



Land of the West Wind

Volume 21 Issue 2

March 2021

What is the California Drought Response?

California's reservoir system can help insulate the state from seasonal variability in weather conditions. Water is stored in wet years and the subsequent controlled releases from dams in northern California have a significant impact on the salinity conditions we see downstream in the Delta and in Suisun Marsh. Unfortunately for Suisun Marsh Duck clubs, we have had well below average rainfall this year in California for the last several years, and the 2021 water year looks to be an extension of drought conditions. To mitigate some of the worst effects of drought condition years, the 2015 Suisun Marsh Preservation Agreement (SMPA) has provisions for the California Department of Water Resources and U.S. Bureau of Reclamation to fund a **Drought Response Program**.

How do we know if the drought response will kick in?

The determination is made using SMPA criterion of the prior water year's final Water Year Type and a forecast of the current Water Year Type. The forecast of the current Water Year Type is a preliminary determination made by DWR on the first of February, March, April, and May. It is published in DWR Bulletin 120 which is issued four times each year during the second week of February, March, April, and May. It is also posted on DWR's Water Supply Index webpage.

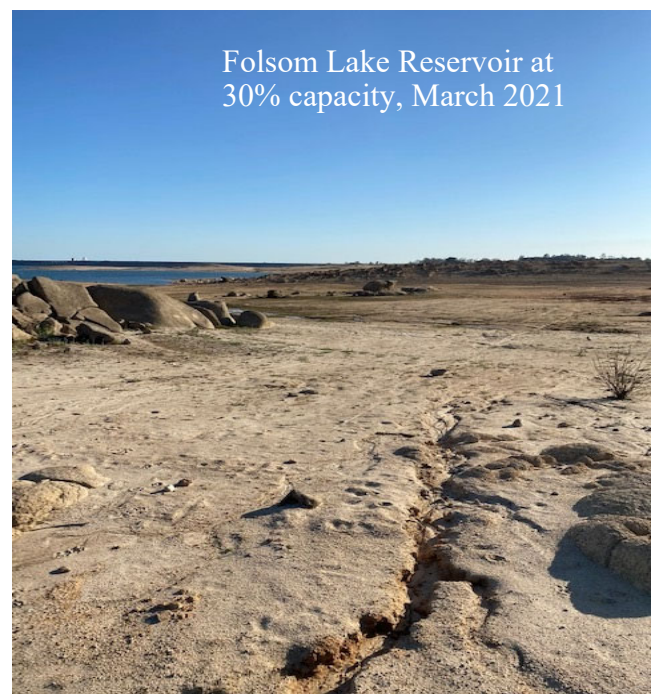
What's up with our current water year?

The preliminary Water Year 2020 (October 2019 to September 2020) was classified as Dry, and February's Forecast for Water Year 2021 (October 2020 to September 2021) was Critical. Based on these factors, we are now in a **Deficiency Period** for salinity standards, and the earliest it could end would be in the spring of 2023. During a Deficiency Period, the salinity standards in the Western Marsh Stations (S-21 and S-42) are higher than during normal circumstances (see Table of Salinity Standards below).

Month	Normal	During Deficiency Period
December	15.5	15.6
January	12.5	15.6
February	8.0	15.6
March	8.0	15.6
April	11.0	14.0
May	11.0	12.5

Drought Response Fund in 2021

The drought response funding is allocated to the areas in the marsh that are most affected by the increased salinities during Drought Periods. In Suisun, this is almost exclusively for the southwestern marsh region. A determination of the extent of affected areas will be released after May of this year.



Folsom Lake Reservoir at 30% capacity, March 2021

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Quarterly newsletter of the Suisun
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SRCD's public meetings 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 represents private landowners of the Suisun Marsh at the Federal, State, and local levels. Its 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. Through cooperation with landowners and various agencies, SRCD seeks to develop new programs aimed at protecting and improving the Suisun Marsh for future generations.

SRCD UPDATE

Suisun Resource Conservation District Water Managers

The Portable Pump Program continues to aid and enhance marsh habitats. SRCD has 9 twelve-inch pumps that are available for draining operations (leach cycles) on individual owner-ships and state-owned lands.

We have had yet another dry winter and are entering a second year of drought conditions. Coming as no surprise to managers, salinity conditions in Suisun Marsh continue to rise quickly. More information on current salinity levels are listed on page 7.

The Lepidium (Pepperweed) Spray Program

continues this year. If you have problems with this troublesome invasive plant, you may purchase the control chemical *Telar*, a broad-leaf selective herbicide widely used to treat *Lepidium*. You may obtain Telar from SRCD or contact SRCD to arrange a certified applicator crew to spray your property. Hiring a spray crew to treat your club costs roughly \$200 per acre. Unfortunately, there is no cost share available for the 2021.

If you have *Lepidium* in areas that are difficult to access or treat, SRCD is continuing to test alternative treatments in 2021 including treatment with a spray-drone. Contact Operations Manager John Takekawa (707-425-9302 x 2) for more information.

The Phragmites Spray Program will begin in mid April. SRCD will send a program letter to the primary contacts for each club. If you wish to make a chemical order, please contact: Tim Edmunds at tel: (707) 426-2431 ext. 302, cell: (707) 639-6689, or email: tedmunds@suisunrcd.org

The 2021 Preservation Agreement Implementation (PAI) Cost-Share Program will not be taking any new applications this year. Projects that were approved in 2020 and were carried over to this year will be cost-shared, but there will be **no funding for new PAI applications in 2021.**

Due to state budget constraints associated with the COVID-19 pandemic, DWR has determined it will not be able to fund new 2021 PAI projects. Please contact your Water Manager or John Takekawa (jtakekawa@suisunrcd.org; 707-425-9302 x2) to verify if you have an approved carryover project and to submit the required project agreements, permitting, and approvals.



Summer wetland availability and salinity concentrations for ducklings

Josh Ackerman, Carley Schacter, and Sarah Peterson

U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station

During the spring and summer, ducks need wetlands in close proximity (<1 mile) to upland nesting habitats for nest breaks from incubation and for brood-rearing of ducklings after hatch. However, many of the seasonal wetlands flooded for the hunting season are dry by the time ducklings are hatching in May through mid-July.

Because of the importance of summer wetlands for breeding waterfowl, USGS, partnered with Department of Water Resources, Department of Fish and Wildlife, Suisun Resource Conservation District, and many private duck hunting clubs to examine and map the amount of available water on Grizzly Island with satellite imagery. We also sampled surface water salinity during 3-time periods (April, May, and July) from 2016 to 2019.

Our initial findings (Schacter et al. 2021) suggested that flooded wetland habitats decreased from April to July by 73-86% each year (see **Fig. 1**). By July, few wetlands remained flooded, and most of those had surface water salinity concentrations high enough to potentially impair growth and survival of young ducklings. Salinities as low as 2 parts per thousand ($\sim 3.6 \text{ mS cm}^{-1}$) can impair duckling growth and influence behavior, and death of young ducklings can occur above 9 ppt ($\sim 4.8 \text{ mS cm}^{-1}$; Mitcham and Wobeser 1988, Barnes and Nudds 1991).

The majority (64-100% each year) of wetlands had water salinities above levels known to impair ducklings (>2 ppt), and salinities for up to 42% of the wetlands were above levels associated with duckling mortality (>9 ppt). In May of the driest study year (2016), only 0.5 km^2 of low salinity water (<2 ppt) was available to ducklings on Grizzly Island compared to 2.6 km^2 in May of the wettest year (2017). Private duck hunting clubs were important providers of summer water and consistently had a greater percentage of flooded habitat than publicly owned wetlands.

Local duck production is important for the fall flight with an estimated 60% of mallard and 49% of gadwall harvested in California originating on California's breeding grounds (De Sobrino et al. 2017). California waterfowl populations might benefit from wetland management practices that add fresher water into seasonal wetlands for young ducklings during peak production in May. Retaining water remains helpful through July, even if that water has higher salinities, because older ducklings can tolerate higher levels. We are grateful to all the landowners who provided access for water sampling during this study.

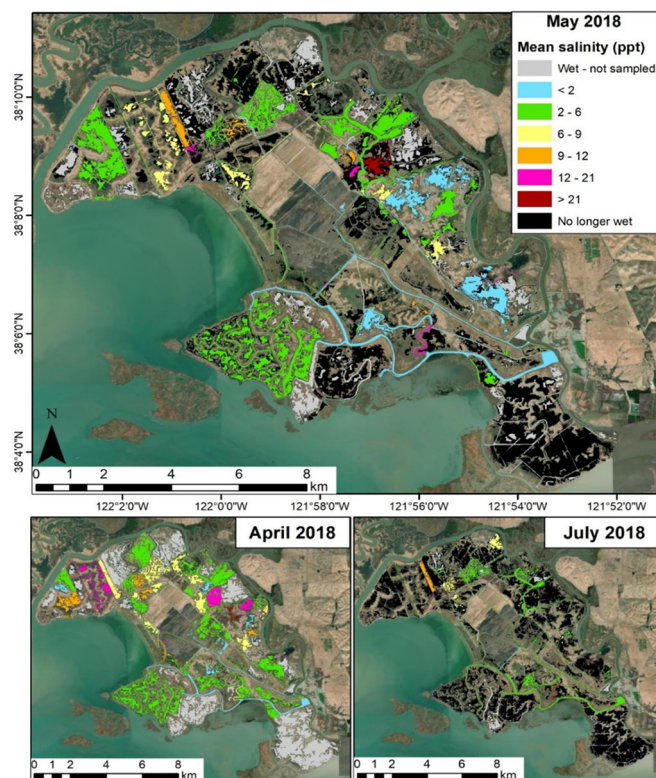


Fig. 1. Seasonal extent of water in wetlands and ditches and mean salinity concentration of sampled bodies of water at Grizzly Island within Suisun Marsh, California (Schacter et al. 2021). During a relatively dry year in 2018, areas in black were wet earlier in the breeding season (April or May) but dried up later in the season (July).

References:

- Barnes, G. G., and T. D. Nudds. 1991. Salt tolerance in American black ducks, mallards, and their F1-hybrids. *The Auk* 108:89–98.
- De Sobrino, C. N., C. L. Feldheim, and T. W. Arnold. 2017. Distribution and derivation of dabbling duck harvests in the Pacific Flyway. *California Fish and Game* 103:118–137.
- Mitcham, S. A., and G. Wobeser. 1988b. Toxic effects of natural saline waters on mallard ducklings. *Journal of Wildlife Diseases* 24:45–50.
- Schacter, C, SH Peterson, MP Herzog, CA Hartman, ML Casazza, and JT Ackerman. 2021. Water availability and salinity concentrations for breeding waterfowl in Suisun Marsh, California. *San Francisco Estuary and Watershed Science*, in revision.

Russian Thistle, an Increasing Problem in Suisun Marsh

By Tim Edmunds, SRCD Water Manager

Battling invasive plant species and nuisance weeds is a struggle that everyone in Suisun Marsh is well acquainted with. For years, *Lepidium*, cocklebur, aster, and especially *Phragmites* have been problems dealt with through management practices that result in attrition or eradication of some patches. However, these plants remain problematic in certain areas of the marsh, and control of these species will most likely always be an ongoing battle. Unfortunately, over the last few years we have seen a new combatant enter the vegetative battle royal. Russian Thistle (*Salsola tragus*) has quickly become a new threat in the southern, eastern, and central marsh.

What is Russian Thistle?

Russian Thistle is commonly known as tumbleweed. It is a branched annual herb with a substantial taproot and, unfortunately, abundant seed production. Most commonly, it has been found in disturbed and semiarid agricultural areas. In prior years, you may have seen it along highways or in rangelands, but now, you are able to spot it on the drive to most duck clubs in the Marsh. Russian Thistle can take over both high ground and low spots in a pond, outcompeting more beneficial waterfowl food plant species and producing spikey ground cover that is difficult to walk through. It can clog ditches, preventing adequate water flow and stopping boats from being able to reach blinds. It has been observed to grow in pickleweed-dominated ponds as well as in disturbed areas such as levee backslopes.

Russian Thistle flowers in the summer to the early fall and sets its seeds in the fall and then senesces. At that point, the main stem of the Russian Thistle break off at ground level, allowing the plants to disperse seeds as they tumble with the wind. Most seeds germinate the next spring, but seeds can be viable in the soil seed bank for up to 3 years.

What are Options for Control?

Control of Russian Thistle can be difficult due to its abundant seed production and its impressive ability to disperse its seeds. Because Russian Thistle is a relatively new problem, appearing sometime in 2013 but proliferating significantly since 2018, there are not yet tried and true methods for control specifically tested in Suisun Marsh.



Tumbleweed, "Russian thistle" caught on a barbed wire fence.



What are Options for Non-Chemical Control?

Non-chemical control such as pulling, cutting, and disking can be effective, but are dependent on the correct seasonal timing. Russian Thistle plants can be pulled out or hoed just below ground level before seed set which is most effective for small infestations. Mowing older plants tends to cause the plants to grow lower, but repeated mowing may improve control. Mowing just before flower maturation has worked as a control practice in some cases, but it will need more testing in the Marsh before becoming a recommended treatment. Mowing after seed set (late summer) will simply disperse the seed. Tillage will control both seedlings and larger plants, but to control an infestation, cultivation must be repeated until the short-lived soil seed bank (3 years) becomes depleted. However, tillage increases disturbance which favors Russian Thistle germination and establishment. Keeping ponds flooded and the immature thistle plants inundated is effective, but keeping ponds flooded comes with drawbacks and may not be right for all scenarios.

Chemical Control

Also, there are a few different chemicals that may work to control Russian Thistle before it sprouts (preemergent) or after it sprouts (post emergent). UC Davis has published a weed report on Russian Thistle at: <https://wric.ucdavis.edu/publications/pubs.htm>, and a link to this publication may be found on the SRCD website. This publication lists chemicals used to control Russian Thistle as well as the rate used and timing of application. Two of the chemicals in the publication that have been reported to work well are Garlon 3A and Telar XP. Garlon 3A is a post emergent chemical and Telar XP is a preemergent chemical.

What Methods of Control should be Avoided?

Mowing after seed set will simply disperse the seed. It is for this reason that mowing in the late summer and the early fall is not recommended. **Avoid mowing in the fall.** Most treatments work better earlier in the year before the plant has had time to grow and become large and tough. For example, hand pulling is relatively easy in the spring but almost impossible once the plant has become large and spiky.

SRCD Board Public Hearing on April 14, 2021 at 10:00 AM Individual Ownership Adaptive Habitat Management Plan Updates

Notice is given that the Suisun Resource Conservation District Board of Directors will hold a special public hearing on April 14, 2021 at 10:00 AM regarding an Amendment to the SRCD's component of the Suisun Marsh Local Protection Program (LPP). The hearing will be conducted in accordance with 14 CCR § 11210(d). It will be held online through Zoom at URL: <https://us02web.zoom.us/j/84674081525> or by dialing: 1-669-900-6833 and entering code: 84674081525#.

SRCD Staff will recommend that the SRCD Board authorize revisions to each of the 120 existing private managed wetland water management programs and update them as Individual Ownership Adaptive Habitat Management Plans (Plans). The Plans identify multiple water management program options and each private owner's water management infrastructure in the Suisun Marsh primary management area. This will be the first update of these plans since they were first adopted in the 1980s.

A draft Plan, template supporting documentation, and appendices are available to review on the SRCD's website: <https://suisunrcd.org/individual-management-plan-updates/>.



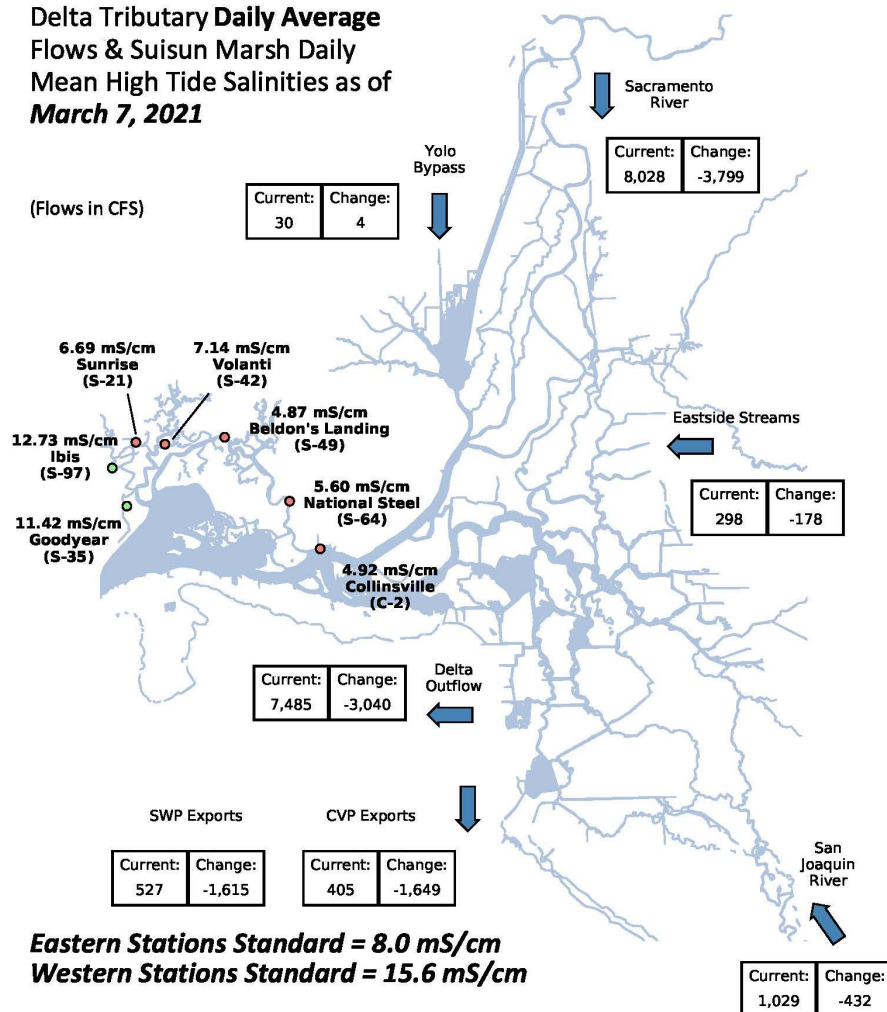
**SUISUN RESOURCE
CONSERVATION DISTRICT'S
SPRING ANNUAL LANDOWNER WORKSHOP**

April 21th, 2021

Zoom Meeting Link: <https://us02web.zoom.us/j/83323575651>

9:00 to 9:05	Welcome – Tony Vaccarella, President, SRCD Board of Directors
9:05 to 9:15	SRCD Local Protection Program and Individual Management Plan Updates – Steve Chappell and Jesirae Collins, SRCD
9:15 to 9:25	2021 Preservation Act Implementation and Drought Response Status – John Takekawa and Steve Chappell, SRCD
9:20 to 9:30	2021 USACE RGP #3, LOP, and BCDC Marsh Development Permit – Jeff Taylor and Steve Chappell, SRCD
9:30 to 9:45	Sensitive Species Permit Requirements and Training (Jeff Taylor, SRCD and Sarah Estrella, DFW)
9:45 to 9:55	SRCD Water Managers and Pump Program – Phelan McKinney, SRCD
9:55 to 10:05	Essential Fish Screen Update – Brett Williams, DU
10:05 to 10:20	Invasive Plant Update – Russian Thistle – Tim Edmunds, SRCD; Kent Hansen, Goodyear Land Company, and Randy Mager, DWR
10:20 to 10:30	2021 Legislation Update – Bill Gaines, Gaines & Associates
10:30 to 10:40	Break (10 min)
10:45 to 10:55	Delta National Heritage Area – Blake Roberts, Delta Protection Commission
10:55 to 11:05	Wings Landing Tidal Restoration – Richard Skip Moss, Western Land Group
11:05 to 11:15	Hill Slough Tidal Restoration – Sarah Estrella, DWR
11:15 to 11:25	DWR Bradmoor Tidal Restoration – Elaine Jeu, DWR
11:25 to 11:35	Tracking Wintering Waterfowl in Suisun Marsh – Austen Lorenz, USGS
11:35 to 11:45	Waterfowl Use of Tidal and Non-Tidal Wetlands – Mike Casazza, USGS
11:45 to 11:55	Spring and Summer Water Availability on Grizzly Island and Implications for Breeding Waterfowl – Sarah Peterson et al., USGS
11:55 to 12:00	Closing Comments and Adjourn – Steve Chappell, SRCD

**Delta Tributary Daily Average
Flows & Suisun Marsh Daily
Mean High Tide Salinities as of
March 7, 2021**



Water Salinity Conditions

By SRCD Water Managers

As we enter yet another low precipitation year, salinities in Suisun Marsh are high and are likely to rise. Goodyear Slough Station has already hit salinities as high as 17 mS/cm in March.

For information on current salinities around the Suisun Marsh and near your duck club, check out the DWR daily salinity readings at the monitoring and compliance stations which are posted on the SRCD web-site at: <https://suisunrcd.org/hydrology/>.

Keep salinity levels in mind as you plan irrigations, salt leaching flushes, and other moist soil management techniques. Salinity is a crucial component for the success of key food plants for waterfowl. Late summer water with low salinity may not be available in many areas of the marsh this year, and drying out early is a good option to prevent high soil salinities. The SRCD Portable Pump program can help!

For all flushes and flood cycles, remember to work around the Salmon and Smelt Diversion Restrictions. The Smelt Restriction will remain in place until May 31st.

Landowner Diversion Restriction Reminder!

The Spring Delta Smelt Unscreened Diversion Restriction is in effect from April 1st to May 31st. Landowners are prohibited from opening unscreened diversions more than 20%. The closure affects areas of determined critical smelt habitat, which include:

- Montezuma Slough
- Suisun Slough (From downstream of confluence with Boynton Slough to Grizzly Bay)
- Cutoff Slough including 1st & 2nd Mallard Branch and Sprig Branch Sloughs
- Honker, Grizzly, and Suisun Bays
- Goodyear Slough

SRCD will be checking all intake gates in the Delta Smelt restriction areas by boat during the monitoring period. Intake gate closure measurements collected during past monitoring periods will be used to ensure compliance during this period.

Land Of The West Wind
SRCD Newsletter

2544 Grizzly Island Road
Suisun CA 94585

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Water Reporting Reminder!

Remember to fill out the diversion reporting for last year (2020). The deadline to report your diversion is July 1, 2021. To file your diversion report, go to <https://rms.waterboards.ca.gov> and login with your Water Rights ID and Password. Logins and passwords are included with the letter that was mailed to you by the California Water Board. If you have questions on how to file, SRCD Water Managers are happy to help you.

Missing your Diversion ID and/or Password? Contact the Office of the Delta Watermaster at the State Water Resources Control Board: Telephone: (916) 319-8264.

Contact your water managers for assistance with diversion reporting.

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