

Notes from the Editor

October 8, 2026

The summer issue is admittedly a little late this year...but it still feels like summer in California right now, so maybe that counts? The issue contains six excellent articles covering a variety of species, but definitely fish-heavy with four of the six articles focused on marine or anadromous fish.

The first article—a research note collaboration between researchers at the Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE), NOAA's Southwest Fisheries Science Center, and the Pfleger Institute—evaluates methods for determining the age of smalleye Pacific opah (*Lampris incognitus*), a commercially valuable pelagic fish in the Eastern North Pacific of which the life history and growth remain poorly understood. The authors compared growth rings in dorsal-fin rays, vertebrae, and otoliths from six fish and found that whole, stained vertebrae provided the most precise and consistent age estimates, while the second dorsal-fin ray offered a practical, less invasive alternative when preserving fish quality and marketability is important. Estimated ages ranged from 4 to 7 years, assuming annual growth-ring formation, although further research is needed to validate age estimates using larger sample sizes and additional readers. This research establishes a foundation for more reliable age and growth research on smalleye Pacific opah, helping address critical biological knowledge gaps needed to assess fish populations, understand fishery productivity, and support effective, coordinated management of opah fisheries in the United States and Mexico.

The second study is a monograph, a relatively rare and arguably somewhat under-used type of manuscript, that evaluated 607 transportation facilities in Contra Costa County to understand which structural and environmental factors influence bat use of bridges and culverts. Using GIS-based habitat modeling, field surveys, and structural assessments, the analysis identified 334 facilities within suitable habitat and confirmed bat use at 12 sites, all of which shared specific design features such as reinforced-concrete girder systems that create angular recessed voids conducive to roosting. Confirmed bat roosts were highly clustered along riparian corridors, and nearly all were directly over or adjacent to creek systems, highlighting the importance of hydrologic connectivity and surrounding landscape composition. The study underscores that both structural form and environmental context jointly determine bat occupancy and provides guidance for transportation planners to integrate roost-supportive design features and consider bat conservation during facility maintenance, retrofit, and replacement.

Next is a full research article collaboration between researchers at Cal Poly SLO, Cal Poly Humboldt, and the Sequoia Riverlands Trust that developed and evaluated a standardized, non-invasive method for determining the presence of giant kangaroo rats (*Dipodomys ingens*), an important ecosystem engineer in central California that is listed as endangered under both the California and federal Endangered Species Acts. The authors assessed 18 indicators of animal activity at 355 site-year combinations across four years and used live-trapping results to develop a machine-learning model that predicted species presence with 95% accuracy. Dust baths, seed-storage pits (pit caches), and large burrow mounds were the strongest predictors of occupancy. This research provides wildlife managers with a reliable, potentially less expensive alternative to live trapping for monitoring this endangered species, supporting habitat assessments, identifying occupied areas, tracking population recovery, and prioritizing conservation actions across its fragmented range. By converting field observations into a standardized, repeatable, and quantitative assessment, this approach also offers a framework for improving non-invasive monitoring of other species that leave distinctive signs of activity.

The fourth article, another full research study, involved UC Berkeley, multiple Marine Region offices of CDFW, and the Pfleger Institute and provides the first comprehensive, histology-based assessment of sexual maturity in California's white seabass (*Atractoscion nobilis*) and reveals a substantial mismatch between current management regulations and the species' reproductive biology. By examining 569 fish statewide, the authors found that female seabass reach 50% maturity at about 895 mm total length—far larger than the long-standing minimum legal size of 711 mm—meaning less than 1% of legally harvested females have likely spawned before capture, while most males mature below the current limit. These findings indicate that current size regulations do not adequately protect the female spawning population, potentially increasing the risk of recruitment overfishing. The updated maturity estimates offer significantly improved biological inputs for stock assessments and highlight the need to reevaluate size-based management strategies to better sustain white seabass populations in California waters.

Next is a research note by two researchers from the U.S. Fish and Wildlife Service's Pacific Southwest Region which examined *Ceratonova shasta* infections in Trinity River Chinook salmon (*Oncorhynchus tshawytscha*) smolts over three decades. They found that although infection levels within the Trinity River itself are generally low and often asymptomatic, exposure increases sharply once smolts enter the lower Klamath River, where parasite densities frequently reach disease-causing thresholds. Using histology and qPCR, the authors show that infection prevalence in hatchery-origin smolts captured in the Klamath estuary has ranged as high as 85%, with many fish exhibiting parasite loads associated with mortality. The authors document a negative correlation between smolt infection prevalence and adult returns two years later. These findings highlight *C. shasta* as an additional, significant factor contributing to low recruitment of Trinity River Chinook salmon, emphasizing the need for continued monitoring and for basin managers to consider disease risk—alongside other stressors such as altered flows, warm temperatures, and ocean conditions—when evaluating drivers of salmon population declines.

The final article summarizes an experimental study from researchers at CDFW and Cal Poly Humboldt which tested how well young-of-the-year steelhead trout (*Oncorhynchus mykiss*) could jump over vertical barriers resembling those found in natural and restoration-built structures such as beaver dam analogs. By conducting 28 controlled trials with barriers ranging from 24–44 cm and fish spanning 44–152 mm in length, the researchers found that passage success declined with barrier height but increased strongly with fish size, with trout able to leap up to 6.6 times their body length. Structural complexity at the spill point (e.g., twigs) did not reduce passage ability, but crowding increased the likelihood of passage, indicating a behavioral component related to motivation. Although consistent patterns emerged, substantial unexplained trial-to-trial variation highlights the difficulty of interpreting results from studies with few replicates. The findings have practical significance for habitat restoration and regulatory design; many juvenile steelhead can pass barriers within state and federal height guidelines, supporting the use of beaver dam analogs and similar structures when designed with passage opportunities in mind.

I also have two new editors to introduce this issue. Alyssa Obester is a Senior Environmental Scientist (Specialist) with the Water Program in CDFW's North Central Region (Region 2). In her current role, Alyssa is focused on water resources planning, permitting, and water rights. Previously, she worked in the Instream Flow Program in CDFW's Water Branch, at the UC Davis Center for Watershed Sciences as a Research Specialist, and as a Project Manager at South Coast Habitat Restoration. Alyssa holds a master's degree from the Bren School of Environmental Science and Management at UC Santa Barbara and a bachelor's from UC Davis.

Dr. Asia Murphy has spent the past 15 years using quantitative methods to understand what factors

influence species' distribution, abundance, population dynamics, and interactions. She received her bachelor's of science degree at North Carolina State University. After being awarded an NSF graduate research fellowship, she conducted her master's at Virginia Tech, studying wildlife in Madagascar. Her PhD at Penn State focused on interactions between white-tailed deer fawns and carnivores. She conducted postdoctoral research at UC Santa Cruz as a UC Presidential Postdoctoral Fellow on mesopredator interactions across North America, pollinator distributions in urban greenspaces at the University of Arizona, and factors affecting mule deer density at San Diego State. She is now a quantitative ecologist within the Wildlife Branch's Science Support Unit, aiding in departmental analyses of game and nongame species.

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Happy summer (really fall)!

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