



# **Suisun Resource Conservation District**

## **2018 Annual Report**

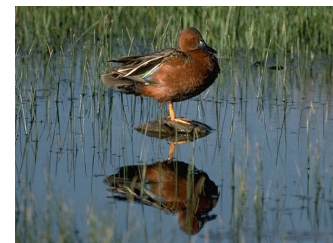


## Introduction

As a result of the collapse of agriculture and the Great Dust Bowl in 1938, the California Legislature passed laws authorizing the creation of California's soil conservation districts. In 1971, all of California's 113 soil conservation districts that help manage and protect public land became Resource Conservation Districts. California's Resource Conservation Districts are governed under Division 9 of the Public Resource Code and are empowered to coordinate resource management efforts for purposes of watershed restoration and enhancement, runoff control, soil erosion prevention, water quality protection, distribution of water, improve land capabilities, and the facilitation of resource management efforts for watershed restoration and enhancement.

The Suisun Soil Conservation District was created in 1963 which later became the Suisun Resource Conservation District (SRCD). In 1974, the Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act was passed defining SRCD boundaries and requiring the formal establishment of policies, regulations, and local protection programs for the Suisun Marsh.

The California Legislature enacted the Suisun Marsh Preservation Act in 1977 which established new land use protections under the 1976 Suisun Marsh Protection Plan and empowered SRCD with the "...primary local responsibility for regulating and improving water management practices on privately owned lands within the primary management area of the Suisun Marsh". Additionally, SRCD was given the authority to issue regulations requiring compliance with any water management plan or program for privately owned lands within the primary management area of the marsh.





## Vision and Mission

### Our Vision

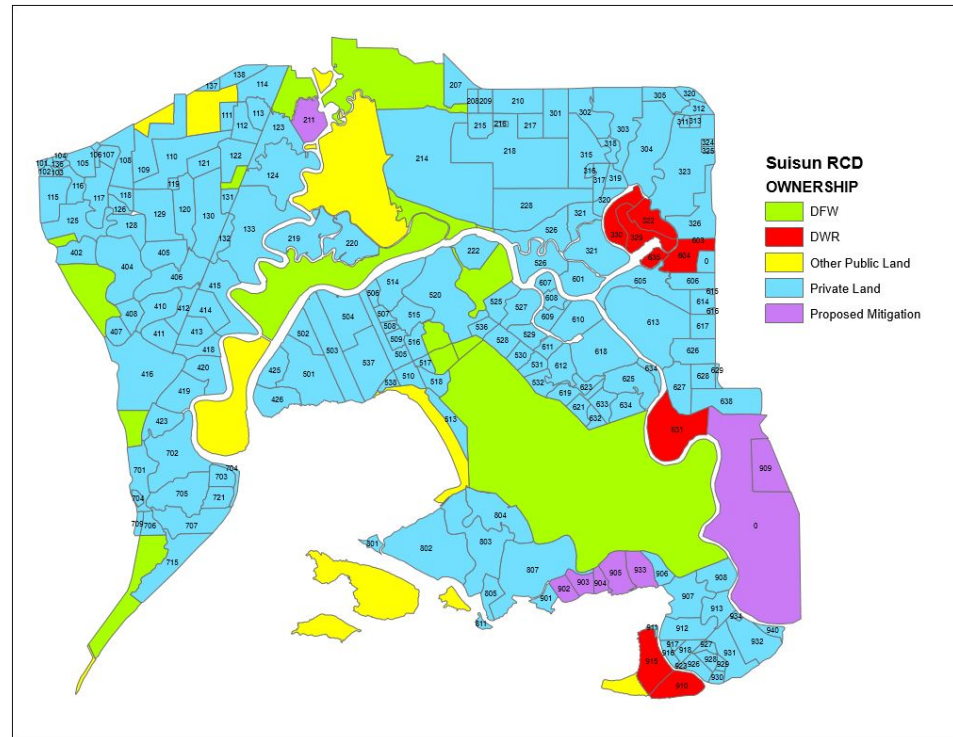
Improve programs and services to provide the Suisun Marsh landowners technical assistance in environmental permitting, habitat management, water control, and funding to ensure the wetland and wildlife values of the Suisun Marsh are sustained and enhanced.

### Our Mission

The Suisun Resource Conservation District works collaboratively with private landowners, local, State, and Federal agencies and conservation organizations to meet the environmental and conservation needs of the Suisun Marsh, Solano County, and the San Francisco Bay-Delta of California for future generations. SRCD's historic goal has been to achieve a water supply of sufficient quality so that preferred wetland habitat conditions and wildlife values can be retained through appropriate management practices. SRCD seeks to implement existing programs and develop new efforts aimed at protecting and enhancing the Suisun Marsh wetland and wildlife resources.

## Scope and Responsibilities

Today, SRCD provides the landowners with technical assistance in environmental permitting, water control, habitat management, grants, and cost share programs to ensure the wetland and wildlife values of the Suisun Marsh are sustained and enhanced. SRCD also coordinates with numerous government agencies and conservation partners to represent landowner interests and concerns in the preservation of the Suisun Marsh wetland and wildlife resources.



### **SRCD Contact information:**

Suisun Resource Conservation District  
2544 Grizzly Island Road  
Suisun City, CA, 94585-9539

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Website: [www.suisunrcd.org](http://www.suisunrcd.org)



## Staff Contacts and Organization Chart

### SRCD Main Office:

Steven Chappell	Executive Director	Ext. 4	(707) 425-9302 (707) 631-8634 - cell
John Takekawa	Operations Manager	Ext. 2	(707) 631-1402 - cell
Kelli Perez	Office Supervisor	Ext. 6	N/A
Christina Tortosa	Biologist		(707) 631-4078 - cell
Mark Mouton	Caretaker, Lower Joice Island		(707) 631-1857 - cell

### Water Manager's Office:

			(707) 426-2431
Phelan McKinney	Biologist/Water Manager	Ext. 300	(707) 631-0819 - cell
Jeff Taylor	Biologist/Water Manager	Ext. 301	(707) 639-6690 - cell
Tim Edmunds	Biologist/Water Manager	Ext. 302	(707) 639-6689 - cell

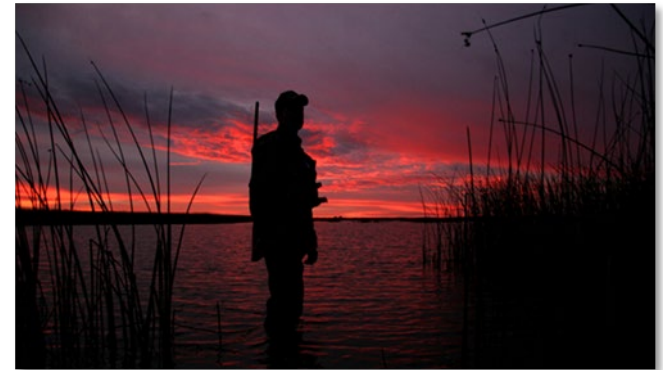


## Board of Directors and Associate Directors

The Board of Directors is the governing body of SRCD and is comprised of five unpaid members appointed to 4-year terms. SRCD's Board of Directors meetings are open to the public. They are held at 2 PM on the second Wednesday of each month at the Solano County Supervisors Chambers - 675 Texas Street Fairfield, CA 94533.

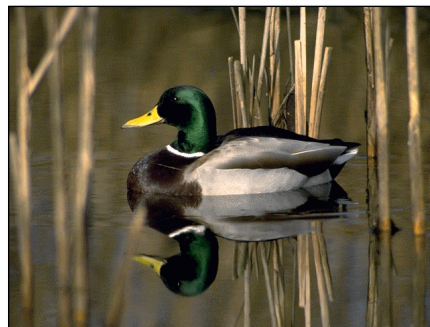
### SRCD Board of Directors

Tony Vaccarella	President	(650) 365-1642
Terry Connolly	Finance Committee	(707) 864-1105
Arnold Lenk	Agency Relations Committee	(925) 284-3100
Jim Waters	Legal Committee	(510) 409-3864
Mike Lewis	Personnel Committee	(707) 224-3824



### SRCD Associate Directors

Dennis Becker  
Kurt Black  
Bill Brush  
H. Kent Hansen  
Steve Roerden



### SRCD Directors Emeritus (\*deceased)

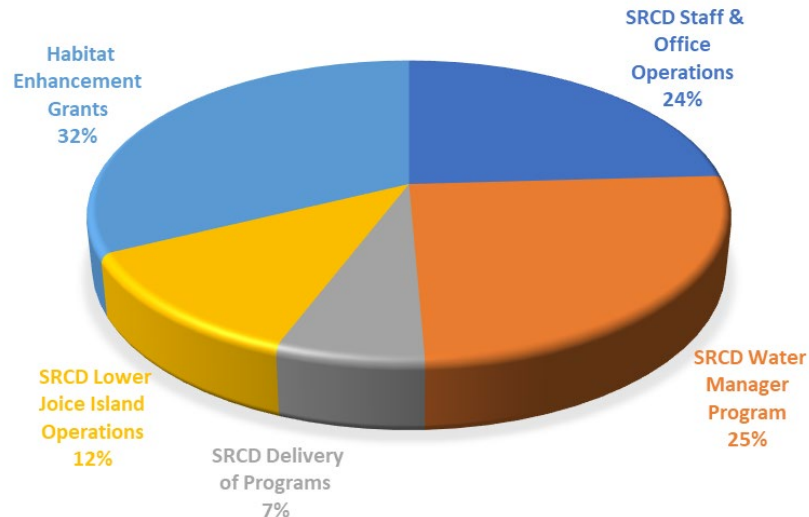
James Bancroft  
Paul Crapuchettes\*  
Ray Lewis\*  
Dr. William Coon\*  
Greg Palamountain\*  
Timothy Egan\*  
Leland Lehman\*

## Financial Summary

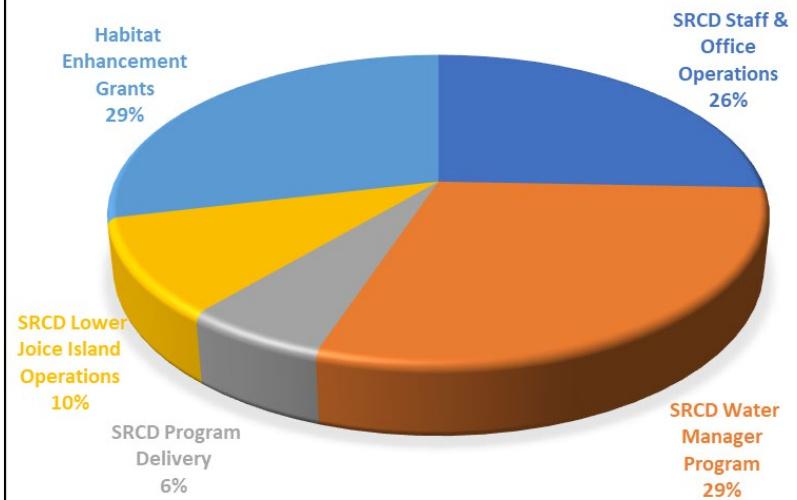
SRCD is supported by a diversity of funding sources that enables SRCD to fulfill our mission and provide services to the Suisun Marsh landowners. Each year, SRCD secures local, state, and federal funds through contracts, agreements, and grant awards to support the delivery of SRCD Programs to the landowners. SRCD's fiscal year is July 1<sup>st</sup> to June 30<sup>th</sup>.

Latest Audited SRCD Financials - Fiscal Year 2016/2017

**SRCD FY16/17 REVENUES**



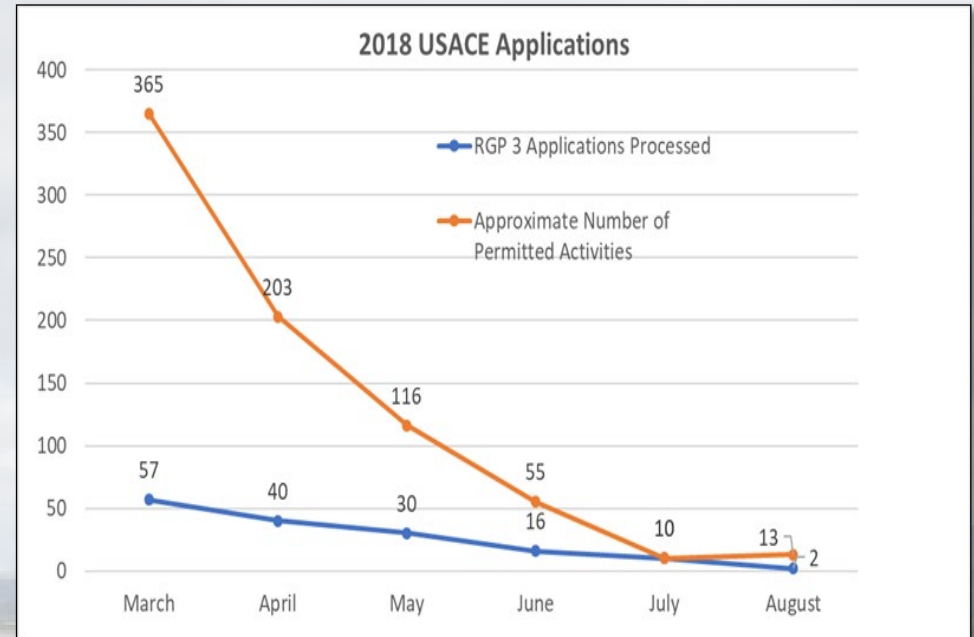
**SRCD FY 16/17 EXPENSES**





## Environmental Permitting

The wetland and wildlife resources of the Suisun Marsh are protected and regulated by a myriad of local, state and federal laws, policies, and regulations. SRCD has held and administered the U. S. Army Corps of Engineer (USACE) Regional General Permit 3 (RGP 3) since 1977 to support the Suisun Marsh landowners' continued operations, maintenance, and enhancement of the managed wetlands. The RGP 3 provides a streamlined permitting procedure for Suisun Marsh landowners, allowing ongoing operations and maintenance of managed wetland infrastructure, water conveyance and control facilities, and levee systems. Under the RGP 3, SRCD is responsible for providing required reports to agencies and guidance to landowners. The landowners are responsible for ensuring all work that they (or their contractors undertake) is in accordance with the terms and conditions of the RGP 3 and companion environmental documents.



In 2014, SRCD obtained the USACE Letter of Permission (LOP) Dredging Permit for Suisun Marsh Exterior Levee Maintenance Activities. The LOP is a 10-year permit and allows up to 100,000 cubic yards per year of dredging for Suisun Marsh exterior levee maintenance.

In 2014, the 30-year Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP) and companion Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was completed. SRCD was pivotal in the completion of this 13-year process generating a stable regulatory environment and permitting process for the next 30 years in the Suisun Marsh.

The SMP provides an environmental approval of ongoing managed wetland activities under the RGP 3, in addition to the following:

- Allows issuance of the LOP levee maintenance dredging permit
- Streamlines environmental permitting for managed wetland enhancement projects
- Supports SRCD's assistance and technical support for the management of water and wetlands
- Provides a programmatic review permitting process of future tidal wetland restoration projects

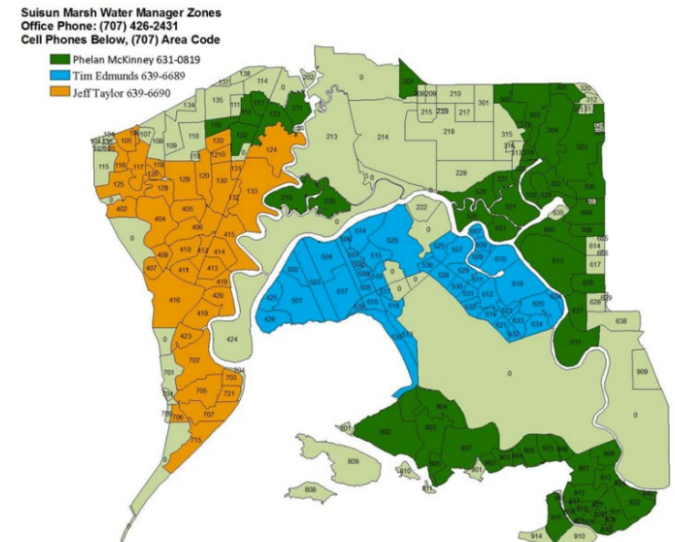


## Habitat Management and Technical Assistance

### A. Water Manager Program

The Water Manager Program provides full-time support for three SRCD biologists and half-time support for a supervisor to coordinate and improve water management practices on privately owned lands in the Suisun Marsh. This program is funded by the Department of Water Resources (DWR) and the U. S. Bureau of Reclamation (USBR) through the 2015 Suisun Marsh Preservation Agreement (SMPA) to provide the following activities:

- *Assist landowners in the implementation of the individual duck club management plans*
- *Promote and encourage wetland management activities to produce desired wildlife habitats*
- *Provide technical support to landowners on beneficial management techniques, water management, new scientific information, protection of sensitive species habitats, and implementation of best management practices*
- *Supervise and coordinate the SRCD Portable Pump Program*
- *Assist landowners in planning yearly maintenance and enhancement projects*
- *Assist landowners in completing the U. S. Army Corps Permit RGP 3 and LOP Applications*
- *Promote effective and efficient use of applied channel water to managed wetlands*
- *Monitor the operation of fish screen facilities and assist in routine maintenance*
- *Assist landowners in avoiding mosquito production*
- *Assist landowners in annual Diversion Reporting Requirements*



## B. Portable Pump Program

SRCD has 8 high capacity portable diesel pumps available to Suisun Marsh landowners to perform spring leach cycles and aid in the effective management and enhancement of marsh habitats. The pumps are rented to Suisun Marsh landowners at a subsidized hourly rate. The SRCD Water Managers oversee the requested pump distribution, installation, operation, fueling, and maintenance of the requested pumps.



### 8" Trash Pump by Pioneer

2018 Rental Rate: \$3/hour plus fuel

Pumps ~2,500-3,000 gpm

10-15 acre-feet per 24 hrs

Consumes ~1.9 gal./hr. of fuel\*\*

(\*\*Fuel consumption varies depending on site conditions and RPM rates)



### 12" Tow pump by Pumpmaster

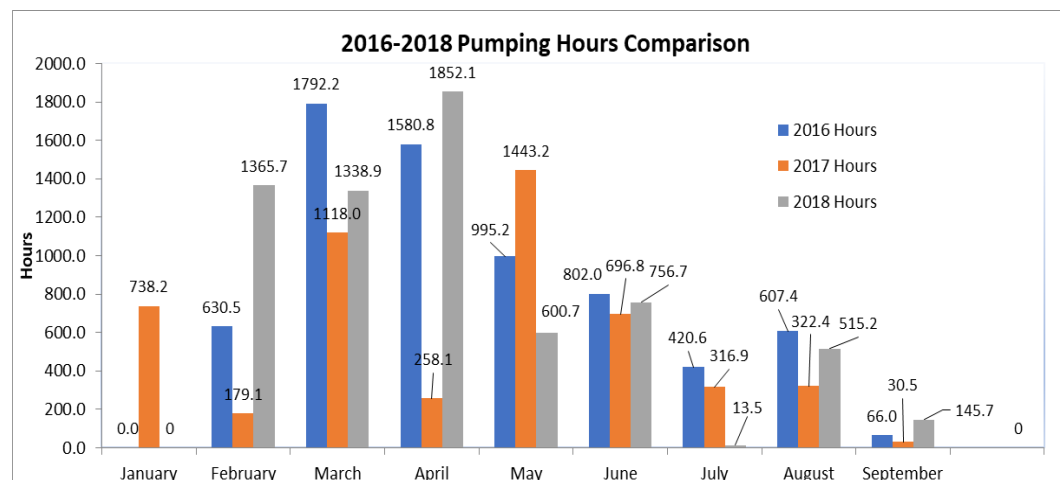
2018 Rental Rate: \$3/hour plus fuel

Pumps ~2,500-3,000 gpm

10-15 acre-feet per 24 hrs

Consumes ~1.2 gal./hr. of fuel\*\*

2018 Monthly Pump Use (All Pumps)	
<u>Month</u>	<u>2018 Hours</u>
January	0
February	1365.7
March	1338.9
April	1852.1
May	600.7
June	756.7
July	13.5
August	515.2
September	145.7
<b>Total</b>	<b>6588.5</b>

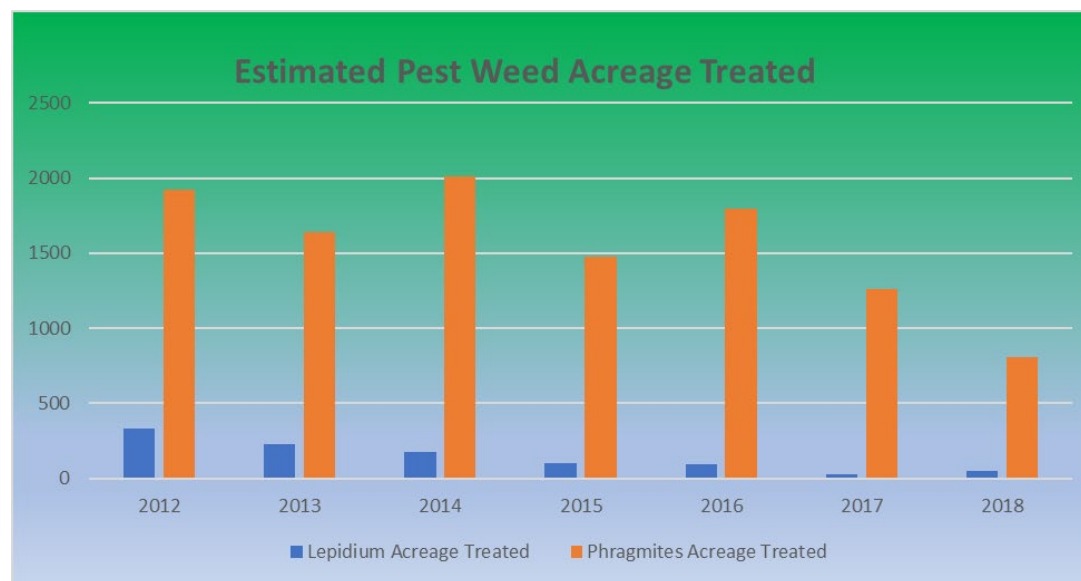


### C. Invasive Weed Control Program

The Suisun Marsh wetlands and uplands have been altered by highly invasive non-native plants that threaten the diversity of natural plant communities in the Suisun Marsh. These non-native invasive plant species can form dense monospecific stands in a wide variety of wetland and upland habitats. Non-native plants eventually out-compete native vegetation causing degradation and modification of existing Suisun Marsh habitats. The main goal of SRCD Pest Weed Control Program is to assist landowners in the control and removal of invasive weeds in the Suisun Marsh. SRCD offers technical assistance and advice on control methods, best management practices options, and post treatment habitat restoration.

Two species of particular concern in the Suisun Marsh are listed below, although there are other plants of emerging concern:

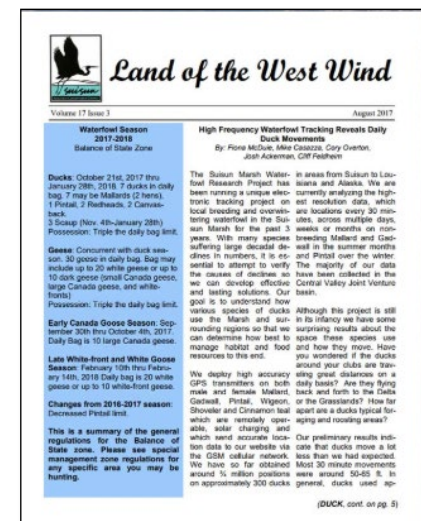
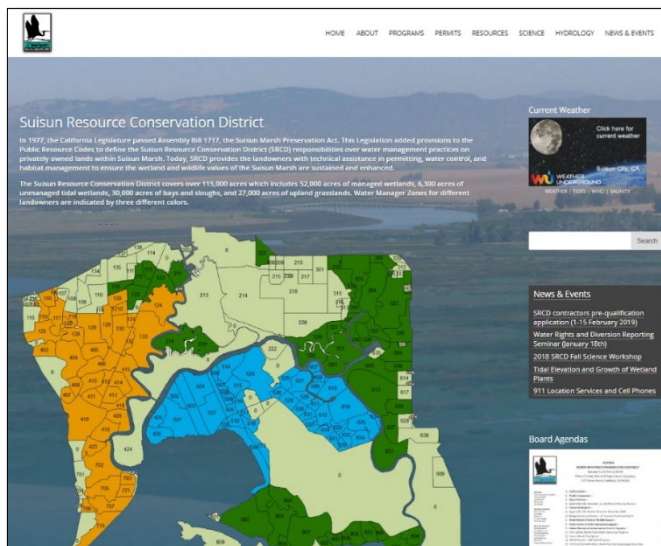
- Perennial Pepperweed (*Lepidium latifolium*): grows in large concentrations along levee edges and areas within the Suisun Marsh that are not flooded year around. The plant changes the soil composition which can eliminate other plants from emerging once it has established. Best time to spray is before plant sets seed and while its flowering (mid-April to May).
- Common Reed or Phragmites (*Phragmites australis*): grows in dense tall patches within semi-flooded and flooded areas in the Suisun Marsh. If left unmanaged, stands can consume entire pond areas and eliminate native and beneficial plants. Best time to spray is before seed set (mid-June to July).





## D. Landowner Outreach and Education

In January 2018, SRCD updated its website ([www.suisunrcd.org](http://www.suisunrcd.org)) including new information on resources, science, hydrology, and scientific news. We produced and shared our triennial newsletter – “Land of the West Wind”. We hosted our Annual Spring Landowner Workshop, special meetings, and a Fall Landowner Science Workshop. SRCD Staff and Water Managers conducted on-site meetings for habitat assessment and management advice. SRCD also performed routine mailing of permits, notifications, and programs to landowners in Suisun Marsh.



## E. Dean Witter-Harvey Sorensen Marshlands Project at Lower Joice Island

On September 13<sup>th</sup>, 2000, SRCD became the owner of the historic 1,330-acre Lower Joice Island Hunting Club located between Suisun and Montezuma Sloughs on the southwest side of the Suisun Marsh. SRCD has continued the long history of waterfowl hunting heritage on this property; it has been managed continuously as a duck club since before 1906. SRCD designated the property as the Dean Witter-Harvey Sorensen Marshlands Project, as part of the generous donation of the island and the establishment of a dedicated endowment to manage the island into the future. Today, the Marshlands Project supports SRCD's Vision and Mission of protecting and enhancing the Suisun Marsh wetland and wildlife resources by providing 239 acres dedicated as a conservation area in the Suisun Marsh for ongoing permitting needs. Lower Joice Island also provides SRCD staff a location to obtain practicable experience in assessing alternative management strategies for wetland management, operations, maintenance, invasive species control and an area for SRCD to conduct innovative scientific research and monitoring.

### Highlights:

- San Francisco State completed the 2<sup>nd</sup> year of a managed wetland zooplankton production study
- A drone flight was used to test imagery to detect *Lepidium*
- U.S. Geological Survey and UC Davis conducted waterfowl food sampling



## Managed Wetland Enhancement and Cost Share Support

SRCD worked with conservation partners including the California Waterfowl Association (CWA), Ducks Unlimited (DU), Department of Fish and Wildlife (DFW), UC Davis (UCD), and United States Geological Survey (USGS) to pursue grants and funding to promote the enhancement of Suisun Marsh managed wetland values and wildlife resources. Grant applications for enhancement of managed wetland habitats in 2018 included partnership proposals for the following projects:

### A. Preservation Agreement Implementation Fund

SRCD implements the SMPA and the Preservation Act Implementation (PAI) Fund which provides support from DWR and USBR for managed wetland infrastructure improvements. The SMPA objective is to improve wildlife habitats on Suisun Marsh managed wetland and also mitigates adverse effects on Suisun Marsh of the Central Valley Project (CVP), State Water Project (SWP), and a portion of other upstream diversions. The PAI program provides 75:25 cost-share funding for drainage infrastructure improvements on individual parcels, 50:50 for interior structures and drainage, and 75:25 for joint use facilities benefiting two or more properties.

In 2018, the interagency PAI review committee led by SRCD completed formal assessments of 42 proposed projects from landowners including 10 projects carried over from 2017 and 32 new projects proposed in 2018. DWR and USBR funding support was provided for 22 PAI 75:25 cost-share projects, 11 PAI 50:50 projects, and 9 joint-use 75:25 projects for wetland enhancement. Seven approved projects were not completed and will be carried over with the new 2019 applications.





## B. Managed Wetland Assessment

SRCD coordinated work with CWA and Resource Management Associates on assessment of managed wetland infrastructure. The goal was to identify priority projects in the Suisun Marsh region that could best improve managed wetland drainage through providing benefits for habitats and associated fish and wildlife species. The assessment was supported by grants from the Sacramento-San Joaquin Delta Conservancy and the DWR Delta Smelt Resiliency strategy. We invited landowners to participate through the SRCD website, mail, email correspondence, and in presentations at SRCD Landowner Workshops. SRCD staff made personal contacts to obtain permission and coordinate access for fieldwork, and nearly all responding clubs agree to participate.

In 2018, elevation surveys were completed on 409 drainage structures. This data was used to develop a hydrologic model to assess draining rates (in days) and water exchange (in acre-feet) for 130 wetland units. Modeling results indicated that 42% of wetlands drained to 1-foot below target water elevations relatively quickly (<5 days), 17% moderately (5-10 days), and 22% slowly (10-30 days). However, 19% failed to drain in 30 days. The modeling results allows us to objectively assess which infrastructure projects can best benefit Suisun Marsh managed wetland habitats with secondary benefits that may support zooplankton production, foraging Delta smelt, and support future adaptation to climate change.

### Calculator to predict changes with water control structure modifications in managed wetlands of Suisun Marsh.

Calculator to predict changes with water control structure modifications in managed wetlands of Suisun Marsh.

Club information for the selected club. Filled automatically from the "Wetland Club" button.

Club number: 320.76

Fill Club Information

Clear Club Information

Club Input Information

Shoot Elevation (ft, NAVD83): 2.2

Nearest Stage Monitoring Station Code: 805

Club Information

Number	Diameter (inches)	Culvert 1	Culvert 2	Culvert 3	Culvert 4	Culvert 5	Culvert 6	Culvert 7	Culvert 8	Culvert 9	Culvert 10
5	30	30	24	24	24	24	24	24	24	24	24
	Interior Invert Elevation (ft, NAVD83)	-0.98	-0.44	-1.13	-0.52	-1.33	-1.33	-1.33	-1.33	-1.33	-1.33
	Exterior Invert Elevation (ft, NAVD83)	-0.98	0.19	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage Restriction Factor (range 0-1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Intake Water During Circulation? (Y/N)	Y	N	N	N	N	N	N	N	N	N

Used to name Drainage Simulation results

Drainage Simulation Name: Baseline

Run Drainage Simulation

Clear All Drainage Results

Most current Drainage Simulation results

Time to Drain to 1 ft below Shoot Elevation: 18.6 days

Time to Drain to 1.5 ft below Shoot Elevation: - days

Time to Drain to 2 ft below Shoot Elevation: - days

Volume of Water Remaining after 2 weeks: 89.6 acre-feet

Volume of Water Remaining after 30 days: 36.2 acre-feet

Run drainage simulation and adds the results to the Drainage Plot tab

Clear all drainage results and simulations from this tab and the Drainage Plot tab

Used to name Circulation Simulation results

Circulation Simulation Name: Baseline

Run Circulation Simulation

Clear All Circulation Results

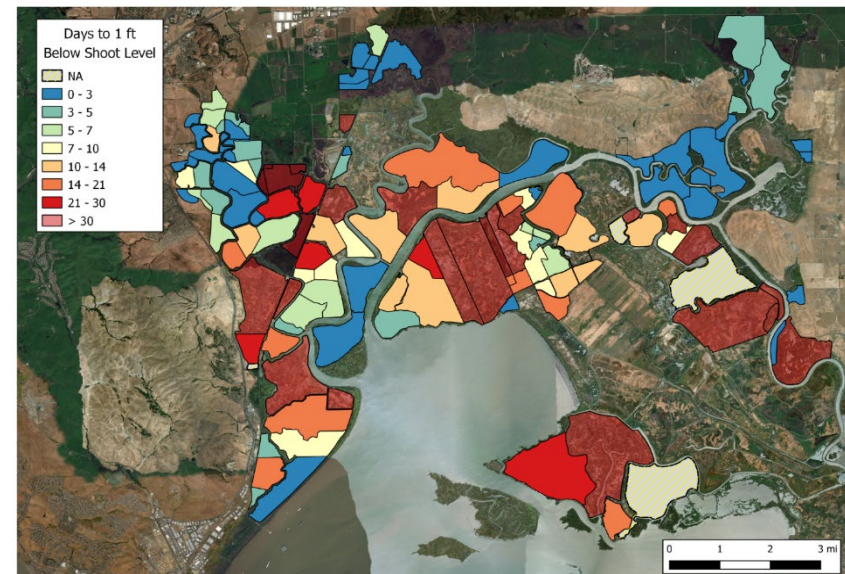
Most current Circulation Simulation results

Average Volume of Water Exchanged Daily: 18.7 acre-feet

% of Shoot Level Volume: 6.7

Run circulation simulation and adds the results to the Circulation Plot tab

Clear all circulation results and simulations from this tab and the Circulation Plot tab



### C. Just Add Water: A Science-based, Decision-support System to Maximize Wetland Habitat Management with Escalating Estuary Salinization

This study will address interactions between stressors, managed species, and communities by examining salinity in the Suisun Marsh. Fieldwork will be used to map soil salinities at different depths, to perform mesocosm studies to determine how leaching cycles change soil salinities, and to conduct greenhouse experiments and determine how salinity affects growth, productivity, and survival of target plants. The results will measure the salinity gradient in soils among and between managed wetlands and reference tidal marshes across regions. The results will be used to develop a Decision Support Tool (DST) to determine the most effective leaching cycles to enhance wetland habitats for foraging wildlife.

### D. Duck Diets and Food Availability during the Winter

USGS and UC Davis students are conducting field studies to determine the diet and availability of dabbling and diving ducks in Suisun Marsh. Their studies look at consumption or use of different seeds and invertebrates, as well as the availability of those food items. SRCD has been assisting the research efforts through coordination of access with landowners and outreach through landowner workshops and regular communications.



### F. Nesting Ducks and their Predators in Suisun Marsh

Suisun Marsh provides habitat for breeding mallards, gadwall, northern pintail, and cinnamon teal in the spring and summer. Raccoons and striped skunks consume duck eggs during the breeding season. This predation decreases the success (survival to hatching) of waterfowl nests. USGS has been leading studies on nesting waterfowl and their mammalian and avian predators to examine the most common predators of duck eggs. Through use of GPS transmitters and miniature cameras, the studies aim to better understand habitat use by the predators and the effects of their predation. SRCD supports these studies to provide guidance for landowners to manage their lands for the greatest productivity.

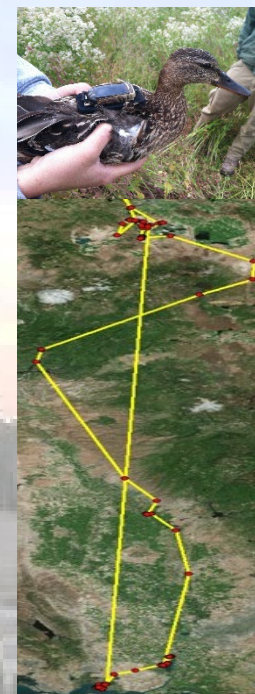


### E. Tracking Waterfowl Marked with Satellite Transmitters

USGS has been capturing and marking waterfowl in Suisun Marsh and other areas in the flyway to examine their movements during the non-breeding season, migration, and breeding season. Waterfowl are marked with cell-GPS transmitters that provide high frequency location data through cellular tower systems. SRCD provides support for administering funding for the work as well as support for coordination with landowners.

### G. Enhancing Public Use and Restoring Habitats at Belden's Landing

Belden's Landing is the primary boat launch in the heart of the Suisun Marsh. This project will restore the degraded marsh removing invasives and planting native flora, develop a site vision and boardwalk plan with the community, and improve existing facilities. A non-motorized launch will be added to reduce user conflicts as a Bay Area Water Trail trailhead. The project will be a unique partnership of the Solano County Parks, SRCD, and DFW.







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