

2015 Class of Science Fellows

<i>Postdoctoral Fellow</i>	<i>Topic</i>	<i>Lead Institutions</i>	<i>Community Mentor</i>	<i>Funding Agency</i>	<i>Funding Amount</i>	<i>Priority Research Topic</i>
Julie Hopper	The effectiveness of a water hyacinth weevil as a biological control agent of the invasive water hyacinth	UC Berkeley & UC Davis	USDA/ARS/WRRC, Department of Water Resources, Sacramento-San Joaquin Delta Conservancy	Council	\$197,903.00	Science supporting the enhancement and protection of the cultural, recreational, natural resources, and agricultural values of the Delta by assessing the effects of a biological control agent on an invasive aquatic plant (Table 2, 4i) .
Ivy Huang	Sediment dynamics during (and after) the drought in the Delta	Stanford University	USGS - California Water Science Center	Council	\$180,190.00	Assessing the effects of drought on the Delta by investigating drought-induced changes in flow and using physical and biological data to advance both conceptual and computational models (Table 2, 1i,ii) .
Joseph Smith	The effect of drought on the distribution and movement of a non-native predator (striped bass)	University of Washington	NOAA Fisheries	Council and NOAA NMFS Southwest Fisheries Science Center	\$188,243.00	Assessing the effects of drought on the Delta by investigating drought-induced changes in flow and using physical and biological data to advance both conceptual and computational models (Table 2, 1i,ii) . And, develop decision support tools for management of estuarine and migratory species by investigating how monitoring results can be utilized for tactical forecasting and predictions of impacts of water management on fish (Table 2, 3iii) .
<i>Doctoral Fellow</i>	<i>Topic</i>	<i>Lead Institutions</i>	<i>Community Mentor</i>	<i>Funding Agency</i>	<i>Funding Amount</i>	<i>Priority Research Topic</i>
Kyle Hemes	Annual greenhouse gas fluxes in drained and restored wetlands in the Sacramento-San Joaquin Delta, to determine the potential net benefit of wetland restoration	UC Berkeley	CA Department of Water Resources & HydroFocus	Council	\$114,909.00	Science supporting the enhancement and protection of the cultural, recreational, natural resource, and agricultural values of the Delta by investigating the effects of changing climate patterns and understudied faults (Table 2, 4iii) .
Sophie Taddeo	Developing a methodological framework to assess the effectiveness of previous restoration efforts to inform future restoration planning	UC Berkeley	San Francisco Estuary Institute	Council	\$131,938.00	Effectiveness and implications of habitat restoration actions (Table 2, 2i-iii) .
Denise De Carion	The ecological functions of tidal marsh for estuarine and migratory fishes in the Suisun Marsh	UC Davis	CA Department of Water Resources	Council	\$116,138.00	Assessing the effects of drought on the Delta. Effectiveness and implications of habitat restoration actions. Develop decision support tools for management of estuarine and migratory species (Table 2, 1-3) .
Brittany Davis	The impacts of multiple stressors, including climate change and salinity, on the physiological performance and predator-prey dynamics in native and non-native delta fishes	UC Davis	CA Department of Water Resources & CA Department of Fish & Wildlife	Council	\$106,819.00	Assessing the effects of drought on the Delta by using physical and biological data to advance both conceptual and computational models and investigating the physiological effects of drought on fish (Table 2, 1ii,iii) .
Alison Whipple	Spatio-temporal variation of floodplain habitat for restoration management	UC Davis & UC Merced	The Nature Conservancy	Council	\$101,911.00	Effectiveness and implications of habitat restoration actions by assessing the effectiveness of wetland habitat restoration on food web dynamics and fish condition and survival (Table 2, 2ii) . And, decision support tools for management of estuarine and migratory species by developing innovative approaches for determining and predicting distribution of fish and fish habitat (Table 2, 3i) .

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Huajin (Jessica) Chen	Modeling pesticide fluxes in the Delta and exploring the effects of pesticide loadings on three insects introduced for invasive weed control	UC Davis	NASA	Council	\$103,867.00	Science supporting the enhancement and protection of the cultural, recreational, natural resources, and agricultural values of the Delta by assessing the effects of a biological control agent on an invasive aquatic plant and investigating the effects of changing climate patterns and understudied faults (Table 2, 4i,iii) . And, assessing the effects of drought on the Delta by investigating drought-induced changes in flow (Table 2, 1i) .
Jennifer Harfmann	The effect of particulate organic carbon composition on zooplankton growth in tidal wetlands	UC Davis	USGS	Council	\$104,605.00	Effectiveness and implications of habitat restoration actions by assessing the effectiveness of wetland habitat restoration on food web dynamics and fish condition and survival (Table 2, 2ii) .
Megan Kelso	The effects of drought and elevated nutrients on invasion by perennial pepperweed and implications for carbon storage in tidal wetlands	UC Davis	USGS - California Water Science Center, Sacramento-San Joaquin Delta Conservancy	Council	\$104,444.00	Assessing the effects of drought on the Delta (Table 2, 1) .
Marissa Giroux	The effects of early hypersaline acclimation due to climate change on the toxicity of pyrethroid, an insecticide, in salmonids	UC Riverside	USGS & Department of Pesticide Regulation	State and Federal Contractors Water Agency	\$129,594.00	Assessing the effects of drought on the Delta by investigating drought-induced changes in flow (Table 2, 1i) . And, developing decision support tools for management of estuarine and migratory species by investigating how monitoring results can be utilized for tactical forecasting and predictions of impacts of water management on fish (Table 2, 3iii) .

Total amount funded: \$1,580,561.00

[Table 2 is from the Delta Agency Science Workgroup's 2015-2016 High-Impact Science Actions Report - Delta Science Fellows 2015 Priority Research Topics]

**DELTA SCIENCE FELLOWS 2015 HIGH-IMPACT SCIENCE ACTIONS
RESEARCH TOPICS**

	1. Assessing the effects of drought on the Delta	2. Effectiveness and implications of habitat restoration actions	3. Develop decision support tools for management of estuarine and migratory species	4. Science supporting the enhancement and protection of the cultural, recreational, natural resource, and agricultural values of the Delta
Julie Hopper - The effectiveness of a water hyacinth weevil as a biological control agent of the invasive water hyacinth				X
Ivy Huang - Sediment dynamics during (and after) the drought in the Delta	X			
Joseph Smith - The effect of drought on the distribution and movement of a non-native predator (striped bass)	X		X	
Kyle Hemes - Annual greenhouse gas fluxes in drained and restored wetlands in the Sacramento-San Joaquin Delta, to determine the potential net benefit of wetland restoration				X
Sophie Taddeo - Developing a methodological framework to assess the effectiveness of previous restoration efforts to inform future restoration planning		X		
Denise DeCarion - The ecological functions of tidal marsh for estuarine and migratory fishes in the Suisun Marsh	X	X	X	
Brittany Davis - The impacts of multiple stressors, including climate change and salinity, on the physiological performance and predator-prey dynamics in native and non-native delta fishes	X			
Alison Whipple - Spatio-temporal variation of floodplain habitat for restoration management		X	X	
Huajin (Jessica) Chen - Modeling pesticide fluxes in the Delta and exploring the effects of pesticide loadings on three insects introduced for invasive weed control	X			X
Jennifer Harfmann - The effect of particulate organic carbon composition on zooplankton growth in tidal wetlands		X		
Megan Kelso - The effects of drought and elevated nutrients on invasion by perennial pepperweed and implications for carbon storage in tidal wetlands	X			
Marissa Giroux - The effects of early hypersaline acclimation due to climate change on the toxicity of pyrethroid, an insecticide, in salmonids	X		X	