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Comments on Proposed NOAA/EPA Disapproval of Oregon's Coastal Nonpoint Source Pollution Control Program

[[Note: these comments are also being sent electronically to Joelle.gore@NOAA.gov]]

Please consider the general and more specific comments below.

General Comments:

- It is not clear exactly why public comment is required on the NOAA-F and EPA's (Agencies) analysis as long as their justification or statement of intent to approve or disapprove the program (Proposal) is based solely on pre-established criteria and valid scientific grounds. Overall, I find this to be the case, and further that the technical analysis in the Proposal is generally robust with respect to the issues it examines.
- The plan and program being reviewed by the Agencies in their Proposal is inadequate from both a Clean Water Act and Endangered Species Act perspective. Designated instream beneficial uses and federally listed aquatic species' needs are not fully supported; therefore, disapproval of the plan (program as described) seems entirely warranted.
- The plan under review by NOAA-F and EPA does not demonstrate that Oregon has an actual *program* in place or soon to be in place that contains sufficiently described required voluntary measures, already (or soon to be) implemented components, regulatory procedures or follow-up enforcement measures, and as such it fails to meet critical benchmarks of an approvable NPSPC program. There are simply no meaningful regulatory assurances in the plan to protect water quality and designated uses.
- Voluntary measures or promises alone will not work; what are needed are clearly enforceable measures, regulatory linkages and management controls. The Coastal Zone Act Reauthorization Amendment (CZARA) specifically requires coastal states to have enforceable controls on nonpoint sources of pollution in order to continue to receive federal grant funding. Protecting water quality and enhancing and restoring the many designated uses of streams and rivers also benefits a large array of businesses that support fishing, boating, wildlife viewing, and river

recreation. Thus, there are valid economic as well as scientific reasons for NOAA-F and EPA to reject this plan and for Oregon to re-draft and re-release a tighter, more enforceable Nonpoint Source Pollution Control (NSPC) plan and program.

More Specific Comments:

- Salmon habitat and demographic indicators, not to mention continued federal species listings show that the salmon resource(s) in the State of Oregon have been and continue to be declining. Habitat degradation is acknowledged by watershed experts and fishery scientists to be the most widespread cause of historic and current salmonid declines. “Habitat degradation” includes a broader set of concepts than “water quality degradation.” However, there is a great deal of overlap between indicators of habitat and water quality as the comments below will attempt to show.
- The generally accurate analyses of plan and program inadequacies provided by NOAA-F and EPA in their Proposal don’t fully examine the interconnectedness of physical habitat attributes and more traditionally accepted physiochemical aspects of water quality (e.g., temperature, minimum flow, nutrient levels, specific levels of industrial pollutants, etc.)
- This apparent severing of “water quality” from physical habitat functioning allows for a narrow-minded view of what may officially, or legally qualify as water quality impairment or degradation.
- Other historical attributes or biological components of watersheds that allow for or maintain broadly defined habitat and water quality are often ignored both in State assessments of water quality, as well as the NOAA-F and EPA reviews. For example, coastal Oregon watersheds historically had less frequent and more localized disturbances than at present (mainly landslides, debris flows/torrents; very few or no large fires). There were few or no larger disturbances capable of significantly affecting system-wide physical, chemical or ecological attributes such as stream and floodplain functioning, sediment and large wood dynamics, and nutrient retention. There were more “pulse” type disturbances, distributed patchily and asynchronously. Beaver were also present in many areas and their notable engineering efforts helped to maintain slower velocity environments that increased sediment storage and nutrient retention and processing. Greater amounts of Large Woody Debris (LWD) in streams contributed by older forests and intact riparian areas, as well as large shifting beaver complexes, helped to maintain floodplain connectivity, lateral and longitudinal complexity, groundwater to surface water connectivity, and hydrologic stability. Periodic high flows were moderated, seasonally critical minimum flows were maintained, and evidence suggests overall streambank conditions were more stable. In turn, streambank and channel stability and floodplain integrity are intimately related to sediment,

- nutrient and wood routing and retention. Nutrient spiraling was tighter (nutrients entering the system were retained and incorporated by food webs locally). The streams more efficiently processed their own “waste” materials, and at the same time maintained high levels of biological productivity.
- Legacy Impacts are not addressed. Typical management of coastal lands includes uniformly and continually poor treatment of physical habitat functionality across large landscapes and watersheds. “Press” type (chronic, persistent, unremitting) disturbances by most if not all land use types (agriculture, livestock, logging, rural and urban development, etc.) as well as widespread legacy impacts such as past, intensely focused efforts at LWD removal, beaver eradication, and active channel simplification have and continue to contribute to cumulative habitat and water quality degradation in all coastal river basins. Lower reaches of coastal streams show and temporally accumulated evidence of this in the form of denuded riparian areas, large areas of alternating scour and deposition, very low stability of LWD, low instream wood volumes and smaller sizes of LWD, unstable banks, straightened and simplified high energy channels, and few or no beaver or beaver dams or complexes. LWD “jams” or accumulations in headwater source streams store sediments and nutrients high up in the watershed, and as key “roughness elements” also reduce the potential for intensive and extensive flooding and scour. Less overall downstream transfer of fines results in lower amounts of sediment deposition which can reduce salmonid spawning and emergence success. Less scour protects fall spawning fish incubating through the winter and early spring, and also allows spawning gravels to persist and remain stable in spawning and rearing locations. LWD accumulations increase pool depths, sizes, and frequency which contribute to overall habitat volume and complexity as well as “water quality”
 - Overall the NOAA-F and EPA analyses are correct that at least several major areas of the coastal NPSPC program are in need of significant improvement and/or additional management measures. Some of the areas identified are: measures for forestry, new urban development, and septic/sewer systems (note: the Agencies should broaden the latter to include measures to improve nonpoint source treatment and control of stormwater, urban surface, and road related runoff; similarly the Agencies should include both new and older urban development and infrastructure)
 - Although NOAA-F has tentatively approved the Agricultural (ODA) measures they are clearly insufficient, as will be explained further below.
 - Overall, there is a very strong scientific and technical basis for the Proposed Disapproval. However, while one can easily find overwhelming amounts of scientific literature to support the NOAA-F and EPA analyses, there are several issues that the Agencies do not include and should address in evaluating any future submissions by the State: interconnected habitat and water quality factors and legacy issues, beaver management, watershed and riparian factors influencing

water quality, novel human chemical contaminants, over-allocation of water, urban runoff from older as well as newer developments, and little consideration given to the importance of maintaining groundwater flow connection(s), and climate changes.

- The role of beaver and beaver dams in moderating flows and improving water quality in the broadest sense(s) should be included and examined. Measures should be included to cease or scale back beaver eradication efforts, and also to facilitate and promote beaver re-establishment in suitable locations.
- Other watershed and riparian factors and conditions that contribute to or prevent the maintenance or instream biological productivity and biodiversity should be considered. High watershed road densities (whether expressed as miles of road per square mile or as riparian road miles), the high number of road/stream crossings in watersheds, the high percentage of watersheds that have been clear-cut harvested, or that have generally poor riparian condition are examples of larger scale contributors to poor downstream water quality.
- Oregon Department of Forestry (ODF) needs to revise their forest practices. Progress in doing so should be overseen and carefully monitored by the Governors Office and ODEQ. Oregon Forest Practice BMPs are outdated and pose a continual “press disturbance” on the forested landscape, reducing the health and productivity of watersheds and remaining functional salmon habitats on non-federal lands. NOAA-F pointed out six major deficiencies of the ODF rules back in 1996, as part of ODF measures promoted by the State under the Oregon Coastal Salmon Initiative. Briefly these are: 1) inadequate non-fish, intermittent and small to medium sized fish bearing stream riparian buffer protection (not only as pesticide-application buffers, but for many other physical and water quality reasons too numerous to list), 2) poor or no remediation of extensive legacy road networks and road-related impacts, 3) poor or no measures or requirements to protect unstable, landslide prone areas, 4) lack of watershed analysis or development and implementation of watershed-based standards, 5) inadequate riparian LWD retention and delivery to streams of all types and 6) lack of any form or cumulative effects assessment (applies to all the above and more). Sadly, little or no progress has occurred on any of these issues that were raised nearly 17 years ago. Five of the six issues raised by NOAA-F were affirmed in subsequent peer review by an independent scientific panel (two of the six issues were lumped together by that panel, none of the six issues were found to be in error). An issue not formerly addressed by NOAA-F is alder conversion, which is allowed under the ODF rules. Alder are an important component of coastal watersheds, and are a contributor of naturally produced coarse and fine particulate organic material (leaves, branches, stems) with a high nutritional content supporting invertebrate production and overall biological activity (fish, beaver, amphibians, etc.). Alder boles and branches are heavily utilized by beaver and widespread alder conversion is in direct conflict with beaver reestablishment.

- The Oregon Department of Agriculture's poor past and ongoing efforts at regulating agricultural and livestock practices that harm salmon and other biota are not acknowledged in the NOAA-F and EPA's analyses. Missing (suggested additional) measures to adequately protect water quality include: 1) minimum required riparian buffers on commercial agricultural lands to minimize stream thermal increases, and reduce soil loss, sedimentation, down-cutting and channel- and bank instability (Note: the published literature suggests a buffer width of no less 100 feet, or 30 meters. Buffers wider than 100' might be necessary on low gradient channels that might meander, and adjacent to designated critical habitats for listed species, for example core salmonid spawning and rearing areas); 2) fencing streams and riparian areas to reduce or eliminate trailing, trampling and fecal contamination by livestock; 3) improved permitting, monitoring and re-location of Combined Animal Feedlot Facilities (CAFOs), and 4) regulatory provisions (with or without incentives) to promote reestablishment of riparian vegetation in critical habitats and to promote beaver reintroduction in suitable locations. These are just a few of the types of additional measures that should be considered. ODEQ should take the lead to ensure that ODA moves quickly on these and other obvious improvements in consultation with NOAA-F and EPA. Once again, NOAA-F has been painfully aware of these and other deficiencies in the ODA's management measures since their initial review of the State's Coastal Salmon Initiative. In the past 17 years very little has changed, and in fact more salmon species are federally listed now than before. Unlike the ODF measures that were peer reviewed and validated by an independent panel, these and other possible ODA measures have not been peer reviewed. I believe that this would be relatively easy to accomplish because many of these improvements are – technically speaking - “no-brainers.” NOAA-F and EPA have asked the public to comment on whether the State's agricultural measures as currently described are adequate and the answer is clearly no. The additional measures described above would be a good place to start.

- Inadequate management of coastal sewage and septic systems contributes significantly to water quality degradation of coastal waterways. Little is mentioned in the Proposal about recent findings along the Oregon coast of detectable amounts of a variety of novel chemicals, including those found in over-the-counter and prescription drugs, birth control pills, pain medications; and caffeine. These new “pollutants” are showing up in places within coastal ecosystems where humans concentrate, older septic/sewer systems are leaking, and more modern waste treatment systems are poorly developed. Presumably, many of these same chemicals are also delivered to reaches of rivers and streams adjacent to rural settlements. The Proposal would be strengthened if reference were made to these studies. Researchers have determined that caffeine is a useful and easily detectable marker of these and other novel contaminants. Moreover, no lab studies have been conducted to determine the impacts to salmon or other stream biota of a mixture of Viagra, Prozac, aspirin, estrogen, and caffeine (not to mention any interactive effects of these with herbicides, pesticides and chemical fertilizers).

- Over-allocation of streams by water withdrawals and wells. Most coastal streams are over allocated with too many individual water users collectively reducing water volumes and flows. Lower and slower flows cause useful stream habitats to shrink; habitat depth generally decreases and there may also be a reduction in connectivity between the stream and its floodplain. In some stream types, there may be a reduction of surface to groundwater connectivity, reducing access by fish and amphibians to cooler, higher quality water late in the season. Hyporheic flows (flow emanating from groundwater) can often be a vital life support for sensitive species during times of stress. Extensive water withdrawals and wells can reduce the exchanges of water between cooler, nutrient rich, and highly oxygenated groundwater and surface waters exacerbating generally lower, late season, stream flow conditions.
- Climate changes, including global and regional increases in mean air temperature, earlier and heavier late winter and early spring flooding, and lower late summer flows, not to mention increased salinity in estuaries and tidally influenced lower river reaches from projected sea level rise – all of these changes will make water quality protection and improvement even more critical in the near-term to distant future. As stream volumes decline in late summer toxicant concentrations will be higher for a given set of sources or inputs. On the other hand, winter flooding may also increase the number and types of sources in contact with streams and rivers. Higher ambient stream temperatures may increase the physiological activity and hence biological impacts of certain toxicants. Climate stressed organisms will be more sensitive to common toxicants or pollutants. Sea level rise and storm surges (combined with extreme winter storms and flooding) will likely cause human infrastructure failure and this may result in releases of chemicals at industrial sites, oil and gas facilities, waste facilities and chemical storage sites, etc. The Proposal should consider climate change impacts, which on balance would appear to increase the likelihood of non-attainment of water quality standards, in some cases by presenting new or enhanced pathways for non-attainment.

Thank you for the opportunity to comment!

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