopper Pueblo, Arizona*. Tucson, University of Arizona Press. 138 pp.
- Graves, M.W., S.J. Holbrook and W.A. Longacre. 1982. Aggregation and abandonment at Grasshopper Pueblo. *Journal of Field Archaeology* 9:193-206.
- Graves, M.W., S.J. Holbrook and W.A. Longacre. 1982. Aggregation and abandonment at Grasshopper Pueblo: Evolutionary trends in the late prehistory of East-central Arizona. Pp. 110-121 in W.A. Longacre, S.J. Holbrook and M.W. Graves (eds.) *Multidisciplinary Research at Grasshopper Pueblo, Arizona*. Tucson, University of Arizona Press. 138 pp.
- Longacre, W.A., S.J. Holbrook and M.W. Graves (eds.). 1982. *Multidisciplinary Research at Grasshopper Pueblo, Arizona*. Tucson, University of Arizona Press. 138 pp.
- Holbrook, S.J. 1980. Species diversity patterns in some present and prehistoric rodent communities. *Oecologia* 44:355-367.
- Holbrook, S.J. 1979. Habitat utilization, competitive interactions, and coexistence of three species of rodents in east-central Arizona. *Ecology* 60:758-769.
- Holbrook, S.J. 1979. Vegetational affinities, arboreal activity, and coexistence of three species of rodents. *Journal of Mammalogy* 60:528-542.

- Mackey, J.C. and S.J. Holbrook. 1978. Environmental reconstruction and the explanation of the abandonment of the Largo-Gallina. *Journal of Field Archaeology* 5:29-49.
- Holbrook, S.J. 1978. Habitat relationships and coexistence of four sympatric species of *Peromyscus* in northwestern New Mexico. *Journal of Mammalogy* 59:18-26.
- Holbrook, S.J. 1977. Rodent faunal turnover and prehistoric community stability in northwestern New Mexico. *American Naturalist* 111:1195-1208.
- Holbrook, S.J. 1977. Review of *Tree Rings and Climate* by H.C. Fritts. *Quarterly Review of Biology* 52:428-429.
- Holbrook, S.J. 1976. Prehistoric environmental change in northern New Mexico: evidence from a Gallina Phase archaeological site. *The Kiva* 41:309-317.
- Holbrook, S.J. 1975. Prehistoric Paleoecology of Northwestern New Mexico. Ph.D. dissertation, University of California, Berkeley. 212 pp.
- Hester, T.R., T.C. Hill, D. Gifford and S.J. Holbrook. 1975. Archaeological salvage at Site 41 ZV 152, Rio Grande Plain of Texas. *Texas Journal of Science* 26:223-228.
- Holbrook, S.J. 1973. Mammalian remains from Bamert Cave, Amador Co., California. In R.F. Heizer and T.R. Hester (eds.) *The Archaeology of Bamert Cave, Amador Co., California*. Berkeley, University of California Archaeological Research Facility.