FROM THE WHEELHOUSE:

**Drought Cuts Deep Into Salmon Runs**

By now most readers know that we lost 95 percent of last year’s baby winter and fall run salmon in the upper Sacramento basin due to drought conditions and poor management of water releases from Lake Shasta.

Shasta water is normally released to cool the upriver spawning beds but in 2014 federal operators of Shasta Dam (the Bureau of Reclamation) misgauged the volume of cold water and ran out while salmon eggs were still incubating in the gravel, killing most. Only a handful of surviving baby winter and fall run were counted at the Red Bluff diversion dam in 2015 when they attempted to migrate downstream.

GGSA has worked since then to avoid a repeat, but in June 2015 we learned something similar could easily happen again this year. Bureau of Reclamation water managers picked up warm survival. They did this in 2014 and instead of producing the customary 200,000 baby salmon, they produced over 600,000. GGSA applauds these efforts. They may take some of the fry and release them in Battle Creek to start a backup winter run home, but not if water temperatures there are higher than those continued on p. 2

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**Winter Run Hatchery On Steroids Again, Fry Could Be Released Into Battle Creek**

State and federal hatchery managers are planning to once again trap and breed as many winter run salmon as they can this year. If they don’t, more irreplaceable genetics from the relatively small population of winter run salmon will be lost forever. With captive breeding, they can keep the fertilized eggs in chilled water to maximize continued on p.4
DROUGHT CUTS continued

Temperature readings deep in Lake Shasta as early as April, but didn’t tell anyone or act on it until late May when it was probably too late. By fall we’ll know how bad the carnage was. We might get lucky, but only if we have much cooler than normal weather in the northern Sacramento Valley this summer and early fall.

Salmon eggs incubating underwater in river gravel start dying when water temperatures exceed 56 degrees. By May, with the rainy season in the rear view mirror, it became clear that federal water managers were dancing on a knife, planning to release every last drop until bumping into the 56 degree requirement for winter run salmon. Instead of providing 56 degree habitat for 30 or 40 miles of the upper Sacramento River, as required in normal years, this year there is only about eight to ten miles, a reduction of about 80 percent.

The state water board has ultimate say over how water is allocated and used in California. On May 20, GGSAs asked the state water board to intervene and withhold extra water in Lake Shasta to provide for a margin of error to avoid a repeat of 2014.

Nine days later, on May 29, the water board did just that, but it may have been too late. By June 10 state and federal fish managers said they weren’t confident there would be enough cold water to meet the needs of salmon.

Next year, when the first of the naturally spawned 2014-born survivors return as two year olds, their number will likely be very low. However, return of two year old hatchery fish should be at or above normal because GGSAs successfully lobbied hatchery managers to truck them in 2014, which greatly increased their survival. When fishery managers start thinking about the 2017 fishing season, it’s hard to imagine they won’t impose protective measures that restrict the fishery, but who knows.

If we lose a second year of natural spawned salmon, what will that mean? A near normal number of hatchery salmon will offset the losses but will that be good enough for season-setting fishing managers? We don’t know but fear is afoot in salmon communities as people ponder an uncertain future.
Raising Shasta Dam Bad For Salmon

Various water users and the federal Bureau of Reclamation are pushing to raise the Shasta Dam by 18 feet to store more water. While this might seem like a reasonable idea at first, after some digging by GGSA, a preliminary report by the US Fish and Wildlife Service surfaced showing doing so would likely result in damage to our salmon fishery. In addition it would flood a major part of the McCloud River and some of the last traditional tribal lands of the Winneman Wintu Indian tribe.

Currently, during prolonged heavy storms, water is released from Shasta to make room for incoming natural runoff. The US Fish and Wildlife Service found that these flood relief flushing flows, which are needed to push gravel and baby salmon downriver, would become a thing of the past. If Shasta were enlarged because the lake would rarely fill.

Already, fishery managers have to dump gravel at various locations throughout the upper river while a virtual mountain of gravel, dumped at the far north end of the river, awaiting a flood release flow to distribute it downstream where it can be used by salmon. The federal Bureau of Reclamation has cobbled together a study purporting to identify how a dam raise would affect the environment. Contrary to the law, the study fails to include analysis of a host of alternative strategies that better protect the environment, including salmon habitat. The US Fish and Wildlife Service study that found that raising the dam would harm most salmon runs in most years was ordered withdrawn by higher ups who want to see the dam raised.

When the studies wrap up and the government issues a decision to go forward, fishery groups are likely to bring a legal challenge. GGSA is skeptical of the dam raising proposal and is conducting additional research to inform a stronger stand in the coming months.

Trap and Haul Above Shasta This Summer?

In some places in Oregon and Washington, where dams lacking fish ladders block salmon streams, adult salmon are trapped, trucked upstream of the dams, and released to spawn in headwaters. Later, juvenile salmon are trapped in these headwaters, trucked back downstream of the dams, and released. It’s an expensive way to do business but this approach is being discussed for some California dams including Shasta and dams on the upper Yuba River. With the drought boring into natural spawning salmon runs, we may see this effort accelerated. On the other hand, since the federal government is the lead and moves slowly, don’t hold your breath.

Baby Hatchery Salmon Released After Being Trucked To Delta Due To GGSA Efforts
healthy for salmon. Not only will this captive breeding program preserve more of the native DNA, it could also help fishermen three years from now when the number of returning winter run will factor into how much time and area on the ocean salmon fishing will be allowed. Season restrictions are calculated by averaging the most recent three year winter run returns. Soon the three years being averaged will all be far below normal, leading to more fishing restrictions. 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 later below Pigeon Point. A steady increase in restrictions is likely to become the norm for the next several years due to low numbers of winter run.

GGSA Works With State, Federal Legislators for Salmon

Fulltime lobbyist work incessantly to weaken salmon protections so south of the Delta interests can get more salmon water. So in May GGSA executive director John McManus along with GGSA board members Randy Repass, Dick Pool and Marc Gorelnik went to DC to plead the case for salmon. The GGSA members visited House and Senate offices with the simple message that current restrictions on Delta pumping need to be retained, or we’ll lose our salmon. Recent bills in both the House and Senate the have aimed at weakening these restrictions. So far, due to work by GGSA and others, these bills have not become law but both chambers of Congress are making another run at passing these anti-salmon bills this year. GGSA will be there again fighting for salmon

Working at the State Capital
State salmon hatcheries produce tens of millions of baby salmon to make up for habitat lost behind dams. Until about 2007 they also produced an additional four million so called “enhancement” fish. These were salmon produced to enhance the fishery over and above what mitigation fish provide. The cost to produce these enhancement fish was split between CDFW and the Commercial Salmon Stamp Committee. The Salmon Stamp Committee administers a fund raised by commercial trollers and charter boats who all pay into it.

After 2007 the number of enhancement fish mysteriously dropped from four to two million. GGSA contacted state legislators to see if a bill might be passed to restore the four million fish. State legislators were happy to help and at the 11th hour of the annual budget process, passed language calling for these funds. CDFW then signaled a new law wouldn’t be necessary, they’d try to come up with their half of the money and see if the Salmon Stamp Committee would commit to the rest. As of now, things are still up in the air but trending in a good direction.