Brenton T. Spies

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Professional Summary

I am a conservation ecologist specializing in endangered species management, habitat restoration, and coastal ecosystem recovery in California. My work focuses on applying science-based approaches to inform the protection and management of coastal wetlands, estuaries, and nearshore habitats facing increasing environmental pressures. I integrate extensive fieldwork, ecological modeling, species recovery planning, and inter-agency partnerships to address the complex challenges threatening these unique and highly dynamic ecosystems.

Brenton Spies and colleagues collecting gobies in Lagunitas Creek, Marin County, CA

A significant component of my research centers on the endangered tidewater goby, a habitat-restricted fish species native to California's coastal lagoons. Over the past decade, I have conducted extensive field studies across more than 200 coastal wetlands statewide, generating one of the most comprehensive population and habitat

datasets for tidewater gobies. My research incorporates metapopulation modeling to better understand population connectivity, persistence, and habitat suitability at both local and regional scales. This work directly supports federal recovery planning under the Endangered Species Act, informing site-specific management actions, restoration design, and long-term monitoring strategies.

Southern tidewater goby (Eucyclogobius kristinae). Photo by Brenton Spies

Beyond my work with tidewater gobies, my broader research program addresses how extreme disturbance events shape the structure and function of coastal ecosystems. I have participated in disaster response and recovery efforts following multiple large-scale events impacting endangered species and their habitats, including extensive drought periods, the Woolsey, Thomas, and Palisades wildfires, the Refugio Oil Spill, and El Niño-driven flooding events. These efforts have involved conducting habitat impact assessments, post-disaster ecological monitoring, and developing endangered species recovery strategies following acute habitat disturbances.

Tidewater Goby Rescue Team: January 17th rescue efforts in Topanga Canyon. Photo by Mathew Benton

Throughout my career, I have worked closely with a wide range of local, state, and federal partners to integrate applied research into conservation practice. These partners include the U.S. Fish and Wildlife Service, NOAA Fisheries, National Park Service, California State Parks, Resource Conservation District of the Santa Monica Mountains (RCDSMM), Department of Defense, and numerous regional resource agencies and non-profit organizations. I also collaborate extensively with public aquariums and zoos to support endangered species care, captive housing, educational outreach, and public engagement surrounding coastal species recovery.

ESRM students practicing aquatic surveying and field monitoring techniques in Calleguas Creek, which flows through CSUCI's Campus Park. Photo by ESRM student Denise Aguilar.

In addition to my research, I am dedicated to mentoring undergraduate students and providing experiential training opportunities that emphasize applied conservation science and field-based learning. As a faculty member at California State University Channel Islands, I work closely with students through year-long capstone research projects, service-learning courses, and field-based training programs, many of which are directly embedded within ongoing endangered species and habitat management projects. My students routinely contribute to agency-led monitoring efforts, restoration planning, and applied ecological studies in real-world settings, helping to prepare the next generation of conservation professionals.

My work seeks to bridge applied research, resource management, education, and public engagement—building collaborative, science-driven solutions to support the recovery of endangered species, the restoration of sensitive habitats, and the long-term resilience of California's coastal ecosystems.

SELECTED PUBLICATIONS, REPORTS & THESES

Jacobs DK, Kinziger A, Abrecht M, McCraney TW, Hà BA, **Spies BT**, Heath-Heckman E, Escalona M, Shaffer B (2024). Reference genome for the endangered, genetically subdivided northern tidewater goby, *Eucyclogobius newberryi*. Journal of Heredity. https://doi.org/10.1093/jhered/esae053

Spies BT (2022). Conservation and Metapopulation Management of the Federally Endangered Tidewater Gobies (Genus *Eucyclogobius*). PhD Dissertation. Department of Ecology and Evolutionary Biology, University of California, Los Angeles. LINK

Swift CC, **Spies BT**, Ellingson RA, Jacobs DK (2016) A new species of the bay goby genus *Eucyclogobius*, endemic to Southern California: evolution, conservation, and decline. PLoS ONE 11(7): e0158543. doi:10.1371/journal.pone.0158543

Spies BT and Steele MA (2016). Effects of temperature and latitude on larval traits of two estuarine fishes in differing estuary types. Marine Ecology Progress Series 544:243-255. doi:10.3354/meps11552

Spies BT, Tarango BC, Steele MA (2014). Larval duration, settlement, and larval growth rates of the endangered tidewater goby (*Eucyclogobius newberryi*) and the arrow goby (*Clevelandia ios*) (Pisces, Teleostei). Bulletin of Southern California Academy of Sciences 113(3):165-175. doi:http://dx.doi.org/10.3160/0038-3872-113.3.165

Spies BT (2014). The effects of temperature and latitude on larval traits of the endangered tidewater goby (*Eucyclogobius newberryi*) and its sister species the arrow goby (*Clevelandia ios*). MS Thesis. Department of Biology, California State University, Northridge. LINK

Hà BA, Buckner JC, Sim JY, Dolby GA, Holland D, Swift CC, **Spies BT**, Jacobs DK. Hydrologic Control of Metapopulation Dispersal in the Endangered Northern Tidewater Goby (*Eucyclogobius newberryi*) on the California Coast. (*In Prep*)

Spies BT, Boughton DA, and Jacobs DK. Modeling metapopulation viability and persistence of the endangered tidewater gobies (genus *Eucyclogobius*) on the California coast. (*In Prep)*

Spies BT, Swift CC, Stofka DE, Dellith C, Pawlawk CC, and Jacobs DK. Rangewide metapopulation occupancy and site characterization records of the endangered tidewater gobies (Genus *Eucyclogobius*) on the California coast. (*In Prep)*

Spies BT and Jacobs DK, Metapopulation Status of the Tidewater Gobies: A Federally Endangered California Coastal Endemic Fish Genus (*Eucyclogobius*). (*In Prep*)

RECENT PRESS COVERAGE

- Los Angeles Times – Hundreds of tiny endangered fish from Palisades fire – in the nick of time (LINK)
- Spectrum News – Tidewater Gobies Face Challenges after the Palisades fire (LINK)
- ABC7 Los Angeles – Aquarium of the Pacific rescues and rehabilitates hundreds of tidewater goby fish from Palisades fire (LINK)
- Heal the Bay – Saving Tidewater Gobies: Rescue After Palisades Fire (LINK)
- Channel Magazine, CSU Channel Islands – Team tidewater goby aids in return of endangered species (LINK)

- Channel Magazine, CSU Channel Islands – Environmental Science & Resource Management students will study environmental health and human impacts on local open space. (**LINK**)