

## IEP and IEP-related Publications 2020

Compiled by S.D. Culberson, IEP Lead Scientist

Bogard, M. J., B. A. Bergamaschi, D. E. Butman, F. Anderson, S. H. Knox and L. Windham-Myers (2020). "Hydrologic Export Is a Major Component of Coastal Wetland Carbon Budgets." Global Biogeochemical Cycles **34**(8).

Cloern, J. E., T. S. Schraga, E. Nejad and C. Martin (2020). "Nutrient Status of San Francisco Bay and Its Management Implications." *Estuaries and Coasts* 43(6): 1299-1317.

Connelly, K. A., G. Rollwagen-Bollens and S. M. Bollens (2020). "Seasonal and longitudinal variability of zooplankton assemblages along a river-dominated estuarine gradient." *Estuarine, Coastal and Shelf Science* 245.

Cordoleani, F., W. Satterthwaite, M. Daniels and M. Johnson (2020). "Using Life Cycle Models to Identify Monitoring Gaps for Central Valley Spring-Run Chinook Salmon." *San Francisco Estuary and Watershed Science* 18(4).

Delaney, C. J., R. K. Hartman, J. Mendoza, M. Dettinger, L. Delle Monache, J. Jasperse, F. M. Ralph, C. Talbot, J. Brown, D. Reynolds and S. Evett (2020). "Forecast Informed Reservoir Operations Using Ensemble Streamflow Predictions for a Multipurpose Reservoir in Northern California." *Water Resources Research* 56(9).

Diefenderfer, H. L., G. D. Steyer, M. C. Harwell, A. J. LoSchiavo, H. A. Neckles, D. M. Burdick, G. E. Johnson, K. E. Buenau, E. Trujillo, J. C. Callaway, R. M. Thom, N. K. Ganju and R. R. Twilley (2020). "Applying cumulative effects to strategically advance large-scale ecosystem restoration." *Frontiers in Ecology and the Environment*.

Drexler, J. Z., M. J. Davis, I. Woo and S. De La Cruz (2020). "Carbon Sources in the Sediments of a Restoring vs. Historically Unaltered Salt Marsh." *Estuaries and Coasts* 43(6): 1345-1360.

Durand, J., F. Bombardelli, W. Fleenor, Y. Henneberry, J. Herman, C. Jeffres, M. Leinfelder-Miles, R. Lusardi, A. Manfree, J. Medellín-Azura, B. Milligan, P. Moyle and J. Lund (2020). "Drought and the Sacramento–San Joaquin Delta, 2012–2016: Environmental Review and Lessons." *San Francisco Estuary and Watershed Science* 18(2).

Ghalambor, C., E. Grosholtz, E. Gross, K. Jeffries, J. Largier, S. McCormick, T. Sommer, J. Velotta and A. Whitehead (2020). "Ecological Effects of Climate-Driven Salinity Variation in the San Francisco Estuary: Can We Anticipate and Manage the Coming Changes?" *San Francisco Estuary and Watershed Science* 19(2).

Gilby, B. L., M. P. Weinstein, R. Baker, J. Cebrian, S. B. Alford, A. Chelsky, D. Colombano, R. M. Connolly, C. A. Currin, I. C. Feller, A. Frank, J. A. Goeke, L. A. Goodridge Gaines, F. E. Hardcastle,

C. J. Henderson, C. W. Martin, A. E. McDonald, B. H. Morrison, A. D. Olds, J. S. Rehage, N. J. Waltham and S. L. Ziegler (2020). "Human Actions Alter Tidal Marsh Seascapes and the Provision of Ecosystem Services." *Estuaries and Coasts*.

Grimaldo, L., J. Burns, R. E. Miller, A. Kalmbach, A. Smith, J. Hassrick and C. Brennan (2020). "Forage Fish Larvae Distribution and Habitat Use During Contrasting Years of Low and High Freshwater Flow in the San Francisco Estuary." *San Francisco Estuary and Watershed Science* 18(3).

Halpern, B. S., E. Berlow, R. Williams, E. T. Borer, F. W. Davis, A. Dobson, B. J. Enquist, H. E. Froehlich, L. R. Gerber, C. J. Lortie, M. I. O'Connor, H. Regan, D. P. Vázquez and G. Willard (2020). "Ecological Synthesis and Its Role in Advancing Knowledge." *BioScience*.

Hammock, B. G., W. F. Ramirez-Duarte, P. A. Triana Garcia, A. A. Schultz, L. I. Avendano, T. C. Hung, J. R. White, Y. T. Bong and S. J. Teh (2020). "The health and condition responses of Delta Smelt to fasting: A time series experiment." *PLoS One* 15(9): e0239358.

Hatchett, B. J., Q. Cao, P. B. Dawson, C. J. Ellis, C. W. Hecht, B. Kawzenuk, J. T. Lancaster, T. C. Osborne, A. M. Wilson, M. L. Anderson, M. D. Dettinger, J. F. Kalansky, M. L. Kaplan, D. P. Lettenmaier, N. S. Oakley, F. M. Ralph, D. W. Reynolds, A. B. White, M. Sierks and E. Sumargo (2020). "Observations of an Extreme Atmospheric River Storm With a Diverse Sensor Network." *Earth and Space Science* 7(8).

Huntsman, B., F. Feyrer and M. Young (2020). "Use of the SmeltCam as an Efficient Fish Sampling Alternative Within the San Francisco Estuary." *San Francisco Estuary and Watershed Science* 19(2).

Jahn, A. and W. Kier (2020). "Reconsidering the Estimation of Salmon Mortality Caused by the State and Federal Water Export Facilities in the Sacramento–San Joaquin Delta, San Francisco Estuary." *San Francisco Estuary and Watershed Science* 18(3).

Karrigan Börk, P. M., John Durand, Tien-Chieh Hung, and Andrew L. Rypel (2020). "SMALL POPULATIONS IN JEOPARDY: A DELTA SMELT CASE STUDY." *ENVIRONMENTAL LAW REPORTER*.

Lehman, B., R. C. Johnson, M. Adkison, O. T. Burgess, R. E. Connon, N. A. Fanguie, J. S. Foott, S. L. Hallett, B. Martínez–López, K. M. Miller, M. K. Purcell, N. A. Som, P. Valdes–Donoso and A. A. Collins (2020). "Disease in Central Valley Salmon: Status and Lessons from Other Systems." *San Francisco Estuary and Watershed Science* 18(3).

Lucas, L. V. and E. Deleersnijder (2020). "Timescale Methods for Simplifying, Understanding and Modeling Biophysical and Water Quality Processes in Coastal Aquatic Ecosystems: A Review." *Water* 12(10).

Mahardja, B., V. Tobias, S. Khanna, L. Mitchell, P. Lehman, T. Sommer, L. Brown, S. Culberson and J. L. Conrad (2020). "Resistance and resilience of pelagic and littoral fishes to drought in the

San Francisco Estuary." *Ecol Appl*: e2243.

Major, K. M., B. M. DeCourten, J. Li, M. Britton, M. L. Settles, A. C. Mehinto, R. E. Connon and S. M. Brander (2020). "Early Life Exposure to Environmentally Relevant Levels of Endocrine Disruptors Drive Multigenerational and Transgenerational Epigenetic Changes in a Fish Model." *Frontiers in Marine Science* 7.

Martin, B. T., P. N. Dudley, N. S. Kashef, D. M. Stafford, W. J. Reeder, D. Tonina, A. M. Del Rio, J. Scott Foott and E. M. Danner (2020). "The biophysical basis of thermal tolerance in fish eggs." *Proc Biol Sci* 287(1937): 20201550.

Matica, Z. (2020). "Considerations for Multi-Species Fish Passage in California: A Literature Review." *San Francisco Estuary and Watershed Science* 18(3).

Mitchell, L. and R. Baxter (2020). "Examining Retention-at-Length of Pelagic Fishes Caught in the Fall Midwater Trawl Survey." *San Francisco Estuary and Watershed Science* 19(2).

Mundy, P. C., M. F. Carte, S. M. Brander, T. C. Hung, N. Fangué and R. E. Connon (2020). "Bifenthrin exposure causes hyperactivity in early larval stages of an endangered fish species at concentrations that occur during their hatching season." *Aquat Toxicol* 228: 105611.

Munsch, S. H., C. M. Greene, R. C. Johnson, W. H. Satterthwaite, H. Imaki, P. L. Brandes and M. R. O'Farrell (2020). "Science for integrative management of a diadromous fish stock: interdependencies of fisheries, flow, and habitat restoration." *Canadian Journal of Fisheries and Aquatic Sciences* 77(9): 1487-1504.

Patton, O., V. Larwood and M. Young (2020). "Estuarine Habitat Use by White Sturgeon (*Acipenser transmontanus*)." *San Francisco Estuary and Watershed Science* 18(4).

Romine, J., R. Perry, P. Stumpner, A. Blake and J. Burau (2020). "Effects of Tidally Varying River Flow on Entrainment of Juvenile Salmon into Sutter and Steamboat Sloughs." *San Francisco Estuary and Watershed Science* 19(2).

Sellheim, K., S. Zeug and J. Merz (2020). "Informed water management alternatives for an over-allocated river: Incorporating salmon life stage effects into a decision tree process during drought." *Fisheries Management and Ecology* 27(5): 498-516.

Sommer, T. (2020). "How to Respond? An Introduction to Current Bay–Delta Natural Resources Management Options." *San Francisco Estuary and Watershed Science* 18(3).

Sommer, T., B. Schreier, J. L. Conrad, L. Takata, B. Serup, R. Titus, C. Jeffres, E. Holmes and J. Katz (2020). "Farm to Fish: Lessons from a Multi-Year Study on Agricultural Floodplain Habitat." *San Francisco Estuary and Watershed Science* 18(3).

Stern, M. A., L. E. Flint, A. L. Flint, N. Knowles and S. A. Wright (2020). "The Future of Sediment

Transport and Streamflow Under a Changing Climate and the Implications for Long-Term Resilience of the San Francisco Bay-Delta." *Water Resources Research* 56(9).

Stewart, A. R., F. Feyrer and R. C. Johnson (2020). "Resolving selenium exposure risk: Spatial, temporal, and tissue-specific variability of an endemic fish in a large, dynamic estuary." *Science of The Total Environment* 707.

Stumpner, P. R., J. R. Burau and A. L. Forrest (2020). "A Lagrangian-to-Eulerian Metric to Identify Estuarine Pelagic Habitats." *Estuaries and Coasts*.

IEP Long-term Survey Review Team. (2020). Interagency Ecological Program Long-term Monitoring Element Review: Pilot approach and methods development (2020). IEP Technical Report. 201 pp.

Valentine, D. A., M. J. Young and F. Feyrer (2020). "Sacramento Pikeminnow Migration Record." *Journal of Fish and Wildlife Management* 11(2): 588-592.

Verhille, C. E., T. F. Dabruzzi, D. E. Cocherell, B. Mahardja, F. Feyrer, T. C. Foin, M. R. Baerwald, N. A. Fangué and S. Cooke (2020). "Inter-population differences in salinity tolerance of adult wild Sacramento splittail: osmoregulatory and metabolic responses to salinity." *Conservation Physiology* 8(1).

Wang, Z., F. Chai, R. Dugdale, Q. Liu, H. Xue, F. Wilkerson, Y. Chao, Y. Zhang and H. Zhang (2020). "The interannual variabilities of chlorophyll and nutrients in San Francisco Bay: a modeling study." *Ocean Dynamics* 70(8): 1169-1186.

Work, P. A., M. Downing-Kunz and J. Z. Drexler (2020). "Trapping of Suspended Sediment by Submerged Aquatic Vegetation in a Tidal Freshwater Region: Field Observations and Long-Term Trends." *Estuaries and Coasts*.

Young, M., E. Howe, T. O'Rear, K. Berridge and P. Moyle (2020). "Food Web Fuel Differs Across Habitats and Seasons of a Tidal Freshwater Estuary." *Estuaries and Coasts* 44(1): 286-301.

Young, M. J., F. Feyrer, P. R. Stumpner, V. Larwood, O. Patton and L. R. Brown (2020). "Hydrodynamics drive pelagic communities and food web structure in a tidal environment." *International Review of Hydrobiology* 106(2): 69-85.

Zeug, S. C., M. Beakes, J. Wiesenfeld, M. Greenwood, L. Grimaldo, J. Hassrick, A. Collins, S. Acuña and M. Johnston (2020). "Experimental Quantification of Piscivore Density and Habitat Effects on Survival of Juvenile Chinook Salmon in a Tidal Freshwater Estuary." *Estuaries and Coasts*.