



# Land of the West Wind

Volume 21 Issue 2

June 2021

## Drought Crisis at Lower Klamath

*Based on the Natural Resources Conservation Service's April 1, 2021 forecast for Water Year 2021 inflows to Upper Klamath Lake and the provisions of the 2021 Temporary Operations Plan, Reclamation is making an initial minimum Project allocation of 33,000 acre-feet. “*

### **- Bureau of Reclamation 2020 Press Release**

- The 33,000 acre-feet is only 6% of the required amount of water, according to the Klamath Water Users Association
- An estimated 400,000 acre-feet is needed for agricultural use in the Klamath Region alone.
- There is no water allocation for the Lower Klamath or Tule Lake National Wildlife Refuges which suffered a devastating botulism outbreak last summer that killed more than 60,000 ducks, geese, and shorebirds.

For the waterfowl that rely on Klamath Basin wetlands, things are looking extremely dire.

*"When we look at the basin as a whole, we see that there's not really an ecosystem perspective about how things are working out there. When we look at an ecosystem solution, it includes salmon, suckers, farmers, waterfowl and wetlands. We think there's a solution out there that can satisfy all of these interests."*

**- Jeff McCreary, Ducks Unlimited (cited in article in H&N News, Report for America, Alex Schwartz staff reporter)**

### **How is this likely to affect Suisun Marsh?**

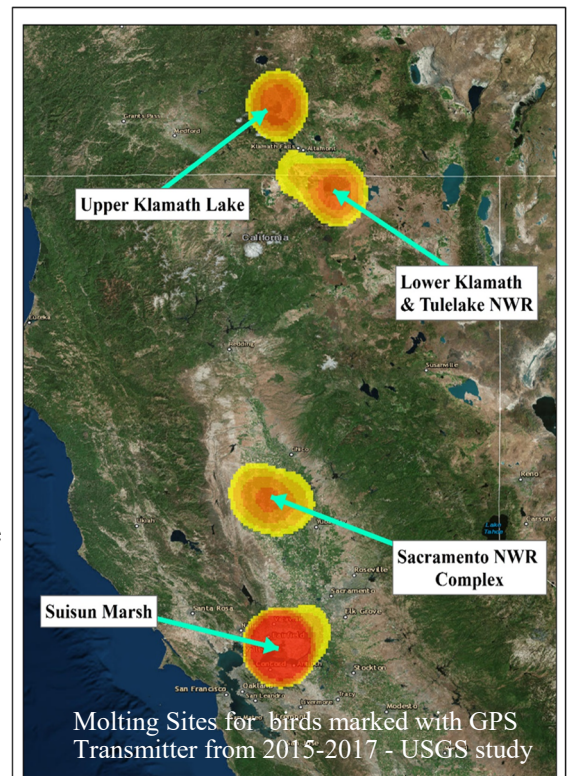
According to the U. S. Fish and Wildlife Service, Lower Klamath produces 60,000 waterfowl in a year with adequate water. Nearly 80% of the Pacific Flyway's migrating waterfowl pass through the Klamath Basin during the spring and fall migrations, and 50% use the refuges. Peak waterfowl populations approach a million birds, so when Klamath Basin lacks water, waterfowl populations suffer in the entire flyway.

A significant number of Marsh breeding ducks are known to use the Klamath Basin as a molting ground. Historical tracking data and recent GPS studies by USGS have shown that both the Upper and Lower Klamath Basins are molting hotspots for birds from the Marsh.

While female ducks can avoid starting a nest in areas with poor conditions, many molting birds can be caught unable to leave the area as conditions decline. This in turn leads to another waterfowl population problem in drought years; besides less recruitment, many ducks die or are weakened by disease.



A Dry Lower Klamath—Photo credit CWA



Molting Sites for birds marked with GPS Transmitter from 2015-2017 - USGS study

## Land of the West Wind

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.

## Rehabilitating Essential Fish Screens to Benefit Suisun Marsh Wetlands and Fish

By SRCD Water Managers

Suisun Marsh supports the largest contiguous block of coastal brackish wetlands in California. The managed wetlands depend on water supplied from adjacent sloughs, but in the 1990s, fish screens were required on new diversions to prevent entrainment of endangered fish populations. Fourteen fish screen facilities were installed that provided water for 5,369 acres (~10%) of the managed wetlands, but these facilities are now more than 20 years old and require extensive renovations for continued operations. In response to this need, SRCD submitted a proposal in 2020 to the San Francisco Bay Restoration Authority (established under Measure AA in 2016) for a project to rehabilitate the Essential Fish Screens (EFS) of Suisun Marsh. The proposal was selected for funding, and Phase 1 was initiated with a condition assessment of the EFS, pilot rehabilitation project on #634, and upgrade of solar systems on 6 EFS.

This project is led by SRCD partnering with Ducks Unlimited, 26 private landowners, and Grizzly Island Wildlife Area. By rehabilitating the EFS, this project will benefit moist soil plants of the managed wetlands needing low salinity conditions to enhance germination, nutrient cycling, and growth. The project directly contributes towards the Suisun Marsh Plan EIR/EIS (2014) mandate to enhance ~50,000 acres of managed wetlands. It addresses climate change threats of sea-level rise and increasing salinity by facilitating wetland leaching cycles to reduce soil salinities.



Fish screen out of water for maintenance

**What is an Essential Fish Screen?** EFS are installed on intake flood pipes to prevent fish entrainment by complying with flow restrictions for Delta Smelt (0.2 feet/second) and Salmon (0.4 fps) (National Marine Fisheries Service 1996a). EFS are based on site-specific considerations such as acreage served, diversion volume, and water availability and flow. The brackish tidal environment dictated the need to design stainless-steel, conical fish screens. The screens vary in size from 8 to 12 feet depending upon the water demand and acreage served. They are serviced annually by the SRCD Water Managers who use a boom truck to remove the screens for cleaning. They are placed on a platform for inspection and routine maintenance including power washing, replacing cathodic protection (zinc or magnesium anodes), replacing cleaning brushes, and conducting a general inspection.

**Why are EFS Required?** Suisun Marsh has been designated as critical habitat for endangered Sacramento River winter-run Chinook salmon, threatened Central Valley spring-run Chinook, Central California Coast steelhead, Central Valley steelhead, North American green sturgeon, and Delta and Longfin Smelt. To protect native fish populations from entrainment, unscreened diversions are restricted in Suisun Marsh limiting diversions up to 7 months of the year (Nov 1-May 31). Restrictions coincide with critical flooding periods for wintering waterfowl habitat, spring salt leaching cycles, and wetland irrigations. With EFS installed, managed wetlands can operate without diversion restrictions.



# Breeding Bird Survey Cancelled For The Second Consecutive Year: What Will It Mean For Management and Hunting?

## A statement from the USFWS:

“The Canadian Wildlife Service (CWS) and many state and provincial agencies have again cancelled their participation in the 2021 Waterfowl Breeding Population and Habitat Survey (WBPHS). In addition, the Canadian border remains closed to U.S. Fish and Wildlife Service (USFWS) survey personnel, preventing us from conducting survey operations in Canada, which comprises a large portion of the surveyed area.”

## So what does the cancellation of the breeding bird survey for the second year in a row mean?

First of all, the USFWS: *“fully expects to allow migratory bird hunting during the 2022-2023 hunting season.”*

Although bag limits are unlikely to change for most species, information used to make these decisions will be based on long-range projections. The lack of pond surveys in Canada means that there will be less opportunity to amend the model projections and check them for accuracy.

Studies over the last several decades have shown that waterfowl hunting in a single year has limited effects on long-term population numbers. USFWS will most likely allow waterfowl hunting to proceed relatively unchanged for the 2022-2023 season. However, pond counts and breeding population surveys are important for annual adjustments. Missing surveys last year was unprecedented, and without updated numbers this year, managers are relying more heavily on long range projections.

## What is the expected impact to harvest management decisions for the 2022-23 hunting season?

Currently, Canada has cancelled most field operations related to monitoring, but decisions are being reviewed and reconsidered on a month-by-month basis.



## Drought Conditions and Ducks

Drought conditions means less first-year birds will be available when the hunting season begins in October. Population survival and recruitment are both negatively affected by lack of water.

Young birds make up a disproportionate amount of hunter-harvested waterfowl, particularly in the early season. With much of the brood habitat in Suisun Marsh either dry or too salty for ducks to use (Schacter et al. 2021), it is highly likely that the early mallard and gadwall harvest will take a hit.

However, some Marsh hunters are holding out hope. Although the Marsh might not see the usual brood production this year, other areas of the state will be lacking freshwater in the fall when Marsh duck club owners will have brackish water for flooding up. The lack of freshwater in SONEC (southern Oregon and northeast California), the northern Central Valley, and the Grasslands regions might drive more birds to concentrate in the areas with water, and that might mean more birds would use the Marsh.

# Dry Conditions Means Less Duck Production

## Central Flyway Counts Tell the Story



Very dry conditions, along with a decline in numbers of breeding ducks compared to last year, were found during the North Dakota Game and Fish Department's 74<sup>th</sup> annual breeding duck survey.

The 2021 May water index was down 80% from 2020, and nearly 68% below the 1948-2020 average. The percentage-based change in the number of wetlands holding water is the greatest seen in the history of the survey.

Mike Szymanski, North Dakota Migratory Game Bird Management Supervisor, said 2020 was the sixth wettest year and 2021 is the fifth driest in 74 years. "That's an indication of how dynamic this system is that we work in," he said. "We essentially have no temporary and seasonal basins holding water on the landscape right now. And that has huge ramifications for duck production in the state."

A drastic decline in areas for ducks to establish pair territories and for hens to find high quality forage for egg production doesn't bode well for whether ducks will decide to nest. "If a hen sees an area with poor or declining wetland conditions, she's going to work under the assumption that there's no place to raise a brood later," Szymanski said. "Even though we counted a fairly large number of ducks (2.9 million) on our survey, most of those ducks are not going to nest unless we have a very, very dramatic change on the landscape."

While this year's breeding duck index was down nearly 27%, it was above the 73-year average by about 19%, and the 48<sup>th</sup> highest on record. Indices decreased for all primary species from 2020, including mallards (-48.7%) with the lowest count since 1993. In addition, some of North Dakota's other common species dropped below their long-term averages, most notably northern pintails (-68%) with their lowest count since 1991.

Szymanski said it's probably too early to make any big predictions about the coming fall hunting season. Yet, based on how things are playing out in North Dakota and much of the Prairie Pothole Region, it's likely going to be tough hunting without a lot of young birds in the air.

"Of course, we'll do a duck brood survey in July to get another handle on habitat conditions and what we see for production" Szymanski said. "But based on social mannerisms of ducks right now, it seems like there is very little breeding activity happening."

The prairie pothole region, the major summer habitat for the central flyway, may have drought conditions even worse than the Pacific flyway. Duck season remains as always, unpredictable, and Suisun Marsh hunters will have to do what they have always done, work with what they have.





## ***Klamath, Continued—Avian Botulism***

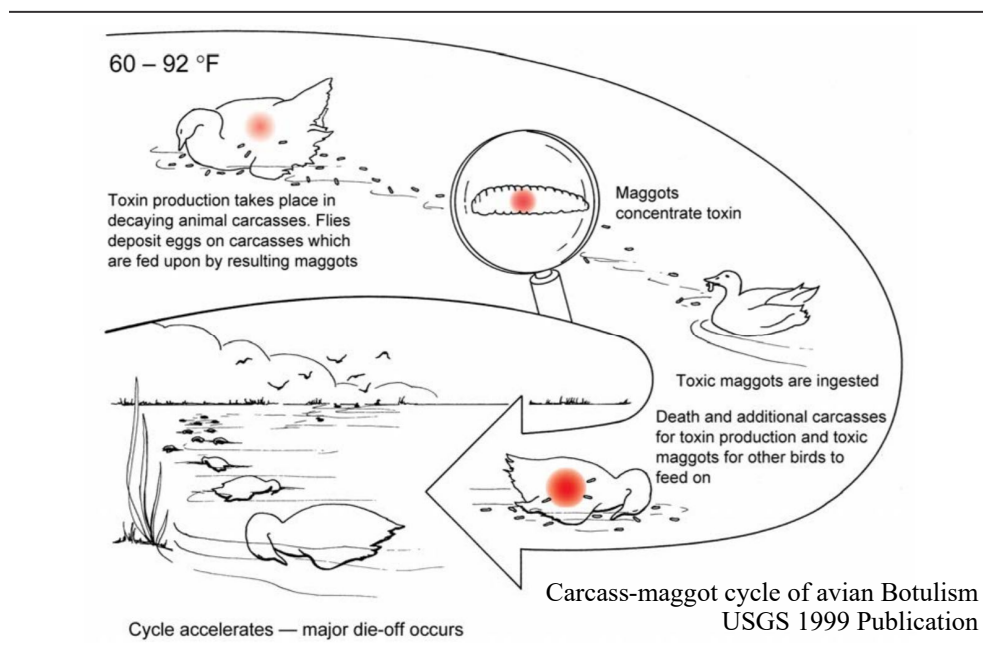
Last year, an additional devastating factor for waterfowl populations in the Klamath Basin was an outbreak of avian botulism that killed an estimated 60,000 birds.

### **Avian Botulism, common causes and spread.**

Botulism occurs naturally in many wetlands as a waterborne bacteria, but it can become problematic when water temperatures rise. Drought and heat often create the conditions necessary for an outbreak. Shallow water can lead to higher water temperatures, and, further exacerbating the issue, the less water there is on the landscape, the closer migratory waterfowl gather in the limited habitat available. As birds aggregate, the bacteria can spread. Some sick birds are still able to migrate, spreading the disease to other wetlands. Waterfowl also use Klamath as a molting area and may be flightless and unable to leave if conditions are unfavorable or if the water runs out.

### **Spread of Botulism in Waterfowl**

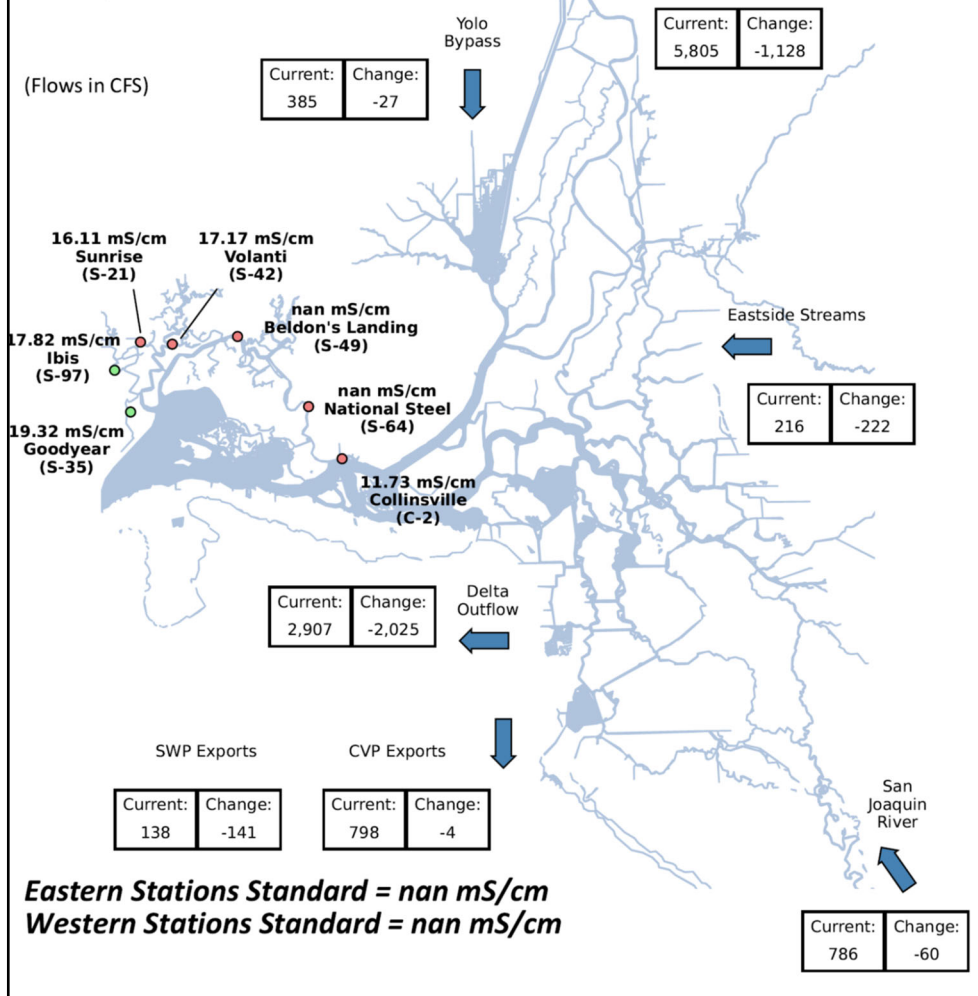
A common way for botulism to spread is through fly larvae that grow in fish and birds that have already died of botulism. Maggots eat the carrion and become infected with the bacteria. When birds in turn eat the maggots, they receive a concentrated dose of the bacteria and fall ill themselves.



### **Treatment options**

With enough water and a safe place to rest, birds can recover from avian botulism. However, with less water present in northern California and southern Oregon this year, such safe spaces will be difficult to come by. In past years, there have been efforts made by biologists and volunteers to capture sick birds and keep them until they have completed a molt before releasing them. The most effective methods to control an outbreak once it has begun has proven to be removal of all dead animals in order to curb the spread of the botulism toxin and, crucially, the infected maggots that lure other birds to feed on them.

**Delta Tributary Daily Average  
Flows & Suisun Marsh Daily  
Mean High Tide Salinities as of  
June 6, 2021**



## Water Salinity Conditions

By SRCD Water Managers

California is in a critical drought. Drought relief has been activated for parts of the state and areas of Suisun Marsh will receive drought relief funds later this year.

### How should this affect your management?

At this point, it is not recommended that private clubs take on more water, as salinities in the marsh are likely to be detrimental to the habitat and to waterfowl broods.

However, the Suisun Marsh Salinity Control Gates will likely be operated in September, lowering channel water salinities before begin to fill their ponds.

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

### The Portable Pump Program Continues

Trying to get the last stubborn inches of water off your ponds? Contact your water manager about the portable pump program to install one of the SRCD diesel pumps.

## Water Reporting Reminder!

Remember to fill out the diversion reporting for the 2019 year. The deadline to report this year is July 1st, 2020.

To complete your diversion reporting, go to the website <https://rms.waterboards.ca.gov> and login with your Diversion ID and Password. Logins and passwords are included with the letter that was mailed by the California Water Board. If you have questions on how to file, SRCD Water managers are happy to help.

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

**Suisun Conservation Fund's  
17th Annual  
Shoot and Social  
Fundraiser**

**Sporting Clays Shoot, BBQ Lunch, Raffle, and Auction  
All proceeds to benefit SRCD Landowners**



**Friday, July 30, 2021 @ 9:00 AM  
Birds Landing Hunting Preserve and Sporting Clays**

**Cost \$75.00 per Person**

The organizing committee is actively soliciting volunteers, donations of cash, auction, and raffle prizes

For more information contact: SRCD @ (707) 425-9302 or [SRCD@SuisunRCD.org](mailto:SRCD@SuisunRCD.org),

**Please share this flyer!!**

*Land Of The West Wind*  
SRCD Newsletter

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Suisun CA 94585

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### Please RSVP by Monday, July 26th, 2021

I would like to attend the SCF 17th Annual Shoot & Social Fundraiser on Friday, July 30th, 2021.

How many \_\_\_\_\_ at \$75.00 per person. I have included a tax deductible cash donation of \$ \_\_\_\_\_

Please contact me for an auction or raffle item \_\_\_\_\_

Make checks payable to: **Suisun Conservation Fund** & mail to: SCF  
2544 Grizzly Island Rd.  
Suisun, CA 94585-9539

Name \_\_\_\_\_ Phone \_\_\_\_\_ Email \_\_\_\_\_

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The Suisun Conservation Fund is a 501(c) (3) organization established exclusively to support the conservation work of the  
Suisun Resource Conservation District.

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