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CRISIS ON THE COQUILLE

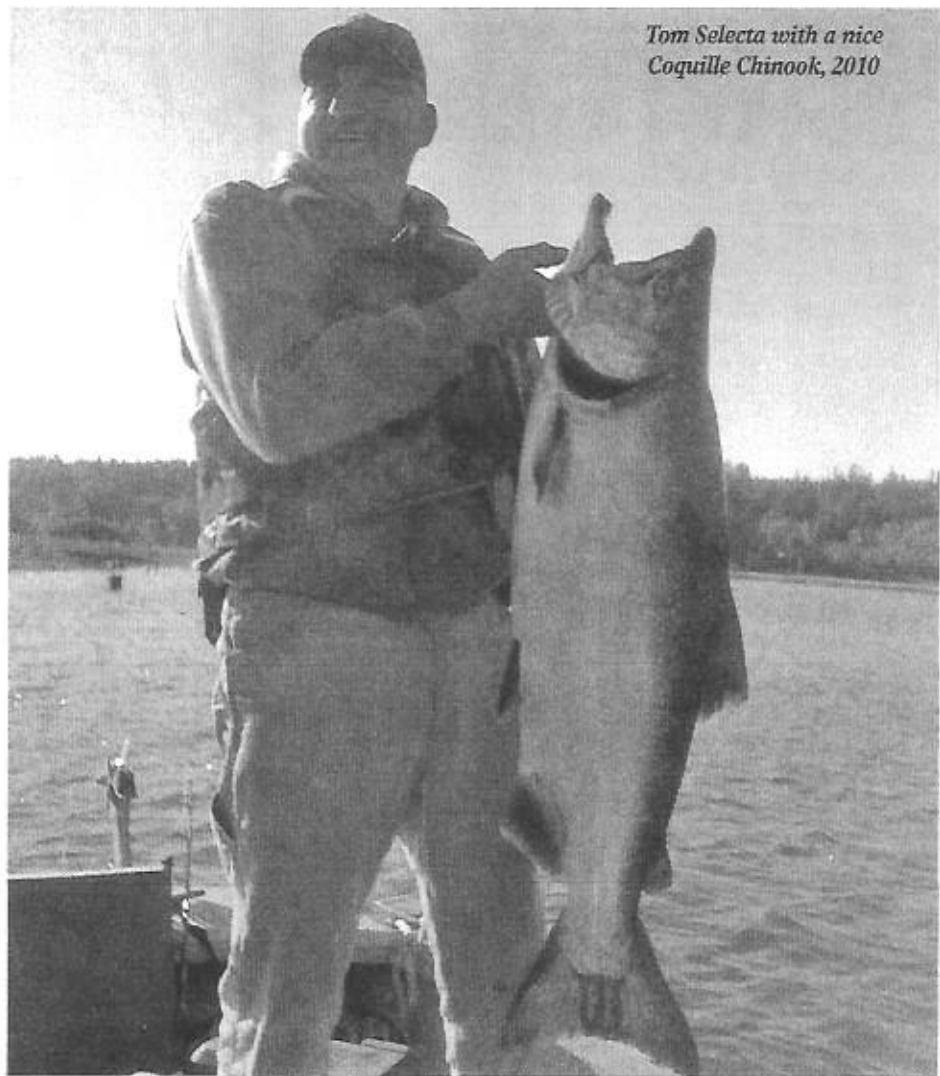
The public is looking for action now. They want a healthy fishery, not hoping for a few hundred more fish to return to the river. The numbers of NS fish returning needs to be in the thousands, not hundreds.

The Coquille, River located in Southern Oregon, has always been a popular sportfishing river. Historically, runs of winter steelhead, coho and fall Chinook have been healthy allowing for the limit of two fish, marked or unmarked. The South Fork winter steelhead run brought fishermen from all over southern Oregon to fish. The fall Chinook run was noted for large fish with fishing primarily in tidewater areas reaching as far as the forks near Myrtle Point. Most angling occurred from the 101 Bridge upriver to Bear Creek. The proximity of boat landings at Coquille and Rocky Point made access easy and uncrowded.

The only hatchery on the river was Bandon Hatchery located on Ferry Creek at river mile one. Ferry Creek entrance is in the bay at Bandon. The hatchery depended on broodstock collection upriver and use of returning fish for reproduction. The 2017 Hatchery Genetic Management Plan stated that there were no genetic differences between the hatchery fish and the natural spawning (NS) fish. Approximately 170,000 eyed eggs were transferred from the Bandon Hatchery to Cole Rivers Hatchery and reared to smolt stage. 22,500 were also reared at Coquille High School. An additional 116,500 unfed fry were release at various locations as far away as Powers, Oregon. These eggs were raised in hatchboxes. Hatchboxes are considered by ODFW to be unproductive and scheduled at the time of this report for discontinuation. The chart on page 44 was from the 2017 Coquille HGMP.

It was noted discontinuing the hatch box or the new improved incubation boxes when the fish are in crisis might not be perceived by the public as a wise decision.

The release of hatchery smolts was primarily at the hatchery and at Seven Mile Creek. Seven Mile Creek is located just above the Rocky Point boat landing. The release of smolts required a two-week acclimation before release to improve the



Tom Selecta with a nice Coquille Chinook, 2010

homing of returning adults to these sights. Unfortunately, ODFW and the landowner at Seven Mile had a dispute and ODFW was booted off the land. As a result, a fish transport truck would drive up to Seven Mile, stop where the creek culvert passed under the road and dump over 60,000 smolts from the highway into the small creek and subsequent entry into the river a few hundred yards below. A dream come true for predators in the air and water. In the absence of acclimation, studies

have shown that stray rates go up due to incomplete imprinting. As a consequence, keeping the smolts so low in the river, the number of marked fall Chinook found in the upper tributaries has been near zero.

Approximately 60,000 or more smolts were also released from the Bandon hatchery directly into the bay. When the adults returned, the creek was usually too low to reach the hatchery requiring time in the lower bay until they could gain entry. This was problematic for local fishermen as the

distance from Ferry Creek to the jetty was only 0.6 miles with an average depth of 12 feet. Consequently, fishing pressure was light. The 30-50 seals sprawled out on the north side of the bay were the probable beneficiaries of the program. Last year only three female adult fall Chinook returned to the hatchery. Sportfishing last year was limited to the river below the Highway 101 bridge. This year the plan is to close the entire river to fishing for fall Chinook. The chart (center/right) demonstrates fishing success in years 1978 through 2003 for both the Coos and the Coquille. I was unable to locate more recent data for the Coquille.

The fundamental issue in the management of the hatchery program was keeping the returning adults so low in the bay. As a result, sport fishing from Rocky Point to Myrtle Point was primarily on unmarked fish. Fall Chinook management usually relies on hatchery fish for the sport catch in hopes the unmarked fish will return to the upper tributaries to spawn.

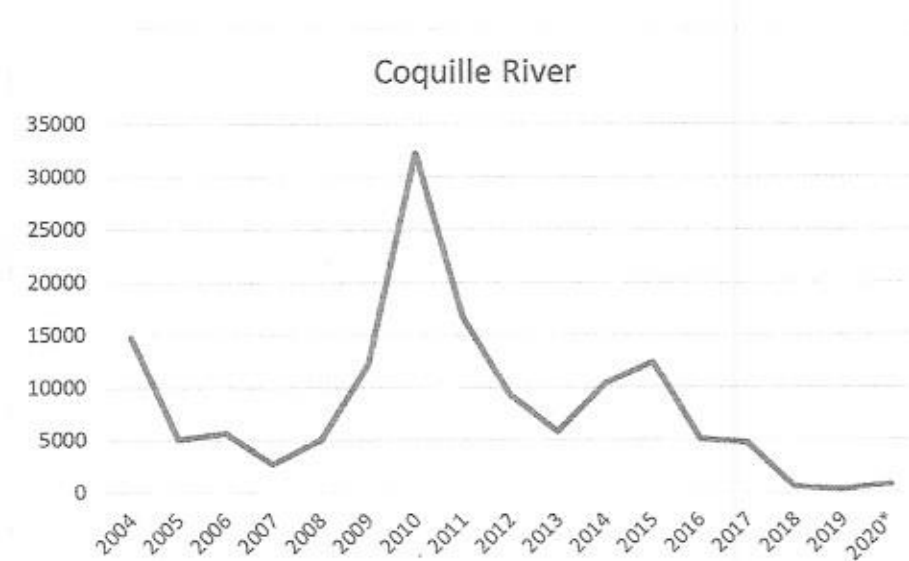
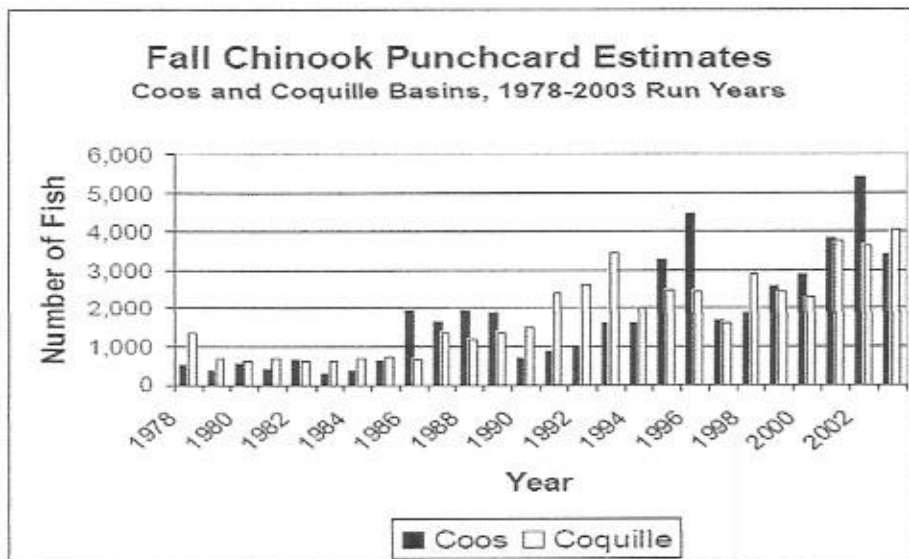
Within the river, a new problem developed in recent years with the introduction of smallmouth bass and a sudden increase in striped bass also. Both fishes being predators to juvenile fall Chinook. Juvenile salmon are unprepared for this new threat and it could take multiple generations for them to adapt, if adaptation is possible. One generation is at least four years. The chart below shows what has happened to the population in recent years.

In 2018, the number of natural spawning fall Chinook dropped to 514. It got worse in 2019 with only 275 fish counted. The numbers were up slightly for 2020 with 794. The natural spawning fall Chinook numbers in the Coquille River are the lowest in recorded history. This is a 99% loss of fish in just five years. (See chart bottom/right.) ODFW believes the culprit is the rising bass population. Diminishing habitat, droughts or climate change can lead to warmer water in the river which favors the bass species and is unfavorable for the juvenile salmon.

One of nature's ways of replenishing depleted anadromous fish stocks as well as maintaining a healthy gene pool is straying. It is known that a small percentage of anadromous fish will stray from their home river into neighboring rivers and spawn there. It is unknown if this natural straying is a result of poor homing ability or simply a search for optimal spawning areas. A recent example was the Toutle River after the Mt. St. Helens eruption in 1980. The siltation killed all the fish in the river for several years. Eventually salmon repopulated the river by the process of straying

Table 1-1. Proposed annual fall Chinook Salmon releases in the Coquille Basin.

Life Stage	Annual Release Level	Release Location
Eyed Eggs	0	
Unfed Fry	115,000* (total for all sites) *Proposed for 100,000 hatchbox fry to be phased-out, leaving classroom incubator projects remaining.	Blue Creek (North Fork Coquille)* Camas Valley Elementary School (Middle Fork Coquille) Powers Elementary School (South Fork Coquille) Powers High School (South Fork Coquille) Myrtle Crest Elementary (S. Fork Coquille) Additional schools as requested.
Fry	0	
Fingerling (presmolts)	20,000 10,000	Cunningham Creek (Coquille High School) Bandon Hatchery (Ferry Creek)
Smolts	80,000 64,600	Sevenmile Creek (Coquille Estuary) Ferry Creek (Coquille Estuary)



from other rivers.

The mouth of Coos River is only 14 miles from the mouth of the Coquille. There are also fall Chinook south of the Coquille River in Flores Creek, the Elk and Sixes rivers. This sets up the question, when NS fish numbers drop from between 5,000 - 10,000 fish to 275 fish. Is it possible that the number of juveniles leaving the upper tributaries no longer exceeds the take by in river and ocean predators. When the total number of adult fish returning are counted in the hundreds, are some or all of them strays? If this is what has happened, the potential result may be extinction. Is it possible that the entire run of Coquille fall Chinook is extinct and has been since 2018.

A few months ago, in response to the low numbers, the Oregon Angler's Alliance (OAA) requested a meeting with ODFW to discuss the matter. OAA is one of the largest sportfishing organizations in Oregon and especially active on fishery issues in Southern Oregon. The mission statement of OAA in part, reads: *Our goal is to ensure that our fisheries management decisions are based on science, providing an optimal future for our fisheries with optimal opportunity for all anglers for future generations. It is critical to safeguard our culture of enhancing, protecting, and increasing Habitat, Hatcheries, and a sustainable Harvest through education, community involvement and focused management strategies.*

The crisis on the Coquille embodies every aspect of the OAA mission statement. Fortunately, OAA has its own scientific consultation group composed primarily of retired ODFW field biologists and fisheries managers. Besides their education, they bring decades of experience to the table.

We noted that the population of Chinook is so low in the Coquille, the genetic resources of the NS population are now at risk. The genes that are considered unique to the Coquille Chinook that have been in the watershed for a millennium are now in jeopardy. Geneticists will tell you that when any population of animals drops below 300 then a phenomenon known as "genetic drift" occurs. This means that valuable genotypes have a high probability of disappearing within the population. Through natural selection, it could take hundreds of generations to regain this invaluable genetic diversity.

A follow up meeting with ODFW staff included written recommendations from OAA. The recommendations included the use of conservation hatchery production. This is a process where broodstock is collected from the limited remaining NS fish. Eggs and sperm are removed and

the offspring are raised in a hatchery for release in the upper river. Discussions also included the use of "out of basin" stock derived from the Coos River. There was considerable resistance from ODFW on this process with the idea that the genetic makeup of the Coquille River fish could be jeopardized. Apparently, a study conducted in 1995 indicated there were minor differences between the Coos and Coquille stocks. The significance of those genes is unknown. There were thousands of fall chinook spawning in the Coquille when the study was done, how much diversity remains when the total population has dropped to under two percent is unknown.

The Native Fish Conservation Policy of 2002 states the following three goals:

Prevent the serious depletion of native fish.

Maintain & restore naturally produced fish in order to provide substantial ecological, economic and cultural benefits to the citizens of Oregon.

Foster & sustain opportunities for fisheries consistent with the conservation of naturally produced fish & responsible use of hatcheries.

The Oregon Hatchery Management goals are as follows:

Policy Goals

- Foster and sustain opportunities for sport, commercial and tribal fishers consistent with the conservation of naturally produced native fish.
- Contribute toward the sustainability of naturally produced native fish populations through the responsible use of hatcheries and hatchery-produced fish.
- Maintain genetic resources of native fish populations spawned or reared in captivity.
- Minimize adverse ecological impacts to watersheds caused by hatchery facilities and operations.

Two and three allow for the use of conservation hatchery management where naturally spawning fish are captured, offspring raised in captivity and released back into the system.

It was noted during the meeting that tributaries of the Coos are often within a quarter mile of tributaries of the Coquille. One flowing north and one flowing south off the same mountain. In reality, the use of out of basin stock is a human induced form of straying. Either the eggs and sperm are mined from the Coos fish for subsequent transplantation as smolts or the adults themselves are transplanted in the upper regions to reproduce naturally. Both methods have been used in Oregon in the past

and the methods are well documented in the literature. The question here is twofold. Are the current adults upriver Coquille fish? Is it prudent to try and save a gene pool when the entire species may be on the brink of extinction?

The good news in the ODFW plans involves building barriers to seals to protect fish entering Ferry Creek and feeding on the adults returning to the hatchery. As mentioned before, the return of adults to this facility at river mile one allows only for a limited sportfishing opportunity on hatchery fish.

The discussion included Seven Mile Creek, located a few miles above the Highway 101 bridge. It is a better acclimation site but requires improved cooperation with the landowner. ODFW is cooperating with Coquille STEP and OAA to find a better location for hatchery smolt acclimation further upriver to allow for safer boat angling and greater opportunity to catch a hatchery fish. OAA noted that landowners on Bear Creek at about river mile 5 have expressed an interest in developing the creek for acclimation purposes but very little traction has taken place so far.

ODFW submitted their own action plan to OAA in the next meeting.

Attendance at that meeting from ODFW included the director of fisheries and local staff from the Charleston office. Also present were OAA board members and science staff, legislators, tribal and commercial fishing representatives, a county commissioner, and others. ODFW rejected the use of conservation hatchery practices or out of basin methodologies at this time. They say they are constrained by established policy and will evaluate intervention in 2022 based on 2021 returns. Their plan was to close the entire river to sportfishing, do electroshock in river for bass removal and not use any NS fish for hatchery broodstock. Study the situation for another year and see what returns. Oceans conditions have reportedly improved and maybe we could get a 1000 fish back next year. OAA countered, if the problem is bass in the river, how will improved ocean conditions matter? After lengthy discussions no one from the public side endorsed their plan. Several folks, especially the tribes stated that the tribes and ODFW were not even on the same page. The overwhelming public response was act now, we have lost 99%, perhaps even 100% of the run and we are going to wait another year? Unless the number of juvenile salmon going down the river exceeds the take by predators why is there an expectation conditions might improve? We asked

how long will it take for recovery so these fish can be harvested again? A response to the last question was no one knows. In the meantime, no fishing. Continuing to ban sportfishing opportunities as a fisheries management tool is akin to closing the barn door after the horses got out.

Here is where the issue of being on the same page comes up. ODFW is looking for recovery of the NS stock by natural means which is certainly an idealistic approach. This assumes the genes from the few remaining fish have been preserved and that this preservation matters to the survival of the fish. One ODFW staff member stated that they did not want to mine any of the remaining NS fish for broodstock. Because it is better to allow them to spawn naturally. We disagree. A conservation hatchery approach means 80% to 90+% survival of eggs to smolt stage. It is unknown now if any of the recent natural spawning has been successful to smolt stage. If the in river bass are the problem as described by ODFW, and we have already lost 99% of the natural spawners, how would anyone assume that continued natural spawning is going to improve the run?

We agree that an aggressive approach to the smallmouth bass and stripers in the river could help but the methods suggested are not designed for elimination of a species. ODFW suggests spear fishing and electroshock methods to limit the bass. Spear fishing? Electroshock the entire 36 miles of river? What about the non-invasive other species that naturally call the river home?

Everyone has a concern for improvement in habitat. Better habitat supports the survival of more fish. Studies conducted in Alaska have shown that rivers with salmon have better instream habitat for insects, crustaceans and other local inhabitants that offer a food supply for juvenile salmon. Those rivers without salmon had far less natural river life. The key to better habitat starts with the salmon carcasses in the river post spawn. Nutrients from the carcasses improves river health and generates the cycle of river life needed for juvenile salmon survival. Absence or diminished numbers of salmon carcasses has a direct effect on the river micro-inhabitants and subsequent feed for juvenile salmon.

The public is looking for action now. They want a healthy fishery, not hoping for a few hundred more fish to return to the river. The numbers of NS fish returning needs to be in the thousands, not hundreds. How ODFW intends to proceed after our last Zoom call is yet to be determined. If they want to regain public trust, reconsideration of their plan is needed.

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