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The California Coastal Fall Chinook Conundrum

By Dave Bitts

Suppose there were an ocean salmon fishery constrained by a biological opinion (BiOp) to protect a stock of fish, taken in that fishery, that had been listed as "threatened" under the Endangered Species Act (ESA). Then suppose the listed stock recovered, but no one noticed, because the stock's abundance was not being monitored. Meanwhile the fishery continued to be constrained under the ESA … preposterous, right?

But very little supposing is required, because that's just what may be going on with the ocean salmon fishery off California and Oregon, which is now constrained by the abundance of the "California Coastal Fall Chinook," a stock of salmon listed in 1999 under the ESA.

In 2012, the Coastal Fall Chinook BiOp produced pursuant to that listing constrained the ocean salmon fishery to about two-thirds of the Klamath fall chinook catch that otherwise would have been available. This is important because the ocean share of Klamath falls is typically the limiting factor in how much ocean salmon fishing is allowed off most of Oregon and California.

The fleet usually tries to use our often meager Klamath share to access as many Sacramento fall chinook as possible, almost all of them hatchery-produced. Typically each Klamath fish we're allowed to catch adds about ten fish to our total catch. Meanwhile, in the fall of '12 the third consecutive robust return of salmon to northern California's Eel River and other coastal rivers was anecdotally observed, but not reliably quantified. (The dive counts generated by the Eel River Recovery Project have yet to be accepted by state and federal agencies as reliable.)

The California Coastal Fall Chinook stock (called an "ESU" or "evolutionarily significant unit" in ESA-speak) includes fish from Redwood Creek (south of the Klamath) to the Russian River – in other words, most of the California coast north of San Francisco – with the Mad, Eel, and Mattole Rivers on either side of Eureka accounting for most of the stock. But their original listing was based neither on ocean take nor on any documented declines in their numbers, but on their degraded habitat and water diversions from it.

Yet this BiOp explicitly does not address any of these underlying habitat or flow issues, dealing only with fishery management measures to protect the stock from excessive ocean take (including banning retention of fish caught in-river). Hence fishery restrictions alone are unlikely ever to lead to this stock's recovery.

The BiOp considered the constraints on ocean fishing due to both: 1) the Klamath escapement policy in the Pacific Fishery Management Council's Framework Management Plan for fall chinook salmon, i.e., 33 percent of each brood left for spawning, with a minimum of 35,000 natural spawners, and; 2) half the harvestable Klamath chinook to be allocated to the Yurok and Hoopa Tribes for in-river catch.

Given that there's no significant in-river take of coastal fall chinook, the BiOp's authors considered the Klamath constraints adequate to protect this Coastal Fall Chinook ESU also, to the (unknown) extent to which ocean take of Klamath and coastal fall fish are similar. Lacking much direct information on ocean catch of listed coastal falls, they decided to use Klamath fall chinook as a surrogate: not an unreasonable decision at the time. They then capped the allowable Klamath ocean harvest rate at the best seen in the previous five years.

At the time, this decision was seen by both its authors and ocean fishermen as being pretty friendly to the ocean salmon fishery. Little did we know then that the allowable Klamath harvest rate, under the existing Klamath management constraints, could be as much as 50 percent higher than the cap imposed by the BiOp.

Nor did we imagine that Klamath

fish would ever be so abundant that the problem would not be how to use a few of them to catch a lot of Sacramento fish, but rather how to catch enough Klamaths to reduce the likelihood of another major fish kill caused by overcrowding in the river.

Yet that was precisely the case in '12, when for the first time ever the biologists for the Yurok and Hoopa Tribes asked the Pacific Fishery Management Council to find a way to allow ocean fishermen to catch more Klamath fish – a lot more – to reduce potentially dangerous in-river overcrowding. Too many returning fish could overwhelm what has become (after decades of dam building, flow reductions and extensive habitat damage) a much more limited Klamath in-river spawner carrying capacity. But unfortunately the cap imposed by the Coastal Fall Chinook BiOp was in the way.

When the current Klamath escapement policy was originally developed, much less was known about the Klamath River's capacity to handle spawning fish. The 35,000 natural spawner floor was merely an educated guess, a split between two assumptions of maximum sustainable yield, one of 40,000 and one of 100,000 spawners. And the 33 percent survival to spawn (or maximum 66 percent total catch, if you prefer) was intended at least in part to yield a wide range of actual spawning numbers over time in order to develop a better estimate of the optimum.

Twenty-four years later, two highly technical studies recently done by some pretty sharp people have determined that the optimum spawning number under current habitat conditions in the Klamath Basin is around 40,000, a mere fraction of its historic capacity. (PCFFA and many others are doing all we can to bring about the removal of four obsolete dams on the Klamath and the enactment of the Klamath Basin Restoration Agreement, which should bump that number up considerably.)

Is it time to revisit the upper end of the Klamath fall chinook escapement policy? No one still seriously thinks that very large numbers of returning spawners in the Klamath is a good thing. What about, say, making half of any number of natural spawners over 35,000 available to catch? Or over 50,000, to be precautionary?

Implementing changes of this nature may be necessary to the future of the ocean salmon fishery if either: (a) the numbers of listed Sacramento winter-run chinook decline to a level that severely curtails fishing below Point Arena, or; (b) climate change knocks the Sacramento out of its position as the major salmon producer below the Columbia. But the cap imposed by the Coastal Fall Chinook BiOp is in the way.

What happens when the Klamath dams are removed and the Klamath Settlement is implemented? Federal studies say ocean fisheries should see better than a 40 percent increased catch of Klamath fall chinook – but how? The Coastal Fall Chinook BiOp cap would still be in the way.

PCFFA has supported the use of listings under the ESA, even when we felt the bite of the listings in our own fisheries (as we have with the Oregon Coastal Natural Coho, Sacramento Winter-run Chinook, and Snake River Fall Chinook BiOps), because unfortunately too often an ESA listing is the only tool available to protect freshwater salmon habitat, without which we would have no salmon. To the extent that the Coastal Fall Chinook ESU listing is necessary and useful to protect that stock, we support it.

In this case, although the BiOp does not address the habitat and flow issues that led to the listing, the National Marine Fisheries Services (NMFS) has done so by conducting numerous Section 7 consultations with other federal agencies whose activities in coastal fall watersheds could affect the listed fish, and by requiring habitat conservation plans for large landowners and other permitting processes for smaller ones. In fact, much of the staff of the Santa Rosa and Arcata NMFS shops are working primarily on these issues as they affect coastal watersheds from San Luis Obispo to the Oregon border, and in San Francisco and Humboldt Bays. And the agency is working with other entities to acquire and rehabilitate portions of the Eel River estuary for improved coho salmon rearing habitat, which will also benefit chinook salmon.

However, NMFS doesn't actually know what the Coastal Fall Chinook ESU population was, is, or should be, nor whether it's increasing or declining. NMFS has relied on California's Department of Fish and Wildlife to do the monitoring but DFW hasn't done it. Time to rethink? Lacking either a recovery plan or recovery standards, it's hard to see how we can know how much ocean take is consistent with recovery.

To be fair, NMFS' failure to fulfill this part of its responsibilities under the listing may not be entirely, or even mostly, the agency's fault. The more likely source of the problem is that Congress has cut the NMFS budget, and cut it again, while the portion of this reduced budget dedicated to scientific work (and monitoring pursuant to listings) has been redirected within the agency – to nationwide implementation of catch shares, of all cockamamie things! A NMFS staff biologist interviewed for this article said, regarding carrying out measures called for by the Coastal Fall Chinook ESU listing: "if the money and staff were there, I don't know what else would be stopping it."

This is only one of many cases where NMFS lacks funding to do the basic scientific work, necessary to determine stock abundance and hence allowable catch levels, which is the foundation of effective management. The buck stops – literally – in Congress.

NMFS would like to be able to generate protective fishery management measures for Coastal Falls based directly on that stock, rather than indirectly on Klamath fall chinook. They might want to develop an abundance-based standard, as they have done for Columbia River Tule salmon and Sacramento winter-run chinook, which would allow for more fishing when there are more fish (and, of course, less when there are fewer).

But to do that they need either reliable direct information on runs in Coastal Fall ESU rivers, or some other way to assess changes in the population. One such way is genetic stock

sampling in the ocean, commonly called GSI (for "genetic stock identification"), which is capable of identifying coastal fall chinook samples. GSI work has been done at sea for at least the past three years, and, according to Dr. Pete Lawson of NMFS, could probably be used to develop an index of coastal fall chinook abundance that might be useful for direct management.

GSI, with scale sampling, also has the potential to measure more directly the strength of a given year's age-2 class of fish (i.e., next year's catchable fish) than the jack counts currently used. The variability in the percentage of a given brood that returns to the river at age-2 confounds the best efforts at stock prediction, which is the basis of ocean salmon fishery management. But the funding for GSI also appears to be drying up....

Last year the Coastal Fall Chinook ESU listing cost ocean salmon fishermen millions in ex-vessel revenue, and this was the third or fourth year when something similar has happened. The Coastal Fall Chinook BiOp-imposed cap on our catch of Klamath fish also acts as a severe check on our enthusiasm for restoring that river, or for moving towards a change in escapement policy that could benefit both fishermen and future broods of fish.

This constraint may in fact be necessary – but maybe not. We simply don't know, and not knowing is tough to take. It is pretty tough to take when other entities fishing Klamath stocks – the Yurok and Hoopa Tribes and sports fishermen on the Klamath – are allowed more fish than they can possibly catch. Add the frequent reports from sport fishermen and others of abundant fish in the listed coastal rivers, and it gets really tough to take.

Is it too much to ask Congress to find the funds for NMFS to do its legally mandated work, so we might either share in the occasional abundance of Klamath fish, or, if not, at least know there's a good reason why not?

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