

IEP and IEP-related Publications 2022

Compiled by S.D. Culberson, IEP Lead Scientist

Barros, A., J. A. Hobbs, M. Willmes, C. M. Parker, M. Bisson, N. A. Fangué, A. L. Rypel and L. S. Lewis (2022). "Spatial Heterogeneity in Prey Availability, Feeding Success, and Dietary Selectivity for the Threatened Longfin Smelt." Estuaries and Coasts.

Barton, C. M., A. Lee, M. A. Janssen, S. van der Leeuw, G. E. Tucker, C. Porter, J. Greenberg, L. Swantek, K. Frank, M. Chen and H. R. A. Jagers (2022). "How to make models more useful." *Proc Natl Acad Sci U S A* 119(35): e2202112119.

Bashevkin, S. (2022). "A Framework for Evaluating the Effects of Reduced Spatial or Temporal Monitoring Effort." *San Francisco Estuary and Watershed Science* 20(3).

Bashevkin, S. M., R. Hartman, M. Thomas, A. Barros, C. E. Burdi, A. Hennessy, T. Tempel and K. Kayfetz (2022). "Five decades (1972-2020) of zooplankton monitoring in the upper San Francisco Estuary." *PLoS One* 17(3): e0265402.

Bashevkin, S. M. and B. Mahardja (2022). "Seasonally variable relationships between surface water temperature and inflow in the upper San Francisco Estuary." *Limnology and Oceanography*.

Bashevkin, S. M., B. Mahardja and L. R. Brown (2022). "Warming in the upper San Francisco Estuary: Patterns of water temperature change from five decades of data." *Limnology and Oceanography*.

Brennan, C., J. Hassrick, A. Kalmbach, D. Cox, M. Sabal, R. Zeno, L. Grimaldo and S. Acuña (2022). "Estuarine Recruitment of Longfin Smelt (*Spirinchus thaleichthys*) north of the San Francisco Estuary." *San Francisco Estuary and Watershed Science* 20(3).

Colborne, S. F., L. W. Sheppard, D. R. O'Donnell, D. C. Reuman, J. A. Walter, G. P. Singer, J. T. Kelly, M. J. Thomas and A. L. Rypel (2022). "Intraspecific variation in migration timing of green sturgeon in the Sacramento River system." *Ecosphere* 13(6).

Coleman, L., R. Johnson, F. Cordoleani, C. Phillis and A. Sturrock (2022). "Variation in Juvenile Salmon Growth Opportunities Across a Shifting Habitat Mosaic." *San Francisco Estuary and Watershed Science* 20(1).

Colombano, D. D., S. M. Carlson, J. A. Hobbs and A. Ruhi (2022). "Four decades of climatic fluctuations and fish recruitment stability across a marine-freshwater gradient." *Glob Chang Biol* 28(17): 5104-5120.

Cordoleani, F., E. Holmes, M. Bell-Tilcock, R. C. Johnson and C. Jeffres (2022). "Variability in foodscapes and fish growth across a habitat mosaic: Implications for management and ecosystem restoration." *Ecological Indicators* 136.

Davis, B., J. Adams, L. Lewis, J. Hobbs, N. Ikemiyagi, C. Johnston, L. Mitchell, A. Shakya and B. Schreier (2022). "Wakasagi in the San Francisco Bay Delta Watershed: Comparative Trends in Distribution and Life-History Traits with Native Delta Smelt." *San Francisco Estuary and Watershed Science* 20(3).

Ehrlich, P. R. and A. H. Ehrlich (2022). "Returning to "Normal"? Evolutionary Roots of the Human Prospect." *Bioscience* 72(8): 778-788.

Eschenroeder, J., M. Peterson, M. Hellmair, T. Pilger, D. Demko and A. Fuller (2022). "Counting the Parts to Understand the Whole: Rethinking Monitoring of Steelhead in California's Central Valley." *San Francisco Estuary and Watershed Science* 20(1).

Gille, D., B. Barney, A. Segarra, M. Baerwald, A. Schreier and R. Connon (2022). "Investigation of Molecular Pathogen Screening Assays for Use in Delta Smelt." *San Francisco Estuary and Watershed Science* 20(1).

Glibert, P. M., F. P. Wilkerson, R. C. Dugdale and A. E. Parker (2022). "Ecosystem Recovery in Progress? Initial Nutrient and Phytoplankton Response to Nitrogen Reduction from Sewage Treatment Upgrade in the San Francisco Bay Delta." *Nitrogen* 3(4): 569-591.

Gross, E., W. Kimmerer, J. Korman, L. Lewis, S. Burdick and L. Grimaldo (2022). "Hatching distribution, abundance, and losses to freshwater diversions of longfin smelt inferred using hydrodynamic and particle-tracking models." *Marine Ecology Progress Series* 700: 179-196.

Halverson, G. H., C. M. Lee, E. L. Hestir, G. C. Hulley, K. Cawse-Nicholson, S. J. Hook, B. A. Bergamaschi, S. Acuna, N. B. Tuffillaro, R. G. Radocinski, G. Rivera and T. R. Sommer (2022). "Decline in Thermal Habitat Conditions for the Endangered Delta Smelt as Seen from Landsat Satellites (1985-2019)." *Environ Sci Technol* 56(1): 185-193.

Hamilton, S. A. and D. D. Murphy (2022). "Identifying Environmental Factors Limiting Recovery of an Imperiled Estuarine Fish." *Frontiers in Ecology and Evolution* 10.

Hartman, R., A. Barros, M. Avila, C. Bowles, D. Ellis, T. Tempel and S. Sherman (2022). "I'm not that Shallow – Different Zooplankton Abundance but Similar Community Composition Between Habitats in the San Francisco Estuary." *San Francisco Estuary and Watershed Science* 20(3).

Hauer, F. R., M. S. Lorang and T. Gonser (2022). "Remote Sensing to Characterize River Floodplain Structure and Function." *Remote Sensing* 14(5).

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Autumn." *Estuaries and Coasts*.

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Howard, M. D. A., J. Smith, D. A. Caron, R. M. Kudela, K. Loftin, K. Hayashi, R. Fadness, S. Fricke, J. Kann, M. Roethler, A. Tatters and S. Theroux (2022). "Integrative monitoring strategy for marine and freshwater harmful algal blooms and toxins across the freshwater-to-marine continuum." *Integr Environ Assess Manag*.

Hung, T. C., L. Ellison, T. Stevenson, M. Sandford, A. A. Schultz and A. R. Eads (2022). "Early Weaning in Endangered Delta Smelt: Effect of Weaning Time on Growth and Survival." *North American Journal of Aquaculture*.

Hung, T. C., B. G. Hammock, M. Sandford, M. Stillway, M. Park, J. C. Lindberg and S. J. Teh (2022). "Temperature and salinity preferences of endangered Delta Smelt (*Hypomesus transpacificus*, Actinopterygii, Osmeridae)." *Sci Rep* 12(1): 16558.

Huntsman, B., B. Mahardja and S. Bashevkin (2022). "Relative Bias in Catch Among Long-Term Fish Monitoring Surveys Within the San Francisco Estuary." *San Francisco Estuary and Watershed Science* 20(1).

Keeley, A. T. H., A. K. Fremier, P. A. L. Goertler, P. R. Huber, A. M. Sturrock, S. M. Bashevkin, B.

A. Barbaree, J. L. Grenier, T. E. Dilts, M. Gogol-Prokurat, D. D. Colombano, E. E. Bush, A. Laws, J.

A. Gallo, M. Kondolf and A. T. Stahl (2022). "Governing Ecological Connectivity in Cross-Scale Dependent Systems." *BioScience*.

Kimmerer, W. and E. Gross (2022). "Population Abundance and Diversion Losses in a Threatened Estuarine Pelagic Fish." *Estuaries and Coasts*.

Kurobe, T., B. G. Hammock, L. J. Damon, T. C. Hung, S. Acuna, A. A. Schultz and S. J. Teh (2022). "Reproductive strategy of Delta Smelt *Hypomesus transpacificus* and impacts of drought on reproductive performance." *PLoS One* 17(3): e0264731.

Lehman, P. (2022). "The increase of cyanobacteria and benthic diatoms over 43 years in upper San Francisco Estuary, California." *Estuarine, Coastal and Shelf Science* 275.

Lojkovic Burris, Z. P., R. D. Baxter and C. E. Burdi (2022). "Larval and juvenile Longfin Smelt diets as a function of fish size and prey density in the San Francisco Estuary." *California Fish and Wildlife Journal* 108(2).

Loken, L. C., S. Sadro, L. E. K. Lenocho, P. R. Stumpner, R. A. Dahlgren, J. R. Burau and E. E. Van Nieuwenhuysse (2022). "Whole-Ecosystem Experiment Illustrates Short Timescale Hydrodynamic, Light, and Nutrient Control of Primary Production in a Terminal Slough." *Estuaries and Coasts*.

Mahardja, B., S. M. Bashevkin, C. Pien, M. Nelson, B. E. Davis and R. Hartman (2022). "Escape from the heat: thermal stratification in a well-mixed estuary and implications for fish species facing a changing climate." *Hydrobiologia* 849(13): 2895-2918.

Moyle, P. B. and M. A. Campbell (2022). "Cryptic Species of Freshwater Sculpin (Cottidae: Cottus) in California, USA." *Zootaxa* 5154(5): 501-527.

Nagarajan, R. P., M. Bedwell, A. E. Holmes, T. Sanches, S. Acuña, M. Baerwald, M. A. Barnes, S. Blankenship, R. E. Connon, K. Deiner, D. Gille, C. S. Goldberg, M. E. Hunter, C. L. Jerde, G. Luikart, R. S. Meyer, A. Watts and A. Schreier (2022). "Environmental DNA Methods for Ecological Monitoring and Biodiversity Assessment in Estuaries." *Estuaries and Coasts*.

Nelson, P., M. Baerwald, O. Burgess, E. Bush, A. Collins, F. Cordoleani, H. DeBey, D. Gille, P. Goertler, B. Harvey, R. Johnson, J. Kindopp, E. Meyers, J. Notch, C. Phillis, G. Singer and T. Sommer (2022). "Considerations for the Development of a Juvenile Production Estimate for Central Valley Spring-Run Chinook Salmon." *San Francisco Estuary and Watershed Science* 20(2).

Pathak, D., M. Hutchins, L. E. Brown, M. Loewenthal, P. Scarlett, L. Armstrong, D. Nicholls, M.

Bowes, F. Edwards and G. Old (2022). "High-resolution water-quality and ecosystem-metabolism modeling in lowland rivers." *Limnology and Oceanography* 67(6): 1313-1327.

Rachid, N., N. Issam, B. Abdelkrim, A. Abdelhamid and H. Amina (2022). "Pond Energy Dynamics, Evaporation Rate and Ensemble Deep Learning Evaporation Prediction: Case Study of the Thomas Pond—Brenne Natural Regional Park (France)." *Water* 14(6).

Richardson, C., J. Fackrell, T. E. C. Kraus, M. Young and A. Paytan (2022). "Nutrient and Trace Element Contributions from Drained Islands in the Sacramento–San Joaquin Delta, California." *San Francisco Estuary and Watershed Science* 20(2).

Rollwagen-Bollens, G., K. A. Connelly, S. M. Bollens, J. Zimmerman and A. Coker (2022). "Nutrient Control of Phytoplankton Abundance and Biomass, and Microplankton Assemblage Structure in the Lower Columbia River (Vancouver, Washington, USA)." *Water* 14(10).

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Sturrock, A. M., M. Ogaz, K. Neal, N. J. Corline, R. Peek, D. Myers, S. Schluep, M. Levinson, R. C. Johnson and C. A. Jeffres (2022). "Floodplain trophic subsidies in a modified river network: managed foodscapes of the future?" *Landscape Ecology*.

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Tillotson, M., J. Hassrick, A. Collins and C. Phillis (2022). "Machine Learning Forecasts to Reduce Risk of Entrainment Loss of Endangered Salmonids at Large-Scale Water Diversions in the Sacramento–San Joaquin Delta, California." *San Francisco Estuary and Watershed Science* 20(2).

Wulff, M., F. Feyrer and M. Young (2022). "Gill Net Selectivity for Fifteen Fish Species of the Upper San Francisco Estuary." *San Francisco Estuary and Watershed Science* 20(2).

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