

Suisun Resource Conservation District, 1963-2023: 60 Years of Conservation

1963

June 15 1963: Suisun Soil (later Resource) Conservation District was established.

1971

May 26 1971: SRCD's Annual Conservation Luncheon at Gibson Horseshoe Duck Club.

1977

Suisun Marsh Preservation Act (SMPA) empowered SRCD with the "...Primary local responsibility for regulating and improving water management practices on privately owned lands within the primary management area of Suisun Marsh"

1978

Water Quality Standards established for preferred marsh plants.

1986

Potrero Hill Landfill opened. Suisun Marsh suffer a major flooding event with a FEMA was used

1988

Suisun Marsh Salinity Control Gates and other DWR facilities including Morrow Island, Goodyear Outfall, and Roaring River completed

1994

Diversion intake restrictions set for salmon and delta smelt.

2000

SRCD accepts ownership and management of Lower Joice Island

2006

Potrero Hills Landfill expansion results in settlement with SRCD to support preservation, protection, and enhancement of Suisun Marsh

2015

SMPA Update funds \$5.7 millions for infrastructure through PAI programs managed by SRCD

2021

SRCD completes Individual Management Plans updates certified by BCDC

SRCD 60th Anniversary

2023



The Suisun Resource Conservation District (SRCD) works collaboratively with private landowners, local, state, and federal agencies and conservation organizations to meet the environmental and conservation needs of Suisun Marsh, Solano County, and the San Francisco Bay-Delta for future generations.

In 2023, SRCD is celebrating its 60th anniversary conserving the unique values of Suisun Marsh. Through the rest of the year, we will recognize this anniversary with stories of SRCD conservation efforts for Suisun Marsh and tales of the many people who helped make it a success.

"NOW, THEREFORE, IT IS HEREBY RESOLVED, ORDERED AND DECLARED that such petition for the organization of the SUISUN SOIL CONSERVATION DISTRICT be, and hereby is granted; that the name of the proposed district shall be SUISUN SOIL CONSERVATION DISTRICT"* *Changed to "RESOURCE" in 1970

Recorded at Request of:
County of Solano, June 14, 1963

"Perhaps the greatest accomplishment of the District to date is the intangible—the Suisun Marsh and farmlands now have a spokesman and a rallying point. Somebody cares, and everybody knows it."

Dr. Bill Coon, Board of Directors
1964 First Annual Report ¹

Land of the West Wind

Quarterly Newsletter
Suisun Resource Conservation District
2544 Grizzly Island Road
Suisun, CA 94585

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Steve Roerden
John Telfer
Dick Vanderkous

SRCD's public meetings are every second Wednesday of each month at 2PM at the

**Solano County Supervisors Chambers:
675 Texas Street
Fairfield, CA 94533**

SRCD represents private landowners of the Suisun Marsh at the Federal, State, and local levels. It's historic goal has been to achieve a water supply of adequate quality so that preferred wetland habitat values will be retained through appropriate management practices. With cooperation from landowners and various agencies, SRCD develops new programs aimed at protecting and improving the Suisun Marsh for future generations.



Summer Work Activities

It is safe to announce that Spring has sprung! The local mallards are pairing up and seeking upland nesting fields. With summer just a couple months away, it is a great time for Suisun Marsh landowners to plan their habitat management goals. The amount of rain in the past couple months has the 2023 Water Year (October 2022 -September 2023) on track to be the 3rd wettest year in history! The salinity levels in the marsh are < 5 mS/cm, and it is a great time to take advantage of the freshwater and use different SRCD programs as "management tools" to improve habitat conditions and capitalize on the wet year to prepare for future drought periods. Focusing on habitat goals will help to ensure the likelihood of good waterfowl seasons into the future.

Consider the options available for Suisun Marsh clubs:

Dredging

Dredging is an avenue to source sediments and maintain levees without losing elevation by grading down pond bottoms. Although the amount of useable material depends on the available sediment composition, the practice of dredging an area every 3 years or dredging different locations in 3-year cycles can sufficiently prepare club levees for wet seasons and king tides. Applications are due by April 30th 2023.

Pumping Program

Pumps can increase the speed of leach cycles to promote beneficial waterfowl plant communities. Leach cycles create low soil salinities that benefit important food resources for species such as dabbling ducks. Plants like bulrush need at least 3 drain cycles and 2 flood cycles for good growth. Pumps may be used to increase drainage speed. The SRCD Pumping Program is available to landowners to improve their water management

Spray Program

Weeds like Perennial Pepperweed and Russian Thistle threaten plant diversity and may crowd out the valuable food plants favored by waterfowl. Control of invasive weeds with herbicides will help to prevent spread. More desirable waterfowl plants like Fat Hen and Swamp Timothy will benefit from control, since the invasives are strong competitors.



Protecting Suisun Marsh Values

December 15, 2022
California Department of Water Resources
Attn: Delta Conveyance Office
P.O. Box 942836,
Sacramento, California 94236-0001
Subject: Suisun Resource Conservation District Comments on the Delta Conveyance Project and Draft Environmental Impact Report (DEIR)

January 26, 2023
Mr. Zachary Simmons
U.S. Army Corps of Engineers
Project Manager - Delta Conveyance Project
1325 J Street
Sacramento, CA, 95814-2922
Email to: DLR-FR-F430@usace.army.mil
Subject: Suisun Resource Conservation District Comments on the Delta Conveyance Project and Draft Environmental Impact Statement

SRCD regularly defends the unique ecological values of Suisun Marsh from projects that threaten to alter or degrade its habitats and communities. As a spokesperson for the Marsh, SRCD Executive Director Steven Chappell tries to stay ahead of proposals by providing detailed comment letters or seeking legal remedies to respond to proposed projects. Some recent projects that have concerned SRCD have included the newest proposal iteration to construct a Delta Conveyance Project, development projects in the secondary Marsh, and conversion of a swinging railroad bridge to a fixed structure limiting water access in the western Marsh. The Delta Conveyance Project to divert water to central and southern California has long threatened to alter the water quality in the Marsh ecosystem. Modeling indicates that it would dramatically increase salinity levels. The most recent Delta Conveyance Project plan has construction of a conveyance of a 40-mile long tunnel placed below the Delta with new diversions from the north Delta to expand current infrastructure of the State Water Project (SWP) operated by the Department of Water Resources (DWR).

[Protecting Suisun, Cont. on Pg. 6]



Turning Over Soil

—SRCD publication—

Benefits and Drawbacks of Discing Managed Wetlands

I had the opportunity to get my father out on a duck hunt in Suisun Marsh this year. With the Valley being bone dry, our family rice property was not an option. The morning of our hunt we talked with the landowner about where we would hunt. He mentioned a blind that previously did not get hunted much, but due to the discing that was done around it before season, it had become one of their more consistent shooters during the 2022/2023 season.

We settled in for the morning and waited for shooting light. Being sans retriever, I knew we had to shoot ducks in close and cross my fingers for dead birds. The first group swung over the box and my dad doubled on his first attempt. Being the young set of legs in the blind, I jumped out to retrieve the birds. As I got away from the blind one of the birds started to come to life, and I hastened my pace through a heavily disced area of the pond. As my speed increased, I rapidly was “getting over my skis” and before I knew it, I dropped into a deep hole and ended up face first into a Suisun Marsh bath. With water up my sleeves and down into my waders, I walked back to the blind (birds in hand) and waited for the chill of wet clothes to set in, realizing that I just experienced one of the main reasons landowners are hesitant to disc around their blinds. Thinking back to my childhood and all the times my father must have had to call a hunt early because I was cold, bored, hungry, or some combination of all three, I laughed a little bit knowing I had to stick it out for him. I persisted through the cold morning, and we finished the day with 2 limits of birds... and did the best on the club that day.

Discing is one of the more beneficial management tools we have in our arsenal for Suisun Marsh. It helps to reset the plant community (which becomes static around the five-year mark) in those areas and helps to expose the local seed bed to regerminate and show more open water on the property, as clubs flood up for duck season. Freshly disced areas of your pond also provide modified loafing areas that ducks tend to enjoy throughout the year, where they can get their bodies out of the water, keep their feet in it, and feel secure from predators in the wide-open disced area. The biggest drawbacks to discing areas of the managed wetlands has always been the difficulty of navigating through it and the loss of what is known as “elevation capital” or decreased height of the marsh surface. Walking through flooded uneven ground can be difficult and hard to deal with. This can be remedied by keeping the disc higher in the soil profile or disc over the same area twice to reduce the size of the dirt clods and cracks that might persist. The disturbance of the managed wetlands is limited on an annual basis to limit the potential for water quality issues and to reduce the impacts on pond elevation and the threatened and endangered species like the Salt Marsh Harvest Mouse. Freshly disturbed soils and vegetation can cause low dissolved oxygen during fall flood up and potentially impact the smaller slough channels in with low tidal circulation. Discing is a good practice that should be considered each year under annual maintenance and pond work. Discussing regiments with your water manager is a good way to select good areas for discing that fit the needs and concerns of each landowner. While falling into holes during duck season may be troubling, the benefits can far outweigh the perils of taking a Suisun Marsh bath.



Forage for Fowl

By Daniel J. Smith, UC Davis PhD graduate

Starting in 2016, our collaborative research team – comprised of researchers from the U. S. Geological Survey and students from UC Davis – sought to answer three questions about waterfowl foods in Suisun Marsh: (1) how much food for waterfowl is present, (2) how do environmental conditions and wetland management impact the production of foods needed by waterfowl, and (3) how do these food resources change over the winter? By answering these questions, we hoped to better understand how many dabbling ducks could be supported on available food resources present during the non-breeding season.

We focused on seeds from wetland plants, as three waterfowl diet studies (conducted in 1963, 2002, and 2018) confirmed that seeds are the primary food source for waterfowl during the fall and the winter in Suisun Marsh. We collected samples from 80 managed wetlands and 20 tidal marshes over two years to estimate the average abundance of seeds available to waterfowl. We found that the average seed density (often reported as pounds per acre) was 150 lbs/acre, or only a quarter of what is present in managed wetlands in the Central Valley. Lower seed densities in Suisun Marsh were not surprising, as salinity and other environmental factors are known to influence the growth and production of the common plants that wetland managers aim to encourage (watergrass, smartweed, swamp timothy).

We also found that tidal wetlands had similar densities of seeds as managed wetlands, but the types of seeds were very different. Seeds in managed wetlands were comprised mostly (>70%) of species ducks regularly consumed, while seeds in tidal marshes were predominantly from a single genus (*Schoenoplectus spp.*, commonly known as tule) which waterfowl rarely consume (Fig 1). Our next step was to determine what factors affected production of seeds to better understand how management influenced abundance of waterfowl foods.

We examined soil type, spring water salinity, wetland drainage speed, geographic region, disking, and overall management intensity. We found that total seed abundance was most strongly related to the geographic region of the marsh; wetlands in the northern Marsh and closer to the salinity control gates tended to contain more seeds. Other factors had a minor impact on total seed abundance but a large influence on the types of seeds present. More intensely managed wetlands were more likely to have seeds which waterfowl favored and were less likely to contain seeds from tule and cattail (*Typha*). Watergrass (*Echinochloa crus-galli*) never occurred in wetlands where the average salinity of water applied in spring was greater than 2.5 mS/cm. Finally, we examined how quickly waterfowl consumed seeds, and the rate at which seeds decomposed over the winter. We found that waterfowl responded to the clumped distribution of seeds due to wind and water dispersing seeds and concentrated foraging in seed-rich areas. In areas of high seed density, flocks of waterfowl were removing up to 16 pounds of seeds per acre per day. Given that the average density of seeds was 150 pounds per acre, waterfowl could easily consume all the seeds in a small area over a very short period of time.

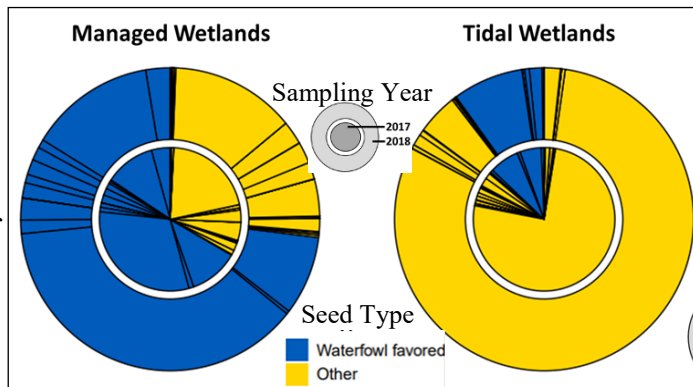


Fig.1: Difference in managed and tidal wetland seeds

[Forage for Fowl, Cont. on Pg. 7]

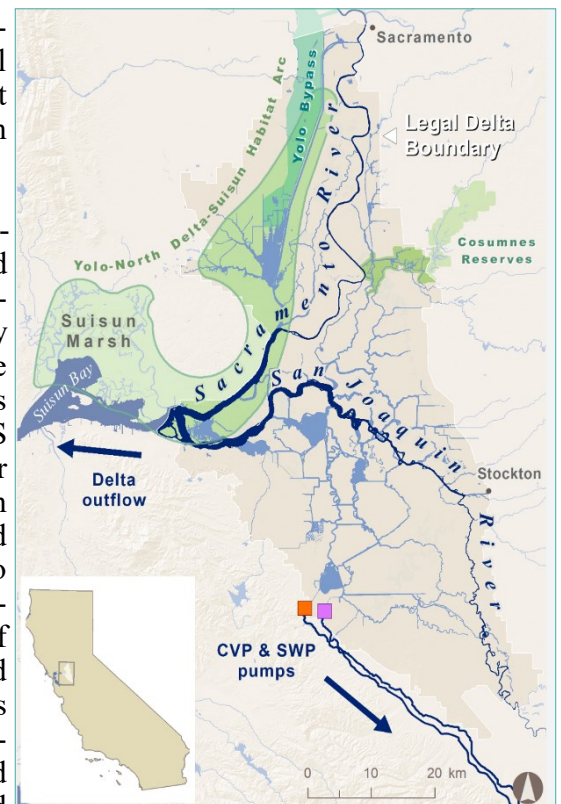


Conserving Suisun Marsh Values

— SRCD Publication —

Suisun Marsh's centralized location within the Bay-Delta estuary makes it an important component for waterfowl in the Pacific Flyway as well as for California's water supply systems. The Marsh's unique value in biodiversity, habitat, and waterways rank it among the highest wildlife habitats in the State. Agencies like U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NOAA Fisheries), California Department of Fish and Wildlife (CDFW), Department of Water Resources (DWR) and Suisun Resources Conservation District (SRCD) work together to ensure the wetland and wildlife values are sustained and protected. A variety of tasks like investments in research projects, landowner cost-share programs, public outreach, and enforcement of regulatory standards are designed to meet a common goal. SRCD was established in 1963 to support wetland management within the Suisun Marsh to simplify the relationship between governing agencies and the local landowners. The local landowners benefited, as well as other functions, because SRCD supported permitting for maintenance activities to produce desirable waterfowl habitat. The governing agencies benefited because they had a single point of communication for the maintained habitat on private lands in the Marsh which is a valuable resource for native and endangered species.

State-wide projects like the Central Valley Project (CVP) and the State Water Project (SWP) make up one of the world's largest water storage and transport systems; combined, they deliver clean water to 27 million Californians and support two-thirds of California's \$2.8 trillion economy by providing water to 7 of the top 10 agriculture counties. However, negative effects of projects like the CVP and SWP must be mitigated, and agencies are obligated to uphold standards set in place under the USFWS and NWFS "Biological Opinions" (BOs). BOs are documents that specify whether or not actions are likely to jeopardize existence of listed species or result in the destruction or adverse modification of critical habitat. BOs suggested that total acreage of tidal wetlands in the estuary should be increased to mitigate for the adverse effects from the CVP and SWP on native fish species. Increasing tidal habitat will make new areas with greater allocations of food and habitat resources available and help the recovery of endangered species such as Green Sturgeon, Chinook Salmon, and Delta Smelt. Factors such as water temperature, turbidity, salinity, sediment placement, and dissolved oxygen levels are influenced by the CVP and SWP diversions, and these factors may influence the health of the many native and endangered species in the estuary. DWR has a goal to restore 40,000 acres of tidal wetlands in the Bay-Delta region, and 5,000-7,000 acres must be within the Marsh.



Overview of the Suisun Marsh, CVP and SWP

In the Marsh, DWR has been acquiring properties for restoration since the early 2000s. Restoring them into tidal wetland habitats requires removing water control structures and opening levees to tidal waters. The first property acquired in Suisun Marsh was Blacklock Duck Club (#604) in 2006. The 263-acre property is located on the east side of the marsh, and as the first property to be turned over to tidal habitat, it served as a pilot project for DWR to develop restoration methods. For example, an accidental breach occurred early in the project, and DWR had to adjust the planning for the changes caused by the unexpected breach.

[Protecting Suisun, Cont. from Pg. 2]

Solano Supervisor Mitch Mashburn also stated his opposition to the Delta Conveyance Project, noting that Solano County will see higher rates of traffic and over 300,000 truck loads on county roads during the proposed 16 years of construction. Finally, Chappell noted that the proposal did not meet Marsh standard water quality requirements, and the proponents failed to use the proper methods to research the outcomes of changes in salinity. The modeling efforts only looked at monthly rather than daily salinity averages and omitted data from 5 of the 14 salinity monitoring stations in the Marsh.



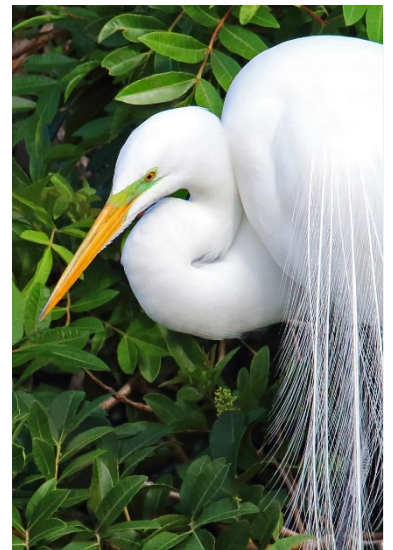
Chappell also sent formal SRCD comment letters about developments proposed for the Secondary Marsh indicating that the areas are protected for conservation and that any loss of wetlands will require extensive mitigation. Finally, converting the swing bridge on the railroad tracks crossing Peytonia Slough would limit barge access for transport of equipment to landowners upstream, and the Coast Guard agreed with the objection letter sent by SRCD and denied the project request.

Grizzly Island Wildlife Updates

- Bradmoor and Arnold Slough kayak trails are open. Signage for those trails along with minor updates at Belden’s Landing will occur before the summer.
- The small deck fire at the Island Slough fishing access at the “Red Barn” on the night of October 26th was a disappointing loss.
- Pig hunts on Joice Island kicked off in the month of March, with 4 juniors harvesting 4 pigs during the first harvest.
- Thirty elk were relocated to GIWA from the San Luis population. This has been the 2nd addition since the population was first planted in 1960.
- February signaled the end of a very successful waterfowl season. The yearly average was 3-4 birds per hunter, and the top 5 birds were northern shovelers, American wigeon, green-winged teal, northern pintails, and bufflehead.
- New look with new rules: following the updates across the wildlife area about breeding ducks, staff and local game wardens have agreed to enforce a larger closed zone area by including the upland fields. Please stay out the upland fields from February until late July.

Great Egret— *Ardea albus*

- ♣ With a 5-foot wingspan, this large white bird flies across the gray, foggy marsh at speeds of 25 mph with a wingbeat of just 2 flaps per second.
- ♣ This steady predator patiently stocks prey in shallow water banks and dirt tunnels to spear unwitting fish or small rodents. It uses a quick release mechanism with its “s”-shaped neck to hunt; a unique adaption that is still not fully understood.
- ♣ As part of the family of wading species (Ardeidae) which includes herons and bitterns, the great egret can be distinguished from other wading birds with their unique characteristic of flying with their neck retracted.
- ♣ Its elegant and regal presence landed the bird as a standing icon for the National Audubon Society, the oldest environmental organization in North America
- ♣ The species has decorative, brilliant, white long plumage with gossamer wisps called aigrettes. The aigrettes are fashionable, so much so that during the 1800s, plume trade for hats skyrocketed and decimated the population. Its calculated that nearly 130,000 egrets were killed in a 9-month period to satisfy demands in 1886.



[Forage for Fowl, Cont. from Pg. 4]

In contrast, loss of seeds due to decomposition was much smaller and varied by species; in flooded wetlands, watergrass lost ~25% of its mass over 100 days, while swamp timothy lost ~18%, and alkali bulrush lost ~5% (Fig 2).

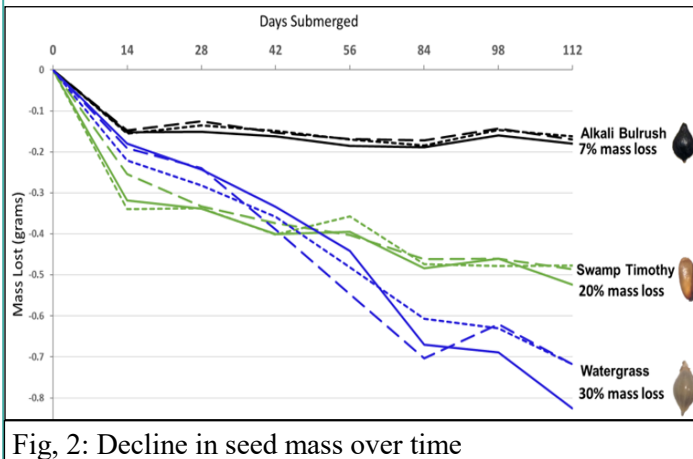


Fig. 2: Decline in seed mass over time

In summary, our data indicated that the average abundance of seeds in Suisun Marsh is low, yet some very productive areas exist. We've also demonstrated that seed density within a seasonal wetland is correlated with location, but management can increase the presence of seeds which waterfowl prefer to eat, regardless of location. As we combine our assessments of wetland habitat with studies on waterfowl body condition and habitat selection, we will be able to provide a robust estimate of the number of waterfowl that can be supported by Suisun Marsh over the winter. Additionally, we will examine how factors such as drought, habitat modifications, and changes to wetland management could influence waterfowl populations in the future.

Delta Smelt Intake Gate Restriction in Effect

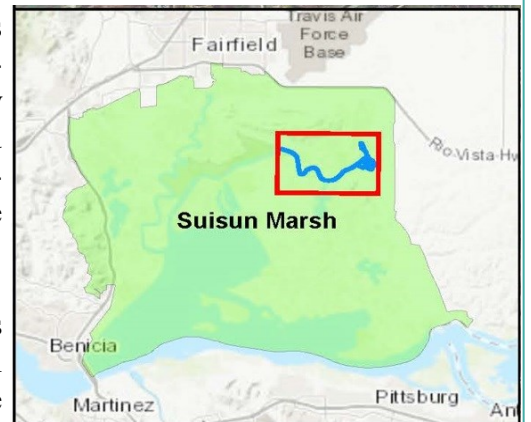
Diversions along Montezuma Slough, Suisun Slough, Cutoff Slough, Goodyear Slough, Honker Bay, Grizzly Bay, and Suisun Bay are restricted to less than 20% of capacity until May 31, 2023



[Conserving Suisun Marsh Values, Cont. from Pg. 5]

The outcome of the accidental breach resulted in permit changes to the design of the original restoration plan to adjust for effects on native species. DWR is responsible for monitoring changes in tidal channel formation and for funding research studies examining effects of factors such as sedimentation rates, emergent vegetation, invasive plant species, and hydrologic changes. The most recent restoration project was completed in September 2022 on the Wildwing Duck Club (#330), Overlook Club (#322) and Flying D (#329). The combined properties make up to 754 acres on Bradmoor Island adjacent to Potrero Hills. After acquisition in 2012, the restoration project opened the island up to Nurse Slough and Denverton Slough at a cost about \$12.5 million dollars.

Blacklock and Bradmoor Island are among the many properties DWR has selected for restoration to benefit native fishes. A few other examples of wetlands DWR has selected for restoration include Decker Island and Liberty Cut, all of which are near Rio Vista within 50 miles of Grizzly Bay and Montezuma Slough. DWR has proposed as much as \$9 billion dollars in restoration projects in the upper estuary, many of which were not productive wetlands prior to restoration.



Location of Nurse Slough area with DWR tidal restoration sites

However, in Suisun Marsh, Blacklock and the other clubs were managed as productive duck clubs in the Marsh for decades. Thus, the values of a tidal restoration site are substituting the values of a managed wetland site, yet the overall benefits are not well defined for either of these types of wetlands. There are limited studies that have compared the ecosystem services offered by these two types of wetlands. For tidal restoration sites, opening areas to adjacent sloughs may alter tidal flows, salinity levels, and turbidity that may affect fish and waterfowl behavior. In addition, one of the major concerns of tidal restoration it may result in introduction and expansion of aggressive invasive species such as Phragmites or Russian Thistle. We need to encourage support for more applied studies, such as those seeking to understand how managed wetlands drains provide zooplankton for fish and birds, to better understand how enhancement of existing managed wetlands will benefit the Marsh over the long term, since the majority (40,000-50,000 acres) of the region is classified as managed wetlands.

Land Of The West Wind
SRC D Newsletter

2544 Grizzly Island Road
Suisun CA 94585

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Upcoming Events & Reminders

- 2023 Dredging Program applications are being accepted! Now until April 30, 2023.
Annual dredging work season window is August 1 through November 30th of 2023.
- Spring Burning Season is now closed!
Fall Burning season will open at the end of August.
- Delta Smelt Intake Gate Restrictions are in effect! Now until May 31, 2023.
Diversion restriction is not to exceed 20% open
- Preservation Agreement Implementation (PAI) applications are being accepted! Now until June 30, 2023.
Submitted applications from March will receive an update soon. Contact your water manager.
- Suisun Conservation Fund's 19th Annual Shoot and Social Fundraiser is on July 28th 2023!
Save the Date! All proceeds benefit SRC D and landowners!
- CA Ridgeway Rail restrictions on exterior levee activities are in effect. Now until August 31, 2023.
Areas affected are Western Grizzly Bay, Suisun Slough, Lower Goodyear Slough and Cutoff Slough
- Club Contact List Updates Request
Individuals interested in receiving SRC D general mail or landowners interested in updating their club contact list, please email mguzman@suisunrcd.org