



Kevin Lafferty/USGS

Restoring River Predators to Fight Disease

The Senegal River in West Africa harbors a seemingly harmless species of snail. Normally, river prawns spawned in an estuary farther south migrate upstream and feed on these snails. However, a dam finished in 1986 blocked the saltwater flow from the estuary, creating a barricade between the prawns and their prey. The snails thrived—and so did a disease called schistosomiasis.

Kevin Lafferty was part of a team of researchers that showed restoring prawns to the river could control schistosomiasis in local villages. The parasite that causes the disease had infected the river snails, which shed its larvae into the water. By treating the local people and reintroducing predatory river prawns to control the snail population and prevent re-infection, the researchers reduced schistosomiasis within the Senegal River Basin, reports UC Santa Barbara's *The Current*. The researchers' results were published in *PNAS*. Lafferty's research with USGS explores parasites' impact on their ecosystems.

<http://www.werc.usgs.gov/lafferty>

<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5330>

<http://www.news.ucsb.edu/2015/015770/ecological-restoration-battle-parasites>

DATABASE

Schwarzbach SE, JT Ackerman, CA Eagles-Smith, ML Casazza, JL Yee, AC Heyvaert, DP Krabbenhoft, TVD Bui, JY Takekawa. 2015. **Historical methyl mercury in San Francisco Bay**: U.S. Geological Survey: Sacramento, CA. doi:10.5066/F78P5XKP
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5321>

NEW JOURNAL ARTICLES

Miles, AK, DH Van Vuren, DC Tsao, JL Yee. 2015. **Experimental enhancement of pickleweed, Suisun Bay, California**. California Fish and Game 101(2):87-100, 2015.
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5329>

EVENTS

September 17-18, 2015 (Oakland, CA)
Laura Valoppi and others will speak at the **12th Biennial State of the San Francisco Estuary Conference**.
<http://www.werc.usgs.gov/Event.aspx?ID=221>

October 22, 2015 (Mountain View, CA)
The **Biennial South Bay Science Symposium** will be held at the Computer History Museum in Mountain View, CA.
<http://www.werc.usgs.gov/Event.aspx?ID=220>

November 4-8, 2015 (Sacramento, CA)
WERC researchers will present their work at the **2015 Raptor Research Foundation Conference**, hosted by the Golden Gate Raptor Observatory.

November 16-20, 2015 (San Antonio, TX)

The Association for Fire Ecology (AFE) will host the **Sixth International Fire Ecology and Management Congress** in San Antonio, Texas.

IN THE NEWS

Reclamation/USGS partnership sprouts research greenhouse facility in Boulder City (*The Regional Report*)

The August 2015 internal newsletter of the Bureau of Reclamation (BOR) describes its partnership with **Lesley DeFalco** to establish a research greenhouse on its campus in Boulder City, Nevada.

What do rising sea levels in the Pacific Northwest mean for Southern California? (*AirTalk*)

KPCC's *AirTalk* host Larry Mantle interviewed **Karen Thorne** on rising sea levels' impact on vulnerable tidal wetlands along the Oregon and Washington coasts.
<http://www.scpr.org/programs/air-talk/2015/08/14/44123/what-do-rising-sea-levels-in-the-pacific-northwest/>

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NEW JOURNAL ARTICLES (CONT'D)

Shryock, DF, CA Havrilla, **LA DeFalco**, **TC Esque**, **NA Custer**, TE Wood. 2015. **Landscape genomics of *Sphaeralcea ambigua* in the Mojave Desert: a multivariate, spatially-explicit approach to guide ecological restoration.** *Conservation Genetics*. doi:10.1007/s10592-015-0741-1
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5303>

Madej, MA. 2015. **Export of fine particulate organic carbon from redwood-dominated catchments.** *Earth Surface Processes and Landforms*. doi:10.1002/esp.3752

Berry, KH, JS Mack, JF Weigand, TA Gowan, D LaBerteaux. 2015. **Bidirectional recovery patterns of Mojave Desert vegetation in an aqueduct pipeline corridor after 36 years: II. Annual plants.** *Journal of Arid Environments* 122:141-153. doi:10.1016/j.jaridenv.2015.06.016
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5326>

Shryock, DF, **TC Esque**, **FC Chen**. 2015. **Topography and climate are more important drivers of long-term, post-fire vegetation assembly than time-since-fire in the Sonoran Desert, US.** *Journal of Vegetation Science*. doi:10.1111/jvs.12324
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5328>

Treglia, ML, **RN Fisher**, LA Fitzgerald. 2015. **Integrating multiple distribution models to guide conservation efforts of an endangered toad.** *PLoS ONE* 10(6):e0131628. doi:10.1371/journal.pone.0131628
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5332>

Sokolow, SH, E Huttinger, N Jouanard, MH Hsieh, **KD Lafferty**, AM Kuris, G Riveau, S Senghor, C Thiam, A N'Diaye, DS Faye, GA De Leo. 2015. **Reduced transmission of human schistosomiasis after restoration of a native river prawn that preys on the small intermediate host.** *PNAS*. doi:10.1073/pnas.1502651112
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5330>

Schwartz MW, N Butt, CR Dolanc, A Holguin, MA Moritz, MP North, HD Safford, **NL Stephenson**, JH Thorne, **PJ van Mantgem**. 2015. **Increasing elevation of fire in the Sierra Nevada and implications for forest change.** *Ecosphere* 6:art121-art121. doi:10.1890/ES15-00003.1
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5333>

NEW WERC PUBLICATION BRIEFS

Marine foraging ecology influences mercury bioaccumulation in elephant seals
Concentrations of the bioaccumulating form of mercury, methylmercury, increase more rapidly in the mesopelagic zone (200-100m deep) than in surface waters. Northern elephant seals (*Mirounga angustirostris*) eat deep-ocean fish and squid within this zone. USGS researcher **Josh Ackerman** and researchers from the University of California, Santa Cruz collaborated to study mercury bioaccumulation in these predators. Their research is published in *Proceedings of the Royal Society B*.
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5310>

Greater sage-grouse nesting success and habitat use in wildfire-impacted habitat
Greater sage-grouse (*Centrocercus urophasianus*) conceal their nests in dense shrubbery, relying on camouflage to deter predators of eggs and chicks. However, natural and human-influenced wildfires allow invasive grasses to overtake landscapes normally dominated by dense shrubbery. **Peter Coates** and **Michael Casazza** worked with researchers from Idaho State University and the Nevada Department of Wildlife to assess whether greater sage-grouse nesting preferences and success rates differed in postfire landscapes, and published their findings in *The Journal of Wildlife Management*.
<http://www.werc.usgs.gov/ProductDetails.aspx?ID=5309>

Sea otters falling prey to great white sharks (*Science*)

Writer Erik Stokstad composed a concise article on findings from **Tim Tinker's** most recent study. Great white shark attacks on sea otters have surged within the past decade and are now the leading cause of sea otter death in California.
<http://news.sciencemag.org/plants-animals/2015/08/sea-otters-falling-prey-great-white-sharks>

OUTREACH NEWS

Four videos on **Kathryn McEachern's** work in the Channel Islands National Park are now available in the USGS Multimedia Gallery and USGS Youtube channel. The short clips were produced by the USGS and the National Park Service. They include footage of feral horses left behind by ranchers on Santa Rosa Island, McEachern's search for tiny endangered flowers in stretches of grass the size of football fields, and more.
<http://gallery.usgs.gov/videos/925>
<http://gallery.usgs.gov/videos/924>
<http://gallery.usgs.gov/videos/860>
<http://gallery.usgs.gov/videos/859>

