Willapa Basin Ecosystem Review Team

Via Email

March 20, 2019, 2019

TO: The Honorable Members of the Washington Fish & Wildlife Commission

Re: **WDFW ignoring leading indicators, creating "silos" and acceptance of failure are major hurdles for fish & wildlife recovery in Willapa Bay**

The mission statement of the Department of Fish & Wildlife is "*To preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities.*"[1] The Fish & Wildlife Commission states "*….its primary role is to establish policy and direction for fish and wildlife species and their habitats in Washington and to monitor the Department's implementation of the goals, policies and objectives established by the Commission.*"[2]

Due to ever-increasing dissatisfaction with WDFW management, the Legislature inserted a budget proviso in 2017 that required WDFW to consult with an outside management consultant to evaluate and implement efficiencies to the agency's operations and management practices. The consultant report recommended "*Greater oversight by the Commission*" and "*Enhanced performance / outcome measurement and publication*"

WBERT not only concurs with this assessment, we believe it is imperative that the Commission enhance its oversight and when appropriate, publicly call into question any lack of performance by the Department that results in failure to achieve policy goals. Unless the Commission takes these steps, regardless on the language contained within, we believe policies will continue to fail and be considered by the public as "*not worth the paper they are written on.*"

The problem with reliance upon language in a "Policy"

In 2010, WDFW published the Willapa Bay Management Plan[3] that stated the goal was "*Maintain and rebuild the health of salmon and steelhead populations in the Willapa Bay region.*" Repeatedly, when asked by the members of the public concerned over declining runs, WDFW stated "It's a non-binding draft". In 2015, the Willapa Bay Salmon Management Policy[4] was adopted by the Commission expressing under Guiding Principles that the Department shall "*Prioritize the restoration and conservation of wild salmon through a comprehensive, cohesive,*

[1] https://wdfw.wa.gov/about/mission_goals.html
[2] https://wdfw.wa.gov/commission/
[3] https://wdfw.wa.gov/publications/01656/
[4] https://wdfw.wa.gov/commission/policies/c3622.html

and progressive series of fishery, hatchery, and habitat actions." (emphasis added). It seems that both documents failed to deliver the intended results.

Upon passage, Commission policies generally don't provide the immediate results the public desires. As an example, the Willapa Salmon Policy was passed in 2015 and the diminished run sizes of salmon experienced in 2018 were determined by actions or inactions of WDFW and the combination of ecosystem and ocean productivity occurring in the years prior to the adoption of the current Policy. Simply put, the disappointing Willapa runsize and harvest numbers in 2018 would have remained relatively unchanged if the current policy didn't exist. While policies and mission statements are important, the actual practices utilized by WDFW prior to and after a policy is adopted are the defining factor as to whether or not the purpose is recognized by the Department. Unless the purpose is fully accepted by the Department, the goals stated within a commission policy are unlikely to ever be reached.

The policy adopted in 2015 has disappointed many who now seek to find changes in some of the current language that might see fishing opportunities improve for their gear type in the future. This effort is doomed to fail. It is not the language of the current policy or whether the words are set in a draft or final version that will lead to success. Provided, success is defined as having large enough salmon runs that can provide adequate harvest seasons.

WDFW cannot supply harvesters with fish that don't return to the bay. Quality harvest seasons in the Willapa Basin are reliant upon recovery of runsizes. Recovery of runsize is dependent upon the Commission asserting itself in a manner that results in senior WDFW management actually taking the steps necessary to improve the historical performance of the Department as it goes about fish and wildlife management in the Willapa Basin. Planning to fail, continuing to fail and the acceptance of continued failure needs to be removed from the WDFW culture.

A positive exception is that during the first four years of the Willapa Salmon Management Policy, Natural Origin Chinook (NORs) escapement has been achieved the last two years in a row in the Willapa River. WBERT attributes this success to two major factors.

First, the smolts from these NORs have the shortest run to the ocean through potentially degraded estuarine habitat. It also appears that this habitat is the least degraded in our bay. This can be explained by the relatively rapid counterclockwise rotation of our vertical boundary estuary there. Average age of the water is less than six days, whereas in the mid and south bay it is forty two to sixty days. Pollution including spray chemicals on eelgrass and burrowing shrimp are more effectively flushed out to sea in the north, as they are not in the rest of the bay. The sixty-day average age of water in front of the Bear river in south bay could explain why 2018 produced zero Chinook return, as opposed to the 400 goal.

Second, per the policy, the care and caution of using nets as explained by Director Susewind on February 21, 2019 in a letter to Senator Jesse Salomon is actually practiced under the Willapa Policy. There is no netting of Chinook prior to Sep 16th in the north. This allows significant return of early Chinook through harvest shifting to the lower mortality rate of recreational fishing. This aspect of the current policy is valuable and must be maintained in place. A well-placed fish-separating weir in the Willapa River could allow the return of more production of

Hatchery Origin Chinook (HORs) at the Forks Creek while retaining this proven success of this aspect of the policy.

The chronic overharvest and failure to reach escapement goals are directly tied to WDFW season setting and cannot be corrected by the words in a policy

Willapa Bay preseason forecasts are typically high for most species most of the time. We are told in public meetings that Willapa forecasts are more accurate than Columbia forecasts. Regardless, WDFW has repeatedly set harvest seasons that predict harvest impacts will come within a couple tenths of a percent of the maximum harvest rate caps set within the Commission Policy. The result is the seasons set by WDFW typically result in harvest exceeding the maximum harvest cap for Chinook expressed in the Policy. Exceeding the cap results in chronic failure to reach escapement goals not only for Chinook but regularly on two or more other species as well. This practice has continued throughout the period from 2010 under the previous draft policy until present under the current policy. As an example, escapement of natural spawning Coho has dropped below the goal for three out of the last four years. Yet another new dubious record.

WDFW has alternatives and means to address chronic over fishing in Willapa Bay that are well known to the Department. One example would be the preseason forecast in the Columbia for springers is reduced by 30% in the harvest model as a buffer before setting the season.[5] The reduction is combined with significant inseason management as a means to avoid overharvest on natural spawners. Region Six does not utilize these practices in a similar fashion when setting seasons in Willapa.

Declining Ecosystem productivity

Willapa Basin ecosystems are in need of management attention and evaluation if salmon run recovery goals are ever going to be reached. It's not only the salmon runs that are at rock bottom. The leading indicators of declining presence of other wildlife in the bay have been giving us notice for some time that one could expect salmon juvenile survival to decline and returning runsizes to likewise fall in the future. WBERT believes WDFW's historical failure to monitor the leading indicators of habitat productivity, waterfowl numbers, and herring spawning masses contribute to overly optimistic preseason forecasts and seasons that overharvest resulting in the failure to reach escapement goals.

WDFW has apparently adopted a practice of ignoring its duty to protect the Willapa ecosystems that are critical to promoting fish and wildlife abundance. The Department follows with not adequately taking into consideration the impacts of warming trends on ocean, bay, and freshwater ecosystems. As a result, the actions or inactions of WDFW since passage of the current Salmon Policy are a major contributor to the decline of fish and wildlife opportunities in the Bay and its tributaries. As stated earlier, unless the Commission inserts change into WDFW's normal management practices, WBERT believes any new policies or revisions to a current policy adopted by the Commission will result in continuing failure to restore runsizes regardless of the language contained within the document.

[5] https://wdfw.wa.gov/commission/policies/c3620.pdf

The "silo" styled management of WDFW is adversely affecting our ability to recover salmon runs in Willapa

As stated on WDFW news releases, "*The Washington Department of Fish and Wildlife is the primary state agency tasked with preserving, protecting and perpetuating fish and wildlife and ecosystems, while providing sustainable fishing and hunting opportunities.*"[6] As the primary state agency, WDFW has repeatedly failed to provide expertise and comments to other state departments when said agencies are reviewing permits or other regulatory actions within the Willapa Basin. Said absence on the job presents significant threat to salmon recovery and all the other fish and wildlife in the Basin. When asked by advisors and others in the public about visibly noticeable problems in the ecosystem, the typical response is "we don't do habitat".

Salmon and other different species are linked together and often rely upon the same habitat, especially with eelgrass beds in bays[7] Herring are not only a leading indicator of habitat productivity but also a key component effecting the life cycle of Chinook salmon originating in the Willapa Bay. Herring spawning mass in Willapa Bay has declined from 697 tons in 2008[8] to reportedly 34 tons in 2018.[9] Waterfowl at November peak have dropped from normal highs of 100,000 in 2012 and 70,000 in 2013 to 22,000 in 2014 which was the first year of eelgrass spraying. These are numbers from WDFW aerial counts, which were ceased after 2014. There has been no sign of recovery during the five years of eelgrass spraying.

The Forage Fish Management Policy C3012[10] passed by the Commission in 1998 spells out the Department is to conduct herring spawning habitat surveys in areas likely to face human caused alterations and provide expertise in court cases and other legal activities. The latter would include commentary to other departments such as the Department of Ecology (DOE) who has granted permits to spray eelgrass in locations known to WDFW to be the major herring spawning beds in the Bay. Is spraying chemical defoliant on eelgrass not a "human caused alteration"? Is it possible that the Department could believe herring can successfully spawn and provide salmon with a critical food chain component without eelgrass in its spawning beds?

The damage likely to be caused by the eelgrass spraying permit issued by DOE in 2014 has been known to the Department for over a decade. In 2008 the Department adopted the "Eelgrass/Macroalgae Habitat Interim Survey Guidelines"[11] stating "*In administering the Hydraulic Project Approval (HPA) process, the Washington Department of Fish and Wildlife (WDFW) requires proponents for projects to: 1) avoid impacting eelgrass and macroalgae, 2) minimize unavoidable impacts, and 3) mitigate for any impacts."* Further, the WAC adopted by WDFW governing hydraulic permit approvals by the Department states herring spawning habitats are "*marine habitats of special concern*". A "*no net loss*" approach is applied to these

[6] https://wdfw.wa.gov/news/feb2719a/
[7] https://afspubs.onlinelibrary.wiley.com/doi/full/10.1002/mcf2.10018
[8] https://wdfw.wa.gov/publications/00928/wdfw00928.pdf
[9] WDFW ceased conducting reliable Willapa herring surveys for Willapa Bay after 2008
[10] https://wdfw.wa.gov/commission/policies/c3012.html
[11] https://wdfw.wa.gov/publications/00714/

habitats. WDFW was advised by the public during the permit process of the massive loss of eelgrass habitat resulting from the spraying.[12]

WDFW has also declined numerous opportunities to provide DOE with expertise during permit processes for spraying burrowing shrimp leaving its sister agency void of the expertise on the fish and wildlife impacts of approving the permits. A primary source of food for sturgeon is these shrimp. Once abundant in Willapa Bay, white sturgeon harvest has been eliminated and green sturgeon have been ESA listed. Then, spraying requires wide ranges of the bay to be off limits for fishing and crabbing for up to 30 days during WDFW harvest seasons creating significant risk that the public would harvest fish, crab and other species unsafe for human consumption.

Members of the public repeatedly asked DOE during the spray permit process about the impacts of the proposed spraying on fish and wildlife. DOE's response was its expertise was in water quality and its role was to be a "paperwork clearinghouse" for the permit process. DOE further stated it was waiting for comments from WDFW on potential impacts to fish and wildlife. To WBERT's knowledge, DOE is still waiting.

WDFW's failure to fulfill its role in protecting the ecosystem cannot be justified as an efficiency strategy intended to prevent departmental overlap in ecosystem protection. To the contrary, as the *primary state agency*, WDFW's failure to fulfill its duties in the process created a "gap" in the regulatory process wherein the protection of fish and wildlife fell through. As pointed out above, WDFW has had full knowledge of the need to protect herring spawning grounds and eelgrass for decades. Budget limitation was not a factor that limited WDFW ability to participate in the process as it already had the adequate knowledge needed to comment. One doesn't have to conduct an expensive highway traffic study of a certain intersection to know it's not safe to cross a road without looking for other vehicles.

It's also important to note that many of the smaller rivers and streams are not free of risk that current human activity will adversely impact fish and wildlife. A recent tour of WEBERT members through freshwater streams that are critical for salmon production found industrial logging areas in the Willapa Basin going through chemical defoliation. The process begins with logging followed by spraying with herbicides prior to replanting of trees. Review of the labels of chemicals used to spray in the Willapa Basin found the chemicals are designed to kill emerged vegetation, be persistent long term in the soil, and prevent the seed bank from producing virtually any thing. The strategy seems to be kill and prevent anything originating from seed until the tree starts planted after the spraying grow and create a canopy. There is little or no natural succession. When asked about the impacts of this activity on stream temperature or habitat degradation that could adversely impact salmon, fish program staff seemed unfamiliar with these activities.

Ignoring "leading" and "lagging" indicators can negatively impact the accuracy of preseason forecasts

[12] https://drive.google.com/open?id=0B2tWjgmgVy3yZDN1Q0h4dUdKelE

Adult salmon returning to Willapa reach the Bay at ages 3, 4, or 5 years following incubation from eggs. Therefore, the runsize is a "lagging indicator" that only shows up at the end of their life cycle. However, early on in the life cycle, other wildlife populations, herring spawning, and habitat productivity monitoring can provide "leading indicators" that can allow one to anticipate what will likely happen several years later upon salmon reaching adulthood.

Monitoring of these leading indicators can help avoid being surprised by the actual number of adults returning to the bay appearing in numbers far less than needed to sustain or recover natural spawners while still providing fishing opportunities. Monitoring leading indicators also alert harvest managers of a potential need to take a conservative approach to avoid overharvest when setting seasons in the future.

Another example of WDFW ignoring leading indicators is found in review of the Pacific Flyway Brant Management Plan.[13] These birds of concern are present in Willapa Bay during wintering and Spring staging. Their diet here consists entirely of eelgrass of both species.[14] The beds they frequent include beds where spraying is allowed and herring also spawn. A decline in forage at this major stopover is unacceptable. The Plan gives a priority one to WDFW waterfowl manager inventorying eelgrass here and also priority one to "participating in environmental reviews." We know of no plans to do this.

Our waterfowl are no longer supported in the Willapa Basin as they were up through 2013. They still come through, but gain limited sustenance here and November peak numbers are low. All that supports them, eelgrass[15] and associated invertebrates being the obvious, has been subjected to chemical removal without ongoing inventory. The results are drastic. Declining harvest numbers are documented in the Waterfowl Regulation pamphlet long term averages. Annual declines in harvest are clearly more drastic.

Taxpayer investment into habitat restoration projects will not cure the problem

As is the case across the state, taxpayers have invested millions of dollars in habitat restoration projects in the Willapa. Most of this massive investment has been promoted as a means to recover salmon runs. The investments in dike busting, woody debris enhancements, culvert replacements and other measures have paid no visible dividends for salmon recovery in the Willapa Basin.

As an example, a multi-year million dollar dike busting "restoration project" near the mouth of the Bear River began in 2012 with the expressed goal that "*Restoration will benefit a diverse array of species including chum and Chinook salmon…..*"[16] Locals hoped this project might increase the run of Chinook historically found in the Bear. To the contrary, Chinook counts in the Bear reportedly dropped to zero in 2018.

[13] https://digital.osl.state.or.us/islandora/object/osl%3A80721
[14] https://sora.unm.edu/sites/default/files/journals/condor/v097n01/p0091-p0098.pdf
[15] https://www.int-res.com/articles/meps/103/m103p119.pdf
[16] https://www.fws.gov/refuge/willapa/bear_river_estuary_restoration.html

Increasing runsizes through increased hatchery production might not be possible in Willapa Bay

There is an understandable push by some to "raise more hatchery salmon" for the ORCAS and WDFW sanctioned harvesters. It seems clear that the days are over when WDFW could simply push out more hatchery fish and that action on its own would increase proportionate numbers of returning adults. WBERT believes climate change and declining ecosystem productivity in fresh water and the bay are directly connected to salmon runs declining to the point it is now difficult for the WDFW to even reach hatchery egg take goals in Willapa. Then, the harvest rates applied to catch the hatchery fish have taken a toll on natural origin spawners. Gravel production is continuing to fall and this trend will likely continue to decline even further in the near future.

It's not only an investment in modernizing facilities that is required to increase hatchery production in a manner that ends up increasing the numbers of returning adults. The habitat productivity found in freshwater and the bay determines the "load carrying capacity" of the ecosystem. The ecosystem acts like a governor on a tractor limiting the power coming out of the motor. Hatchery releases in excess of the capacity simply means the juveniles don't survive the journey down streams and across the bay on their way to the ocean. Lower fall flows and warmer stream temperatures can limit the number of adults reaching the hatchery in spawnable condition. Again, regardless of the size and production capacity of the hatchery, nature limits the production of the hatchery by limiting the number of eggs available and the survival rate of juveniles released.

Take the Naselle River where the hatchery is set for a mega million dollar rebuild. Is the river or bay capable of handling 3,000,000 releases or is the number 5,000,000? When asked during public meetings, WDFW admitted it did not have the data needed to make such a determination in hatchery streams flowing into Willapa Bay. If not likely, it is certainly possible the environmental conditions found in the Naselle and the southern end of Willapa Bay will not handle the number of releases that a rebuilt hatchery could potentially release.

Our existing hatchery operations have not responded adequately and do not appear prepared for challenges of the ever-increasing warming trends. Some legislators, many in the public and perhaps even WDFW believe a switch can somehow be flicked and more fish will return in future seasons. Such is not the case.

These comments are not directed to a hypothetical situation. Frequent recent disasters with massive adult die-off below or in the hatcheries in Willapa have plagued hatcheries with a lack of egg take to the point season closure occurred to assist in attaining egg take goals. WDFW often chalks this problem up to bad years, bad luck, bad weather, and inadequate budget for hatchery maintenance. There seems to be no visible sense of urgency within WDFW regarding these problems. Bottom line is we are not prepared to send, and our ecosystems are likely not prepared to receive, the increase in hatchery production many would like to see in the future.

WEBERT has the following recommendations. These can go a long ways to turn this degradation around.

1. The Commission should receive regular briefings from senior management on the preparedness of hatchery management and staff to efficiently receive and spawn salmon as assigned. If they are not prepared they should say so and provide appropriate consideration and initiate corrective action. We see this now as a systemic problem.

2. It seems clear that or basin ecosystems are not in condition to support the biological life we have listed, both plant and animal. These ecosystems can nurture little of what we have listed that is in trouble. These ecosystems need to undergo an immediate health report, including eelgrass mapping. The Department must oppose any further chemical removal of eelgrass in Willapa Bay until and unless it can be restored to levels documented in 2006/2007 by Dumbauld and Echeverria.[17] WDFW appropriate management must participate actively in all appropriate environmental reviews, be they the obvious ones such as NPDES pesticide permit proceedings, or less obvious such as dike busting or harrowing of bay bottom. This goes far beyond HPA permitting now underway. Many things by WDFW judgment require no HPA permit. This must not mean they receive no management. Again the Commission should take the lead, along with the director, on getting this done. Annual goals would be in order.

3. Our waterfowl are no longer supported in the Willapa Basin as they were up through 2013. They still come through, but gain limited sustenance here and numbers are low. All that supports them, eelgrass and invertebrates being the obvious, need inventorying and immediate recovery, with progress reports quarterly, to the Commission or an appropriate subcommittee. Perhaps an ecosystem subcommittee could be considered. Much of the best waterfowl habitat will coincide with salmon smolt habitat, and can be considered a leading indicator.

4. Our sturgeon are nearly gone. Their major food has been repeatedly sprayed and is under threat for more eradication. A plan for recovery is needed and regular reports from wildlife as well as fish departments, working together, will be needed.

5. Herring spawning mass provides food in the planktonic chain and forage for ocean Chinook which feed Orca. A few surveys with a planned report in four years is unacceptable. Seven hundred tons to zero then 37 tons in twelve years, with the first report coming in four more years? Apparently this needs to be on a list of Commission requirements. You already have a good forage fish policy. Please apply it to the whole state.

6. Pacific Brant do not appear to be supported by the Waterfowl Division with respect to Willapa Bay. The bay has no inventory of habitat and like herring spawning beds that frequently coincide with brant feeding grounds, does not receive any visible protection. All beds are subject to spraying in the loosely worded permit, soon to expire. Timing is good to get on this one. Must be mandatory, apparently.

7. A study of smolt habitat in Grays Harbor has shown eelgrass beds, including mixed beds, are the most important bay habitat for Chum smolts and highly important for Chinook smolts.[18] We must have formal requirements of management to protect them accordingly. Grays

[17] https://drive.google.com/open?id=1YPrdgyf2PUOcCPQ95V52C1QatU9AAB0L
[18] http://wildfishconservancy.org/projects/grays-harbor-juvenile-salmon-fish-community-study/WFCGraysHarbor2013AnnualReport.FINAL2.pdf

Harbor now has better returns and harvest of Chum than Willapa, a historical Chum bay. Chinook returns are less than escapement across the bar, before any harvest. Per current policy, Chinook are the only sport priority. The Commission made it clear that enough Chinook need be available to allow commercial access to its Coho priority. It appears that in 2018 over 15% of the 20% maximum harvest rate for Naselle NOR Chinook were applied by nets. Of course this hurt escapement. We trust that the Commission can take care of this one. In 2018, once again, Chinook conservation and sport priority finished last in Willapa Bay.

Sincerely-

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