



# Fish • Tales

NEWSLETTER OF THE GGSA

DECEMBER 2015

FROM THE WHEELHOUSE:

## After Two Years of Urging, State Injects Salmon Eggs



In a first for California, officials from the Department of Fish and Wildlife waded into the Feather River in early December and injected fertilized

salmon eggs into the river bottom. The egg injection is a pilot project that follows two years of GGSA working to make it happen.

In nature, incubating salmon eggs buried in river gravels, start dying when water temperatures exceed 56 degrees, something common during the drought. When this happens, salmon eggs could be collected, fertilized and temporarily held in hatcheries. After rivers cool in late November and December, the incubating eggs can be gently buried in river gravel where they'll continue incubating for another month or so before hatching.

GGSA first asked the state to consider a massive egg injection program to offset drought losses in 2014 but was turned down. GGSA kept asking and in 2015 the state agreed to do a small pilot

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*Precious cargo. Five hundred fertilized salmon eggs ready to go into the gravel.*

## Green Eggs, Hatcheries Get their Quotas

We won't know the tallies for 2015 adult salmon returns until late January or early February. However, little bits of information continue to trickle in pointing to conflicting conclusions about the health of 2015's salmon run. Places like the Stanislaus River and Putah Creek, neither known for being big salmon producers, had much higher counts than in most years. On the other hand, bigger salmon producers like Battle Creek and the American River, as of late November, showed low returns.

Hatchery managers reported

female salmon arriving at the hatchery late and with underdeveloped eggs. Hatcheries delayed spawning to allow the eggs to continue ripening. The good news; major hatcheries got the eggs needed to meet their targets and create the next generation of salmon.

Fishery managers want to see at least 122,000 adult salmon return, which includes both hatchery and natural spawning salmon. Anything less could put a 2016 fishing season into doubt. *continued on p. 4*

**3<sup>rd</sup> Annual Sonoma Dinner** – March 11, 2016 at 5:30 pm. Meet special guest, renowned organic and bio-dynamic vintner Phil Coturri at Ramekins. Limited number of tickets available at [www.GoldenGateSalmon.org](http://www.GoldenGateSalmon.org).

## INJECTS SALMON *continued*

project to test the equipment, determine manpower needs, and find out what percentage of the eggs would successfully hatch. The eggs are expected to hatch sometime in mid to late January. In order to determine the hatch rates, fine mesh nets are affixed to the river bottom over the injection sites to trap the emerging baby salmon which will be counted. In nature, between ten and 40 percent of salmon eggs hatch. Up to 90 percent of eggs injected in other states reportedly have successfully hatched.

Might egg injection someday be used to offset late spawning winter run losses caused by reduced reservoir water releases? This could allow water managers to switch earlier from high summer flows to lower fall flows to avoid harming

Fall run spawning. Fall run salmon often suffer massive egg loss when reservoir releases suddenly drop after the majority of their eggs are in the gravel. When this happens, millions of fall run eggs go from being under water to being high and dry which kills them.

Modern DNA identification technology, used currently at a few advanced hatcheries, could be

applied to select which eggs are taken from wild salmon to maximize chances of getting the best salmon.

GGSA hopes the lessons and experience gained from this experiment will provide a powerful tool for state fishery managers to offset salmon losses in drought. ■



*GGSA science consultant Dave Vogel and CDFW's Clint Garman operate egg injector in Feather River*

## **Project Identified by GSA, Knights Landing Outfall Gates Rebuilt, will it lead to a Yolo Bypass fix?**

**I**n October Reclamation District 108, a Sacramento Valley water irrigation district, finished rebuilding the Knights Landing Outfall Gates near the town of Knights Landing. The outfall gates discharge ag drainage from the west side of the Sacramento Valley Colusa Basin drain into the Sacramento River. Before the gates were rebuilt, adult salmon swimming up the Sacramento River to spawn would sometimes make a wrong turn through the old gates and swim up into the dead end ag drainage system where they'd die without spawning. The newly rebuilt outfall gates fix this problem by basically functioning as one way gates, only letting drainage water re-enter the river. This project was first identified by GGSA in its salmon

rebuilding plan in 2013. Since completion of the project, state officials are promising they'll next fix a bigger related problem of adult salmon getting lost and killed in a neighboring ag drainage to the south in the Yolo bypass, just west of Sacramento. This is believed to be the major entry way 600 winter run traveled in 2013, resulting in their failure to spawn that year. Caltrout has been working with local rice growers and state officials for years to design a fix there. GGSA will continue to lend support to fixing this problem. Hopefully a new momentum to address the relatively easy structural solution has emerged in the wake of the rebuilding of the Knights Landing Outfall Gates. ■



*State CDFW rescue adult salmon from Yolo Bypass ag drainage canal in 2014 Photo: Jacob Katz*

# Up River Restoration Stalled By Lands Commission

**H**igh priority restoration of side channels used by baby salmon to safely rear in the upper Sacramento River ground to a halt in December because of a little known state agency called the State Lands Commission. The restoration work was being done under the direction of the Bureau of Reclamation's salmon biologists who identified several former side channels that have filled with gravel or had been separated from the river by manmade barriers, levees, or dikes. Baby salmon rear in side channels which generally have lower velocity flows and plenty of tree cover overhanging the banks which both cools the water and provides a

steady diet of bugs to the hungry salmon below.

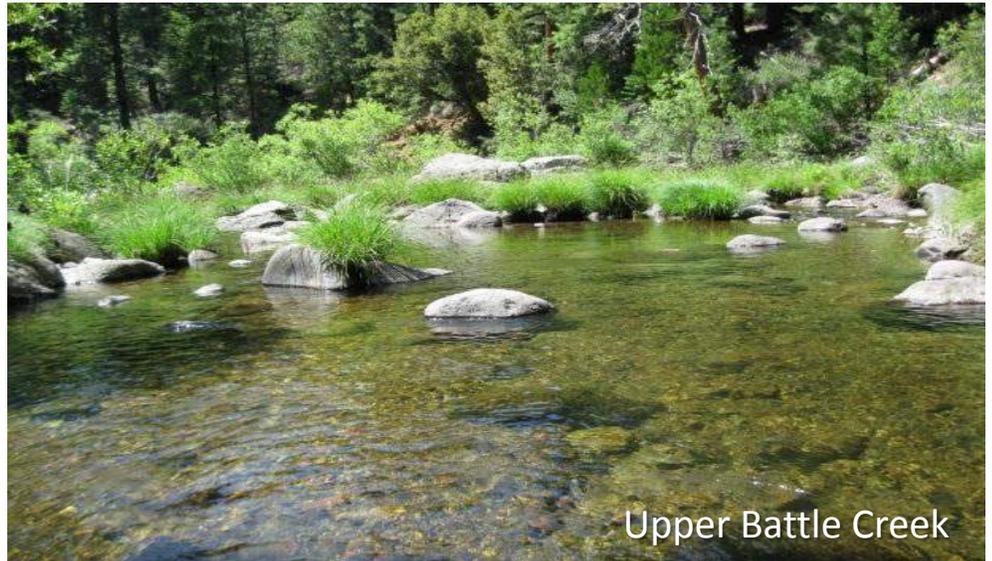
The restoration specialists thought they had satisfied all regulatory conditions needed to start only to have the lands commission throw up a last minute roadblock which is likely to stall efforts at least into the new year. In light of the massive losses of federally protected winter run in 2014 and 2015, denying these imperiled fish places to safely grow was questioned by GGSA. The restoration projects have been planned carefully to minimize any possible harm to the environment. Indeed, the projects are reversing years of environmental harm and

restoring the river to a more natural state desperately needed by young salmon, especially winter run. A recent study showed that losses of juvenile salmon are highest in this section of the river, something the restoration work will reduce.

GGSA asked higher ups to inform the Lands Commission of the recent winter run losses and the immediate need for more and better rearing areas. We're hoping the message was received and restoration work has resumed by the time you read this. ■

## Coleman Hatchery Complicates Plan To Put Winter Run Back In Battle Creek

**F**ederal fishery plans call for establishing two more "backup" populations of winter run salmon, one in Battle Creek and one above Lake Shasta in the McCloud River. The biggest salmon hatchery in the Central Valley, Coleman, is located on Battle Creek with a small dam across the creek at the hatchery that usually stops salmon from going further upstream. Plans to reintroduce winter run above this dam to upper Battle Creek are struggling with how to address getting them past the dam.



Salmon headed upstream of the hatchery can be routed through the hatchery and returned to the creek upstream of it. Concerns have been raised this will harm the fish, especially if they have to be sorted and separated from hatchery steelhead or late fall run kings returning to the hatchery at the same time. Some have suggested the hatchery should discontinue its late fall run and steelhead production to clear the way for winter run. The

final solution hasn't been worked out but the threat to Coleman's steelhead and late fall run production looms. ■

Come Visit the GGSA Booth at the International Sportsmen's Exposition in Sacramento January 21-24, 2016.

### GREEN EGGS Continued

Federal fish agencies say damage to federally protected winter run salmon from lack of cold water has now occurred for the second year in a row. In addition, concern for the surviving 2014 winter run out in the ocean could easily result in more fishing restrictions than in 2015. The reason; the survivors will be jacks in 2016 and big enough to get hooked. In 2015 sport fishermen lost eight days of fishing due to concern for winter run numbers. Commercial trollers lost trolling grounds below Pt. Sur and part of their late season below Pigeon Point. A steady increase in restrictions could become the norm for the next several years because of winter run concerns. ■

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## Winter Run Hatchery Working Overtime

**D**ue to the drought, state and federal hatchery managers once again trapped and bred as many winter run salmon as they could this year. More irreplaceable genetics from the small population of winter run salmon would have otherwise likely been lost due to hot river conditions. In 2014, instead of producing the customary 200,000 baby salmon, they produced over 600,000. This year's egg take looks like it will produce only about 400,000. GGSA applauds these efforts at the Livingston Stone Fish Hatchery located at the base of Shasta Dam. ■



*Winter run salmon taken for captive breeding*

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