STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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September 29, 2017

Ms. Catherine Gockel
Environmental Protection Agency
Office of Water and Watersheds
6th Avenue, Suite 900
Seattle, WA 98101-3140

Re: Ecology's Federal Consistency Concurrence with Conditions on the NPDES Draft General Permit for Offshore Seafood Processors in Federal Waters off the Coasts of Washington and Oregon

Dear Ms. Gockel:

The Department of Ecology, Washington State's Coastal Zone Manager, issues the following decision on the Environmental Protection Agency's (EPA) Consistency Determination for the General Draft NPDES permit, which would allow offshore fish processors to discharge waste waters off Washington's coast.

DECISION: The Department of Ecology is issuing a "Conditional Concurrence" on the EPA's Consistency Determination for its draft NPDES permit submitted to Ecology on June 19, 2017. The State's original federal consistency decision due date was August 18, 2017, with one extension until September 12 and another until September 30, 2017, as agreed to by the EPA. As written, the Consistency Determination for the draft permit does not meet Washington's Coastal Zone Management Program's (WCZMP) enforceable policies. The conditions contained in this decision will allow EPA's permit to be consistent with the WCZMP's policies: specifically, those found in the State Water Pollution Control Act and its implementing standards and regulations. While further detailed in the Conditions section at the end of this document, Ecology's conditions include:

- A year-round discharge prohibition inside the 110-fathom depth contour.
- Specific monitoring requirements.
- Processors discharging under the effluent limitations established in 40 CFR, Part 408, Subpart U - Non-Alaskan Conventional Bottom Fish Processing Subcategory and 40 CFR, Part 408, Subpart V Non-Alaskan Mechanized Bottom Fish Processing Subcategory may operate year round inside and outside the 110 fathom depth contour without additional monitoring.

These conditions will assure Washington that the effects from the waste discharges will be either eliminated or alleviated by keeping them off Washington's continental shelf year-round when fishing and waste discharging will or could occur.

BACKGROUND

In the past two years, the Department of Ecology (Ecology) has given the EPA comments on its preliminary draft (October, 2015 and February, 2017 letters) and then on the draft NPDES permit (August 3, 2017 letter), which would allow multi-millions of pounds of fish-processing waste to be discharged yearly in waters outside the three-mile state boundary. Ecology has expressed grave concerns with the effects of those discharges on ocean and coastal health and specifically on Washington's coastal resources and uses. Those damaging effects include exacerbation of hypoxia, ocean acidification, and harmful algal blooms and the impact those conditions will have on the State's water quality, fish resources and fishing industries, and on other ocean and coastal uses and marine life.

The EPA has acknowledged that there is insufficient evidence and knowledge relating to the effects that the discharges have had and will have on Washington's coastal waters. The EPA finds that, absent sufficient knowledge, it is acceptable to continue to allow vast quantities of waste to be dumped into the ocean waters. Additionally, they have not included a robust, effective monitoring plan nor called for additional research prior to permitting the discharges. In contrast, Ecology stands on the prudence principle: taking a cautious, long-sighted approach – one that calls for reasonable restrictions while additional information becomes available about the discharges' effects.

Through both written and oral comments, Ecology has indicated that in order to be consistent with Washington's Coastal Zone Management Program (WCZMP), the EPA must demonstrate consistency with the Program's enforceable policies that would apply to the allowable discharges, namely the State Water Pollution Control Act and its implementing standards and regulations. The EPA has not met the CZMA requirement to demonstrate compliance with these state provisions.

In light of the foregoing, Ecology is issuing a Conditional Concurrence to the EPA, and inclusion of these conditions in the final permit will render the permit consistent with the WCZMP. Under *Title 15: Part 930 – Federal Consistency with Approved Coastal Management Programs, Subpart A – General Information, 930.4 Conditional concurrences*, if the state issues a conditional concurrence, the state must "include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with the specific enforceable policies of the management program, and an identification of the specific enforceable policies." If EPA does not incorporate these conditions into its final permit, then the State's conditional concurrence shall be treated as an objection. EPA must immediately notify Ecology if its conditions are not acceptable.

Furthermore, under Subpart C – Consistency for Federal Agency Activities, 930.31 Federal agency activity, subsection (d), if Ecology's conditions are not incorporated into the general permit, or Ecology objects to the general permit, then the EPA shall "notify potential users of the general permit that [it] is **not available** for use in" Washington **unless** an applicant who wants

coverage under the permit provides Ecology with a consistency certification (pursuant to 15 CFR Part 930, Subpart D). Ecology can either concur with the certification, or, if it objects, the applicant can appeal to the Secretary of Commerce, who can override Washington's objection. See 15 CFR § 930.31(d). Therefore, Ecology believes all parties involved, including the permittees, will benefit from resolution during this federal consistency review period rather than engage in potential future federal consistency review processes.

APPLICATION OF CZMA

Ecology is aware that there is some confusion and disagreement revolving around the applicability of the Coastal Zone Management Act (CZMA,) and its requirements to this permitting activity. The EPA is correct in its statement in the Consistency Determination that the CZMA…*"requires each federal agency activity, within or outside the coastal zone that affects any land or water use or natural resource of the coastal state, to be carried out in a manner which is consistent to the maximum extent practicable with the approved State management program. Each federal agency carrying out such an activity must provide a consistency determination to the relevant State agency…"*

The EPA's determination also states that, ***"seafood wastewater discharges covered by this General Permit could potentially affect Washington waters, depending on wind/current conditions***. (emphasis added) and ***"EPA agrees with Ecology that coastal effects are reasonably foreseeable, the EPA has prepared a consistency determination."***

The EPA's statements above serve as an acknowledgement that the issuance of the proposed permit, i.e., the federal agency activity, will have foreseeable, potential effects on Washington's coastal resources and uses. Regardless of the fact that the actual discharges will occur in federal waters only, the CZMA applies because the discharges have the potential to adversely impact coastal resources such as fish and shellfish and thus uses such as Washington's fishing and aquaculture industries.

The EPA states that the General Permit only applies to federal waters, and its Consistency Determination (CD) continually stresses that the discharges are in federal waters, however, discharging directly to federal waters does not ensure that there will not be adverse effects to Washington's coastal resources and uses. The discharges are likely to affect Washington's coastal resources through exacerbating dangerous conditions such as hypoxia, ocean acidification, and harmful algal blooms.

During Ecology's public comment period, one commenter stated that because the WCZMP has concurred with groundfish harvest requirements over the years, it must then concur with processing waste discharge permits for that harvest. However, the actions are separate, even if they are related to an overall activity. Moreover, they are regulated by different federal agencies and federal laws. Harvest requirements are consistent with the applicable enforceable policies of the WCZMP, but different enforceable policies apply to the discharge of seafood processing waste than to harvest of fish and thus a different analysis of enforceable policies and coastal effects is necessary.

The discharges have potential to harm Washington waters, insofar as they affect Washington's coastal water quality, and the resources relying on water quality. The EPA must demonstrate that the effects from issuing the NPDES permit meet the enforceable policies of WCZMP. The applicable enforceable policies center around those found in Washington's Water Pollution Control Act and its implementing regulations and standards.

EFFECTS

As explained above, the CZMA calls for federal agencies to review their proposed projects and activities to determine if they will have foreseeable, potential effects on states' coastal resources and uses. If there are such effects, then the federal agency must prepare a consistency determination describing how the proposed activity or project meets the states' coastal zone management programs by demonstrating consistency with the applicable enforceable policies of the programs.

In this case, EPA prepared a consistency determination, thereby acknowledging effects to coastal resources and uses within Washington and Oregon's coastal zones. Ecology agrees with the EPA that the millions of gallons of fish waste products allowed to be discharged yearly inside the 110 Fathom depth off the Washington and Oregon coasts have reasonably foreseeable effects on the States' coastal resources and uses. The permit would allow: seafood processing wastewater and wastes, including the waste fluids, heads, organs, flesh, fins, bones, skin, chitinous shells, and stickwater produced by the conversion of fish parts from a raw form into fishmeal; wash-down water including disinfectants; sanitary and domestic wastes and graywater associated with the kitchen, sink, shower, and toilet effluents; and other wastewaters including cooking water, boiler water, cooling water, etc.

The EPA's proposed permit conditions do not alleviate Ecology's concerns about the direct, indirect, and cumulative effects on its coastal water quality. Washington's coastal waters are likely to be degraded and marine life will likely be impacted from discharges settling on rocky reef habitat and on fish eggs smothered from settling discharges and discharges fouling harvested resources as well as gear, including nets. Economic stress on Washington's fishing and aquaculture industries is a serious concern.

For example,

- A National Ocean and Atmospheric Administration (NOAA) News Release dated July 23, 2015, titled "NOAA awards $88,000 in grant funding to respond to West Coast harmful algal bloom outbreak," stated: "In May, the razor clam fishery closed resulting in an estimated $9.2 million in lost income. The state's commercial crab fishery, worth roughly $84 million annually, has also been affected."
- A study from 2009 conducted by NOAA and the University of Washington estimated that a yearlong ban on recreational razor clam digging in the state would result in a $22 million loss to local tourism and other industries.
- Commercial crabbing was closed from June 5, 2015 – August 28, 2015 (North coast, the South Coast remained closed until the end of the season, September 15, 2015). Using NOAA's annual worth figure the June 5, 2015 – August 28, 2015, North and South Coast Dungeness crab closure had an economic impact of nearly $20 million.

Lack of Information
Prior to discussing specific coastal effects, Ecology questions how a complete effects evaluation can be provided when the EPA acknowledges an important fact: not enough is known about any of the conditions that EPA mentions in its Fact Sheets, which include the following statement:

"This will be the first time an NPDES permit has been issued for offshore seafood processing waste off the coast of Washington and Oregon. As such, the EPA has not received complete Notices of Intent for permit coverage, and ***the EPA has not received sufficiently detailed information from offshore processing vessels about the nature and location of the discharge. What is known is that seasonal hypoxia is already occurring at the seafloor in areas of broad continental shelf off the coast of Washington and Oregon, and that seafood processing detritus is high in nutrients. The extent to which seafood processing waste will further contribute to hypoxic conditions at depth is not known."***

Water Quality
Water quality is important for species, habitats, and human health. For some water quality parameters, Ecology has developed enforceable water quality standards to protect beneficial uses including human contact and aquatic life uses (e.g. salmonid migration, rearing, and spawning). The state is also required to use these standards to prepare a list of water quality limited segments under the Clean Water Act and EPA's implementing regulations. The state standards include those aimed at dissolved oxygen and pH levels in marine waters.

Hypoxia
Dissolved oxygen in the water is essential for all aerobic marine and estuarine life. Dissolved oxygen levels are primarily influenced by temperature, gas exchange with the atmosphere, and water source. Waters with high levels of respiration can become decreased in dissolved oxygen, either from an excess of nutrients producing decaying organic matter, or from deep ocean waters with a prolonged absence of photosynthesis. Colder water holds more dissolved oxygen, and warmer water holds less. Deep waters beyond the continental shelf naturally have low oxygen concentrations (Hypoxia). Hypoxia in Washington continental shelf and coastal waters is related to upwelling. Upwelling delivers oxygen-depleted water up from the bottom to the surface, periodically causing hypoxic or even anoxic (no oxygen) conditions. The layer of deep water along the upper continental slope extending to depths greater than 1,000 meters (3,280 feet) that has persistently low oxygen is called the oxygen minimum zone. Historical data suggests that this normally hypoxic layer is showing trends of increased temperature and even lower oxygen (Office of National Marine Sanctuaries, 2008).

Decreased oxygen levels in already low-oxygen deep waters or the intrusion of low-oxygen waters into shallower areas towards shore (via upwelling) can stress communities and kill marine organisms (Office of National Marine Sanctuaries, 2008). In 2006, hypoxic conditions were severe enough to cause widespread fish and invertebrate mortality along Washington and Oregon coasts (Chan et al., 2008; Office of National Marine Sanctuaries, 2008). Data indicate that the frequency, intensity, and extent of hypoxic conditions off of Oregon's shelf waters has been increasing since 2000, and anoxic conditions had never been recorded before 2006 (Chan et al., 2008).

The EPA's Fact Sheets (2017 Draft, 2015/16 Preliminary Draft) acknowledge that:

"…hypoxia in the Northern California Current is highly seasonal, patchily distributed in both time and space, and can potentially affect over 60% of the continental shelf. Several regions, particularly the wider shelf areas, such as Heceta Bank off Oregon and ***much of the Washington shelf, are the most prone to early development and persistence of hypoxic bottom waters. Sediment oxygen demand causes the Washington coast to be susceptible to hypoxia*** *and is associated with the broad area of shallow shelf (<60 meters) (Siedlecki, et al., 2015). Low-oxygen conditions result in negative habitat impacts for many organisms (Siedlecki, et al., 2015)."*

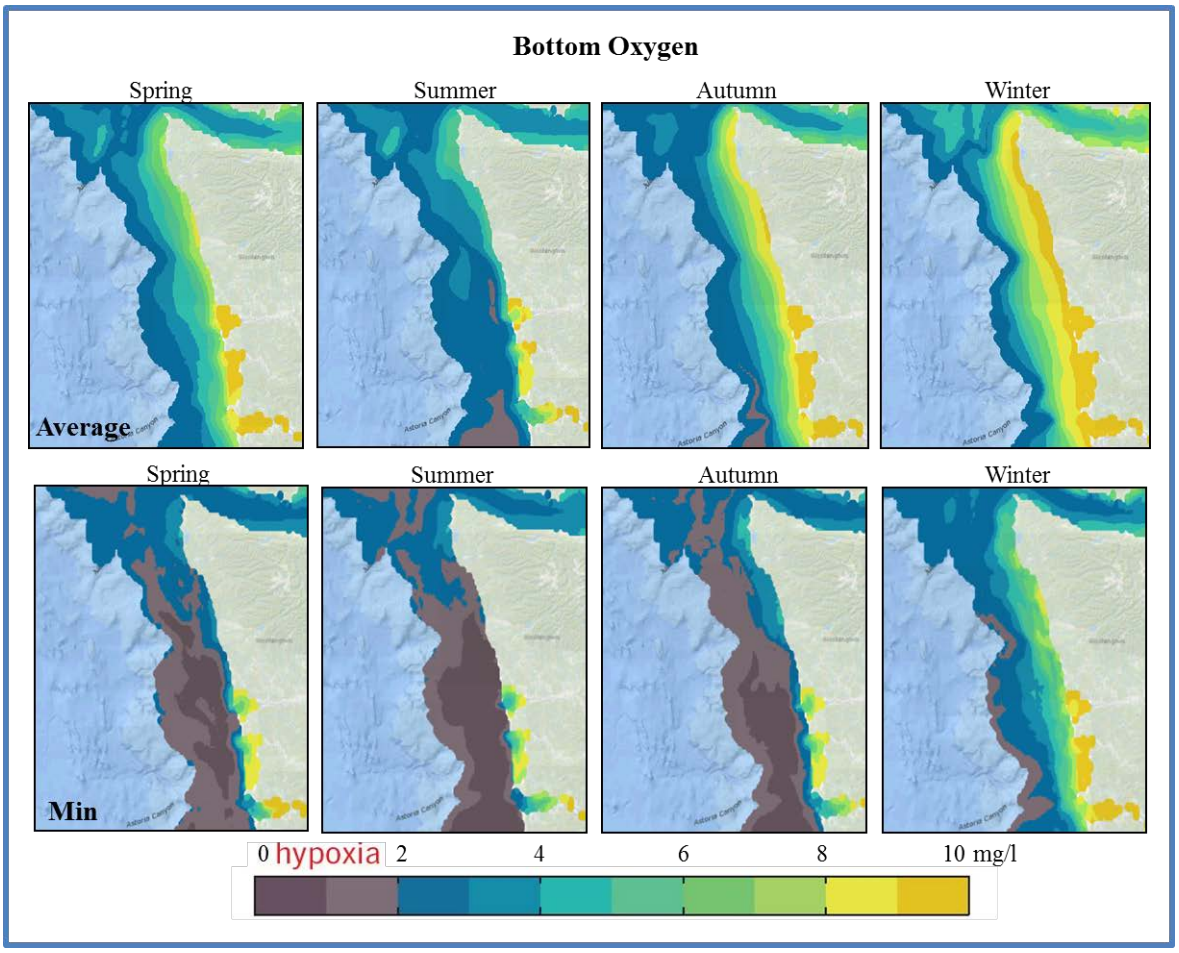
As we have stressed for the past two years, Ecology is concerned that these conditions could be intensified by the increased respiration from organisms consuming the additional pollutant loading from the discharges.

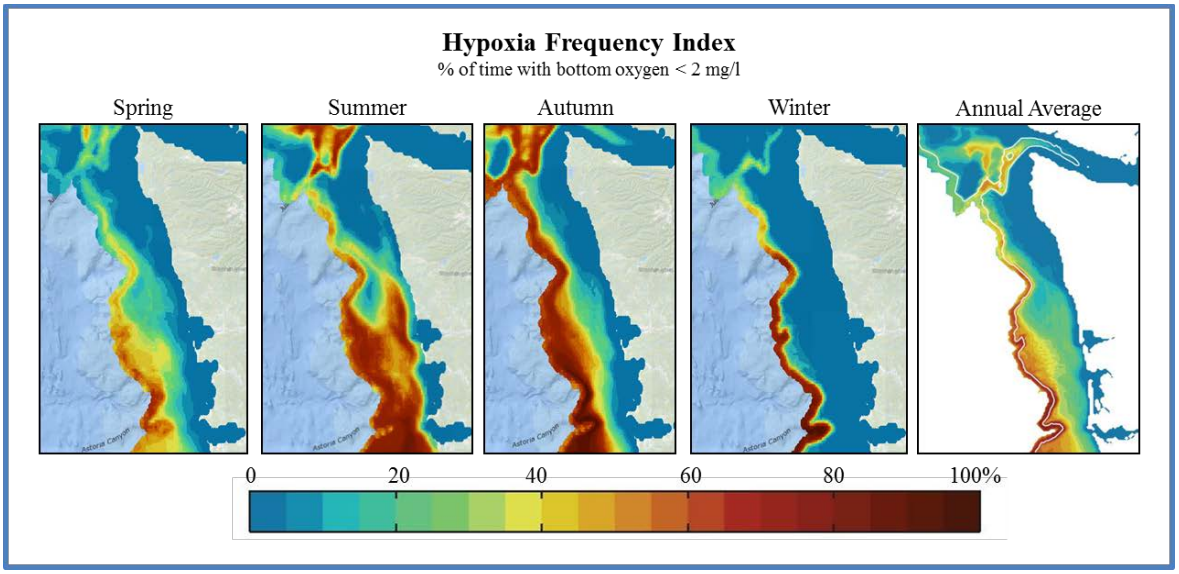
The Fact Sheets go on to say:

"Although high primary production [from nutrient inputs] produces oxygen at the surface, the system is driven toward hypoxia when the particulate organic carbon sinks and respires into water already low in oxygen (Siedlecki, et al., 2015). ***Seafood processing waste not consumed at the surface has high biochemical oxygen demand, and could contribute to near-bottom hypoxia off the coast, particularly in wide shelf areas that already experience high sediment oxygen demand****. Even if dissolved oxygen has already reached hypoxic levels at the continental shelf break, respiration can further exacerbate hypoxic conditions as bottom water moves shoreward over the shelf, especially if surface organic carbon sources are sizable (Grantham, et al., 2004). Once nutrients sink to the bottom off the Washington and Oregon coast, they stay on the shelf until circulation patterns are strong enough to flush them away (Siedlecki, et al, 2015)."*

EPA's Ocean Discharge Criteria Evaluation for the draft permit estimates the amount of solids that would accumulate on the bottom to be 0.5 cm deep in a worst case scenario. The Oregon Department of Environmental Quality (OR DEQ) estimated that the total amount of solids discharged at sea per vessel, per trip to be 433 to 844 metric tons. OR DEQ estimated the BOD loading to be 710,000 pounds of BOD per vessel per trip. Additionally, according to the 2017 Fact Sheet Chart showing the amount of material discharged in a year from 16 possible vessels off Washington and Oregon Coasts to be in excess of 21,000,000 pounds.

These numbers demonstrate that very large sources of BOD in already-hypoxic waters are being added to the waters on a yearly basis. Further, the 2015 Fact Sheet states that "vessels are in constant motion with speeds ranging from 3 – 18 knots (3.5 – 20.7 mph)," but changed that range in the 2017 Fact Sheet, which altered this estimate to reflect actual operating conditions, which is closer to 1 – 3.5 knots – which significantly reduces the mixing and dilution activities of EPA's earlier estimate.





The Marine Spatial Planning Models http://www.msp.wa.gov/msp-projects/ocean-conditions/ for bottom oxygen and hypoxia for Washington's coast provide a better understanding of seasonal averages and minimum cycles, as well as intensity and frequency of hypoxia events. They show

low bottom oxygen levels and high frequency and intensity of hypoxia during spring, summer, and autumn. This is when offshore processing takes place.

Ecology believes that the discharges proposed in the Draft Permit will cause degradation of Washington State waters and violate the aquatic life dissolved oxygen criteria (see water quality standards below).

Harmful Algal Blooms
Phytoplankton concentrations can become quite high in areas with sufficient nutrients, light, and water retention. Some types of phytoplankton produce toxins which can be harmful to marine organisms and humans at concentrated levels. When levels of phytoplankton with toxins reach a particular threshold, the event is termed a harmful algal bloom (HAB). Shellfish that filter the organisms, such as clams and mussels, can concentrate the toxins exposing harmful levels to human consumers.

Nutrients and water retention in the Juan de Fuca Eddy create conditions for high productivity and can result in HABs. Variable winds and upwelling/downwelling forces can push the Eddy closer to shore, bringing the HABs along the coast and contaminating shellfish harvest beaches, with higher toxin levels in the northern portion of the coastal area generally occurring during summer and fall. Southern Washington coast beaches are also affected by HABs, with the Juan de Fuca Eddy and Heceta Bank (Oregon) suggested as possible primary sources of toxic phytoplankton (Hickey et al., 2013). The Columbia River Plume may act as a HAB barrier to southern Washington beaches during the summer/fall, which can prevent accumulation of toxins in shellfish, but may also act as a HAB conduit during winter/spring resulting in shellfish closures (Hickey et al., 2013).

Suspected increases in the frequency of HABs along the coastal areas could be related to the reduced outflow of the Columbia River Plume from dams and water removals, as well as climate related phenomena (Office of National Marine Sanctuaries, 2008). In 2015, the United States West Coast experienced possibly the largest HAB in recorded history, with HABs extending from central California to British Columbia and possibly as far north as Alaska. Unusually warm waters of the Pacific Ocean are thought to have contributed to this massive HAB (Doughton, 2015).

The EPA's Fact Sheets reference the expertise of Dr. Vera Trainer, a NOAA scientist researching harmful algal blooms (HABs) off the West Coast. While the EPA includes Dr. Trainer's statement that there currently is no evidence suggesting that nutrient inputs from discharging fish waste will be sufficient to cause toxic HABs, the EPA included a statement by Dr. Trainer in its Draft Consistency Determination, wherein she suggests that proper permitting should be based on "strong science and scientific collaboration." She discusses work with the Makah and her suggestions on sampling, and she concludes by saying, "*... I would imagine that similar samples could be collected to answer questions about hypoxia and perhaps also pH [thus] I would strongly advocate for a delay in issuance of the permit until the proper science is available to substantiate any decisions.*"

In its two comment letters on the preliminary draft permit, and again in its August 3, 2017 letter, Ecology has cautioned that Domoic acid, a naturally occurring toxin produced by certain types of

algae, can be harmful or even fatal to humans if contaminated shellfish is consumed. The toxin was detected initially on the west coast in 1991. http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic_acid.html. This was approximately the same time as the U.S. offshore processing fleet began operating off the coast of Washington. The EPA states that the discharge has been occurring for approximately 20 years without permits off the Washington and Oregon coasts.

The combination of warm ocean water and expected future increases in coastal nutrient loading from runoff (globally [Seitzinger et al., 2010; Lee et al., 2016] and locally [Bergamaschi et al., 2012]) could potentially lead to yet larger toxic events. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5129552/ Studies of P. australis (a species of algae that produces domoic acid) isolated from coastal California waters show that this organism is well adapted to low-nutrient conditions and is capable of responding rapidly to excess nutrients during upwelling, as well as to a variety of nitrogen sources, making the conditions during 2015 particularly amenable to blooms of this species [Cochlan et al., 2008; Kudela et al., 2010]. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5129552/

Ecology strongly concurs with the recommendation by Dr. Trainer to use monitoring, sampling, and proper science to support any permitting decision. Ecology encourages the EPA to incorporate the state's conditions into the final permit so as to ensure protection for coastal resources and uses until the effects of the discharges are fully understood.

Ocean Acidification

Carbon dioxide (CO_2) dissolved in seawater decreases the pH of the water, making the ocean more acidified, resulting in a corrosive environment for some shell-forming organisms. The decline in pH is known as ocean acidification. The primary driver of ocean acidification is from the ocean absorbing atmospheric CO_2, which is currently at significantly elevated levels compared to historic conditions from the burning of fossil fuels. On the Washington coast, low ocean pH is also a result of upwelled high-CO_2 ocean waters. Decomposition (respiration) of organic material releases CO_2, and these cold bottom waters, which have been out of contact with the ocean surface for up to a few decades, bring cold, CO_2-rich waters to the surface. This is a natural phenomenon. Other sources of ocean acidification include nutrients, which can increase algal blooms and in turn, increased decomposition of organic matter when the algae die, thus decreasing pH.

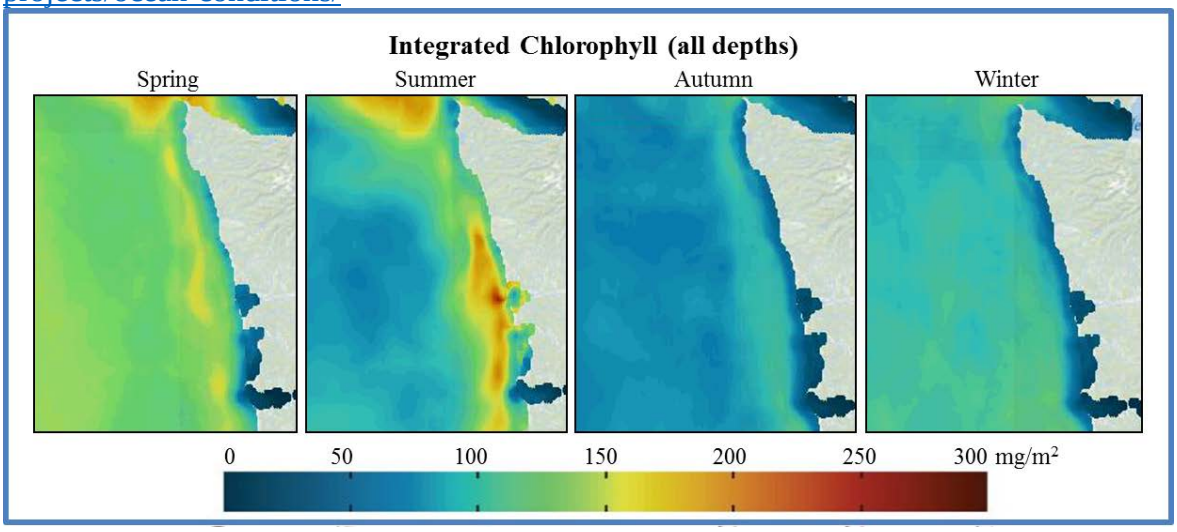
The Washington coast is particularly vulnerable to ocean acidification because upwelling naturally brings low pH waters to the coast. Effects of low aragonite saturation states have already been observed in the oyster industry, where PNW oyster hatcheries were experiencing mass mortalities when raising oyster larvae in the mid-2000s. Natural oyster recruitment was also low during these years. CO_2 and saturation state monitoring revealed that the water intake during those failure events was low in pH and saturation state. The industry has utilized monitoring equipment and pH buffering to adapt to the acidic conditions and increase hatchery success (Feely et al., 2012). Pteropods are an important component of the marine food web in Washington as they are consumed by fish, seabirds, and whales, and are a key prey for salmon. Studies have shown that pteropod species suffer decreases in calcification and growth rates with declining pH (Feely et al., 2012).

Scientists anticipate that ocean acidification conditions and effects will increase in the future, causing more challenges for the oyster industry and resulting in unknown effects to PNW species, habitats, and ecosystems. These impacts could extend to fisheries, human health, and the economy.

Information presented at the 2017 Ocean Acidification Science Symposium showed that impacts of domoic acid associated with harmful algal blooms increase when water is acidified. University of Washington Physical Oceanographer, Parker MacCready, recommended a study looking at the impacts of the discharges. He suggested that a two-year study could model the impacts of an offshore point source discharge. Other information presented at the Symposium indicated that increases in ocean acidification disrupt anti-predator behavior in Coho salmon.

EPA's Fact Sheets state:
"The West Coast Ocean Acidification and Hypoxia Science Panel recommends better controls on nutrients and organic matter pollution, since they provide nourishment for algae and bacteria that can trigger hypoxia and exacerbate ocean acidification (2016). They recommend that managers reduce local pollutant inputs that exacerbate ocean acidification and hypoxia. "While elevated atmospheric CO2 levels are a major driver of ocean acidification, local discharge of organic carbon and nutrients can exacerbate ocean acidification. Upon discharge, organic carbon is broken down by bacteria, which consume dissolved oxygen during the decomposition process, triggering hypoxic conditions, increasing CO2 levels and lowering pH" (West Coast Panel, 2016). ***Although the Panel's recommendations are focused on nutrient inputs from land-based sources to semi-enclosed waterbodies, the EPA believes they are still relevant to this permit because: 1) seafood processing waste is high in nutrients and BOD and is a (NPDES "point") source of organic carbon and nutrients in offshore waters; 2) circulation is sluggish over Heceta and Stonewall Banks and other areas where the continental shelf is wide, and 3) seafood waste could become entrained by eddies or retentive waters."***

In its recent comment letter, Ecology included the plankton productivity map below showing high levels of productivity during spring and summer, which is when offshore processing and dumping occurs. The map depicting the average chlorophyll concentration serves as an indicator of plankton productivity at all depths of the water column. http://www.msp.wa.gov/msp-projects/ocean-conditions/



Ecology is concerned that the discharges are contributing to ocean acidification that is already impacting shellfish growing operations in State waters and that EPA's proposed seasonal discharge prohibition is not protective enough to prevent impacts from extending into, and causing degradation of, adjacent State waters and violating the aquatic life pH criteria (see water quality standards on page 19).

Ecology believes that the effects discussed above will have adverse impacts on Washington's coastal resources and uses. Below is an abbreviated discussion from Washington's draft Marine Spatial Plan that describes the resources vulnerable to degraded water quality.

COASTAL RESOURCES

Habitats

Washington's Pacific coastal area is a highly productive, diverse ecosystem, and the living resources within this ecosystem are the foundation to Washington's coastal and ocean uses. The health and status of the species, habitats, and ecosystem are of primary importance to ocean and estuarine users, coastal residents, tribes, and the state of Washington. The area has several federally and state-designated protected areas designed to protect and foster the health of important habitats and species off Washington's Pacific coast.

The Pacific coastal waters have high biological productivity and support a diversity of habitats and species, many of which are important ecologically, culturally, and economically to Washington, the United States, and the world. Washington's Pacific coast area is comprised of many habitats which support numerous species of fish, mammals, and birds.

Several habitats occur within the Pacific coastal area: pelagic, seafloor, kelp forest, rocky shores, sandy beaches, and large coastal estuary habitat. These habitats support an impressive, diverse array of species that form a large, complex food network. Ecology is concerned about effects to many species in a variety of habitats.

The **pelagic zone** provides important habitat and food for a variety of fishes. Forage fish species, including smelt, Pacific herring, northern anchovy, and Pacific sardine, live and feed in the upper pelagic zone and are key links in the food web by transferring energy from plankton to larger predatory fish, marine mammals, and seabirds. Salmon also spend much of their time in the pelagic zone after their initial entry into the ocean, feeding on zooplankton and forage fish. Albacore tuna are seasonal visitors to the area. Midwater rockfish, such as adult widow rockfish, Pacific ocean perch, yellowtail rockfish, and black rockfish spend a large portion of their time above the seafloor substrate and feed primarily on large zooplankton. Pacific whiting (a.k.a. hake) are one of the most abundant fish species in the California Current. They also feed in pelagic waters on prey items similar to salmon, rockfish, and other Groundfish. Many smaller species occupy deeper waters during the day and rise to feed on phytoplankton providing an important trophic link between primary production and deeper waters.

Many species of seabirds and marine mammals feed and transit through the pelagic habitat area. At least 29 species of marine mammals inhabit or transit through Washington coastal and offshore waters, and numerous species of marine birds live, reproduce, feed, and transit through the area, some migrating thousands of miles to "winter" in Washington's coastal waters. These

animals feed on zooplankton, forage fish, salmon, and other fishes. Occasionally, leatherback sea turtles also feed in the pelagic habitat.

Seafloor habitat represents all bottom habitats below 30 m (98 feet) depth in the area, and it is made up of deep-sea corals, sponges, and anemones, with fishes and invertebrates congregating in these areas. In the coastal area, the highest density of biogenic habitat has been observed in the canyon areas such as the northernmost region in the Juan de Fuca Canyon area, although many areas with biogenic habitat have been observed throughout the area. Other benthic invertebrates include bivalves, corals, sea urchins, and sea stars, which make up significant proportions of some flatfish and rockfish diets. The seafloor is also important habitat for Dungeness crab, a highly valuable commercial fishery and important prey for sharks, large rockfish, and octopus. Spot prawns and pink shrimp are also commercial harvest species associated with the seafloor habitat. The groundfish provide one of the primary fisheries for Washington coastal communities. The groundfish assemblage consists of many different families, including rockfish, roundfish, flatfish, and elasmobranchs

Kelp forest habitat includes floating kelp canopies of bull kelp or giant kelp, submerged kelp beds, and rocky reefs that occur at depths of less than 30 meters (98 feet). Kelp forests form diverse communities providing physical structure and energy to the food web.). Rocky reefs are included in the kelp forest habitat category because many animal species that inhabit kelp forests also inhabit shallow rocky reefs without canopy-forming kelp. . Kelp provides surface area, creating habitat for sessile organisms. The complex structural component of kelp serves as a nursery, refuge, and forage area for a variety of fishes, especially rockfish, sculpins, greenling, lingcod, perch, juvenile salmon and others, including many fish on Washington's list of Species of Concern.

Several fishes live within **rocky shores**, moving in and out with the tides and residing in tide pools. Common species include small sculpins and gunnels. Many seabirds, shorebirds, raptors, and general foraging bird species use rocky shores. Oystercatchers, gulls, and crows forage within the rocky intertidal zone. Species such as petrels, cormorants, gulls, and murres nest in colonies on offshore rocky islands and sea stacks. Harbor seals are common in rocky intertidal habitats along the outer coast, and are year-round residents. Rocky islands are also used as haul-outs for Steller sea lions and California sea lions. Northern elephant seals have been observed occasionally at some rocky islands.

Dozens of grazing invertebrates occur along the rocky shores of Washington's outer coast, most notably snails, limpets, chitons, and small crustaceans. Predators within the rocky shores habitat include the ochre seastar, whelks, anemones, worms, and crabs. Pisaster is considered a keystone predator and its presence helps to maintain the diversity of intertidal rocky communities.

Sandy intertidal beach habitat stretches mainly along the southern shorelines of the coastal area, south of Point Grenville, making up about half of Washington's outer coastline. Sandy pocket beaches between headlands and near estuaries occur also north of Point Grenville. Primary producers within sandy habitats are surf zone phytoplankton, benthic diatoms, and other small autotrophs. The razor clam is an invertebrate commonly associated with Washington's sandy beaches. Razor clam digging is a popular recreational activity along the coast, providing

significant economic benefits. Razor clams are also likely important ecologically, as they recycle ammonium into the nearshore water, promoting primary production.

The large **coastal estuaries** are semi-enclosed, brackish bodies of water that form where rivers meet the ocean. They are highly productive ecosystems that support a wide range of species at different life history stages, along with numerous ecosystem services. They are also important transitional systems that are linked to freshwater, terrestrial, and marine processes. Washington's coastal estuaries are critical habitat for a variety of marine and terrestrial organisms. Primary producers include phytoplankton, benthic microalgae, macroalgae, and macrophytes, such as eelgrass, kelp, salt marsh plants and terrestrial plants.

Shellfish and fish are abundant in the estuaries. Specific shellfish species include the Olympia oyster, non-native Pacific oyster, non-native manila clam, Dungeness crab, and others. Numerous listed and commercially important fishes spend at least some part of their life-cycle within estuaries. Specific fish species include six species of salmon, herring, three-spined stickleback, sturgeon, sevengill sharks, and many others. Estuaries provide crucial nursery habitat for many species of juvenile fishes and crabs. High pH levels could potentially affect estuaries and lead to damages to shellfish.

Fish
Washington's Pacific coastal area is habitat for a variety of fishes. Fishes are important both ecologically and economically to the state of Washington. Key groups of fishes are pelagic fishes, groundfish, and salmonids and other anadromous fish.

Forage fish are important links in the ocean food web, connecting primary and secondary trophic levels to larger predatory fish, marine mammals, and seabirds. Several species of forage fish inhabit the coastal waters, and they tend to be present in high abundance, feed on plankton for a portion of their life cycle, and form dense schools or aggregations. Forage fish often feed in pelagic waters, and certain species such as smelt and sand lance spawn on coastal intertidal sandy beaches. Forage fish are prey for a variety of commercially important and legally protected fish (i.e. salmon), marine mammals, and birds and can be of interest for commercial, recreational, and subsistence fishing.

The **groundfish** provide one of the primary fisheries for Washington's coastal communities. Also known as "bottomfish," this assemblage consists of dozens of species including rockfish, lingcod, dogfish, halibut, whiting, flatfish, skates, and sablefish. Rockfish consists of numerous species, with 30 species identified by NOAA in coastal waters. Over 15 species of flatfish have been identified in the Olympic Coast National Marine Sanctuary waters. Groundfish occupy several habitats, including rocky bottoms, kelp, seafloor, and even pelagic areas. Groundfish prey on a variety of organisms such as euphausiids, plankton, deposit feeders, benthic invertebrates, forage fish, and other small animals.

Salmonids (salmon and related species) and other anadromous fishes are of high ecological and economic importance in Washington. Anadromous species spawn in freshwater systems, migrate to nearshore and offshore marine areas to feed and grow, then return to home rivers and streams upon maturity to start the cycle again. Seven salmonids, Pacific eulachon, green sturgeon, white sturgeon, and Pacific lamprey occur within the coastal waters. Eight of the

twelve anadromous species in the coastal area are listed under the federal Endangered Species Act (ESA) or Washington State species of concern lists (Washington State Department of Fish and Wildlife, 2015d).

Salmon in particular are a cultural icon to Washington residents, both tribal and non-tribal. After leaving freshwater, salmon rely on estuarine, nearshore, and pelagic waters and prey on a variety of animals including euphausiids, amphipods, larval decapods, and forage fish.

Marine Mammals

At least 29 species of marine mammals inhabit or transit through the coastal waters at some point in their lives. Species include baleen and toothed whales, seals and sea lions, and sea otters. Many marine mammals are top predators within the ecosystem, while some large baleen whales are primarily filter or bottom feeders (e.g. Humpback and Gray whales). Diets vary from krill, invertebrates, forage fish, salmon, other fishes, and even other marine mammals. About 20,000 Gray whales migrate through the coastal waters, with the abundance of Gray whales at any time influenced by environmental variability within the Arctic feeding grounds and the timing of migration.

Ten marine mammal species listed under the federal ESA or Washington species of concern occur within the area. Stressors for marine mammals include collisions with and other boat interactions (e.g. noise), entanglement in fishing gear and marine debris, contaminants, oil spills, alterations in habitat and prey, and oceanographic conditions. All marine mammals, whether listed under the ESA or state species of concern, are currently protected by the Marine Mammal Protection Act.

Birds

Numerous bird species use and transit through the Pacific coastal waters. Many species, including seabirds, raptors, marshbirds, waterbirds, and shorebirds, forage and nest in sea stacks, rocky offshore islands, cliffs, bluffs, dunes, marshlands, estuaries, tidal flats, coastal beaches, and old-growth forests. Seabird and shorebird populations occur throughout the outer coast of Washington, with the majority located along the west coast of the Olympic Peninsula. Washington is also along the Pacific Flyway, a migratory pathway for millions of waterbirds, shorebirds, and raptors. Some seabird species migrate thousands of miles to forage in the offshore waters, such as albatross and shearwaters. Estuaries are also crucial habitat for several resident and migratory bird species. Five National Wildlife Refuges have been established in or directly adjacent to Washington's coastal waters to protect land-based resources where large concentrations of birds occur and where seabirds nest.

COASTAL USES AND COASTAL ECONOMY

Key industries that rely on coastal resources and uses are natural resource-based: fishing, aquaculture, and tourism. Of the five Tribes that live on Washington's coast, all except Shoalwater Bay have treaties with the United States that extend their fishing rights as much as 40 nautical miles west into the Pacific.

Continued participation in marine-resource based industries, a healthy marine ecosystem, and a future with a sustainable local economy are among commonly shared visions of many coastal residents. The ocean economy represents a significant portion of the total economy for the

coastal Tribes and counties. Ocean economy gross domestic product (GDP) represents approximately 10% of the total GDP for Clallam, Jefferson, and Grays Harbor Counties, and about 18% of the total GDP for Pacific County (National 0ceanic and Atmospheric Administration, 2016).

Fishing

Washington's coastal waters contain some of the most productive regions of the California Current ecosystem and support abundant fish and shellfish resources. Washington's coastal tribes have depended on these resources for thousands of years as did Euro-American settlers since first arriving in the state in the mid-1800s. Today, many coastal communities remain highly engaged, reliant, and dependent on commercial, recreational, and tribal fisheries. Communities with high levels of both engagement and reliance on fishing are considered to be highly dependent on fishing.

Recent studies have evaluated the engagement, reliance, and dependence of Washington's communities on fishing. A NOAA study identified a number of communities located adjacent to the coastal area as being some of the most highly fishing dependent communities. The coastal tribes have been engaged in fishing throughout their history. Fishing is an integral part of the history, culture, identity, economy, and future of the coastal tribes. Each tribe participates in and relies on fishing for jobs and income within their communities as well as for ceremonial purposes and subsistence.

Coastal county residents make up the largest proportion of commercial fishing vessel owners (299 vessels) and ex-vessel revenue ($40.4 million) from landings into coastal ports. Commercial fishermen residing outside of the Washington coastal county region also fish in the coastal areas and use coastal ports. The following describes some of the fisheries harvested in the coastal waters off Washington's coast:

The **Groundfish** fishery includes over 90 species— two-thirds of which are species of rockfish—although the great majority of commercial landings and revenues come from just a handful of stocks. These key commercial stocks include Pacific Whiting, Sablefish, Dover Sole, Petrale Sole, Lingcod, and Shortspine Thornyheads

Sablefish is the main target of the fixed gear sector. The species made up roughly 86% of total landings by weight and 95% of the total ex-vessel revenue over 2004-2014 in the fixed gear sector. Total fixed gear landings ranged from 0.9 million lbs. to 1.7 million lbs. and earning $2.1 million to $5.8 million in revenues. Sablefish is highly valued as seafood with a strong export market. The ex-vessel price per pound received for fixed gear-caught Sablefish is one of the highest on the coast and has been greater than that paid for Dungeness Crab in some years. In 2014, at least 37 vessels recorded at least $1,000 of landings value in this sector, with 29 vessels receiving $10,000 or more.

Salmon are perhaps Washington's most historic and iconic fish. They are highly valued as seafood and earn the second highest revenue per pound of the species fished in the coastal waters (11-year average of $2.18 per lb.). Two distinct sectors commercially fish for salmon in the coastal areas: the ocean troll fishery and the gillnet fishery.

Ocean Troll vessels operate over a wide range of ocean waters with the most fishing activity occurring in depths between 20 and 80 fathoms north of the Queets River and between 20 and 60 fathoms south of that landmark. Chinook and Coho salmon are the main targets of the troll fleet. Chinook is the more frequently landed fish in this sector, constituting about 84% of landings by weight and earning 94% of ex-vessel revenue in 2014. Total ex-vessel revenue was about $2.4 million in 2014. In general, ocean troll salmon fetches a relatively high price, with $4.30 per lb. in 2014 and an 11-year average of $4.08 per lb. The number of licenses WDFW issued to ocean troll vessels ranged from 152 to 157 between 2004 and 2014. In 2014, at least 111 vessels recorded at least $1,000 of salmon troll landings, 79 of which received at least $10,000 in ex-vessel revenue from those landings.

The **gillnet** fisheries operate in Willapa Bay, Grays Harbor, and the Columbia River. In 2014, Coho Salmon constituted about 57% of landings by weight and about 50% of landings by value, although these numbers can vary greatly from year to year. Between 2004 and 2014, the number of gillnet licenses has ranged from 192-195 in Willapa Bay and 63 to 64 for Grays Harbor. Landings have ranged from a low of 0.5 million lbs. in 2007 to a high of 2 million lbs. in 2011 with corresponding ex-vessel revenues of $1 to $3 million. The 11-year annual average ex-vessel price for salmon gillnet fishery landings for 2004-2014 was about $1.51 per lb. In 2014, 138 vessels recorded at least $1,000 of salmon net landings on the Washington coast, with 72 vessels receiving at least $10,000 in ex-vessel revenue from those landings.

Shellfish: Dungeness Crab have been the biggest revenue earner among the commercial species. Ex-vessel revenue ranged from $12.5 million to $43.5 million during 2004-2014, and earned the most coastal fisheries revenue for 9 of those 11 years. They are highly valued as seafood both locally and internationally and earn the highest average price per lb. on the coast. The 11-year average ex-vessel price was $2.58 per lb. The price has been on an increasing trend since 2010, as markets for live crab in Asia have continued to develop. Prices reached extraordinary levels in 2014 with buyers paying $4.24 per lb. on average over the year and over $6.00 per lb. in March, April, and May. Dungeness Crab can fluctuate strongly in abundance from year to year because of variability in ocean conditions that affect survival and settlement of the larvae; and the annual harvest fluctuates in kind. For example, crab landings were 5.6 million lbs. in 2004 and 19.5 million lbs. the following year.

Pink Shrimp: Volumes of shrimp landings have increased since 2012 with 30.5 million lbs. landed on the Washington coast in 2014 (over double of what was landed in 2013). Ex-vessel revenues have similarly been increasing, with $1.9 million earned in 2007 to $16.4 million in 2014. This may be partially due to the value of shrimp also rising, with a price of $0.54 per lb. in 2014, which is higher than the 11-year average of $0.49 per lb. (Table 5). In 2014, 32 vessels recorded at least $1,000 of pink shrimp landings on the Washington coast, including 26 vessels that received at least $100,000 in ex-vessel revenue from those landings.

Spot Prawn: The commercial spot prawn fishery is relatively new, starting in 1999. The fishery occurs along the outer coast of Washington between March 15 and September 15, about 20 to 40 nm offshore at depths between 420 and 600 feet (70 and 100 fathoms). From 2004 to 2013, the highest value in ex-vessel revenues was $754, (2010) with a low of $102,257 (2013). Live spot prawns can earn $10 per lb. and greater. Primary ports for spot prawn landings include

Westport, Seattle, Neah Bay, and Port Angeles, with Grays Harbor (Westport) accounting for an average of 87% of fishery revenues from 2004-2013.

Razor Clams: Razor clams are landed exclusively in Pacific County and Grays Harbor, with Pacific County averaging large majority of revenues. Total harvest has ranged from a low of 102,900 lbs. to a high of 281,900 lbs. between 2004 and 2014. Total revenue has ranged from a low of $182,390 to a high of $588,620 between 2004 and 2014.

Aquaculture

Aquaculture is a major use within the large coastal estuaries of the Pacific Coastal area. The shellfish aquaculture industry provides income and jobs to the region and the state, promotes environmental monitoring in the estuaries, and is a key part of the cultural history and identity in Pacific and Grays Harbor Counties. As a state, Washington ranks first in shellfish aquaculture sales in the nation, with Pacific and Grays Harbor counties producing a substantial portion (about 29% in 2012) of the state's mollusk sales.

The aquaculture industry is currently enjoying strong demand for its products; main products include oysters and manila clams. According to WDFW 2013 data, Pacific oysters account for about 82% of shellfish farmed and harvested in Pacific and Grays Harbor counties. Manila clams make up about 16% of harvest. Small amounts of eastern oysters, Kumomoto oysters, and blue and bay mussels are also produced. By value, Pacific oysters accounted for approximately 83% of the relative value for shellfish in Pacific and Grays Harbor counties, with Manila clams accounting for about 11%.

Willapa Bay and Grays Harbor make a considerable contribution to state-wide and national aquaculture production. According to the USDA, Pacific County ranked 3rd among all Washington counties and 15th among all U.S. counties in aquaculture sales with over $22.3 million in total sales in 2012. Grays Harbor ranked 7th statewide, and 43rd nationally, with $7.8 million in aquaculture sales. For mollusk production specifically, Pacific County and Grays Harbor County ranked 2nd and 4th, respectively, statewide in 2012. Pacific County produced about 23% of state farmed mollusk sales, and Grays Harbor County produced about 6% of statewide sales.

Recreational Uses

Recreational Fishing

The major recreational fishing categories include salmon, groundfish (aka "bottomfish"), Pacific halibut, Albacore Tuna, and Razor Clams. With the exception of razor clam harvests, which take place on the beach, the major recreational fisheries included here are conducted on boats on the open ocean, as well as inside the estuaries for certain species like salmon. Anglers also fish from shore for species like Redtail Surfperch and from jetties for species like Lingcod.

The Washington charter boat industry has been a major part of coastal communities for decades. The industry developed rapidly after World War II, focusing exclusively on salmon through the 1960s and the number of charter vessels peaked in 1977. Over the years, charter boat operators have diversified their portfolio of trips and begun new opportunities for bottomfish, Albacore,

and eventually Pacific Halibut. Charter boat activity has been relatively stable since the 1990s, but remains below the historical peak.

In contrast to commercial fishing, recreational fishing is conducted for sport, enjoyment, or personal use, and state law prohibits anglers from selling their catch. Anglers spend money to make fishing trips in the coastal waters and provide direct economic input to coastal and state economies. These "trip related expenditures"—on things like fuel for vehicles and boats, fishing gear and supplies, lodging, food at grocery stores and restaurants, bait, charter boat fees, etc. - also produce indirect and induced economic benefits as revenues earned by businesses that provide goods and services to anglers. The income earned by owners and employees of these businesses are spent throughout the economy.

Using 2014 as a baseline, Cascade Economics estimated that anglers taking trips to fish in Washington's Pacific coastal waters made $30.4 million in trip related expenditures in the coastal area and $40.9 statewide. This spending translates to an overall economic contribution of 325 jobs and $17.3 798 million in labor income within the coastal economy and 596 jobs and $32.3 million statewide. Labor income includes money and benefits paid to employees as well as the earnings of owners and the self-employed. Of note, these estimates do not include purchases of equipment or durable goods such as fishing boats, boat trailers, or the vehicles needed to haul them. Such purchases certainly increase the level of recreational fishing's economic contribution to the state and coastal economies.

Recreational trip-related expenditures provide another example of how the location of spending matters to where economic benefits are received. Anglers traveling into the coastal economies from elsewhere produce extra benefit by injecting new money into the local economy. The charter boat industry is a distinct portion of the recreational fishing sector and the one that is also considered as a fishery sector. Owners and crew receive trip-related expenditures in the form of fees and tips that anglers pay when taking trips aboard charter vessels. Because, as reported by Cascade Economics, 100 percent of the owners and crew reside in the coastal counties, a relatively high proportion of their spending is thought to remain in and directly benefit the coastal economy.

Tourism

Recreation and tourism are often the most popular human uses of coastal and marine settings. A 2011 study on the ocean economy for the five Pacific coastal counties adjacent to the coastal area shows that tourism and recreation was the largest sector and accounted for approximately 78 percent of employment and 50 percent of GDP for the portion of the economy that depends directly on ocean resources.

Recreation and tourism trip spending in the coastal areas generates economic activity that supports jobs and personal income for residents of the coastal area and elsewhere in the state. Recreation and tourism trip spending in the area generates economic activity that supports jobs and personal income for residents of the coastal area and elsewhere in the state. In the coastal study area, recreation trip-related spending by Washington residents is estimated to support 4,725 jobs and $196.8 million in labor income within the coastal economy.
As dollars and economic activity multiply through the State's economy, an estimated 9,309 jobs statewide are supported directly and indirectly by recreation and tourism in the coastal area, as

well as $413 million in labor income. Many communities along Washington's coastal area are heavily reliant on employment generated by the recreation and tourism industry. For example, resident employment in tourism-sensitive industries exceeds 50% of overall employment for communities such as Pacific Beach (57.5%), Copalis Beach (82%), Ocean City (85.7%), and Seaview (57.5%) (Taylor et al., 2015).

On pages 3-4 it is noted that the harmful ocean conditions have led to closures of Washington's razor clam and commercial crabbing industries. We have demonstrated/met the effects test by describing the potential, foreseeable, negative effects from dumping millions of pounds of fish-processing and other waste into waters off Washington's coast. Because of these likely effects, the EPA must comply with the WCZMP's enforceable policies.

ENFORCEABLE POLICIES

As described above, the EPA has acknowledged that the discharges covered by the draft NPDES permit have reasonably foreseeable effects on Washington's coastal resources and uses. Given that acknowledgement, the EPA submitted to Ecology a Consistency Determination (CD) describing how the draft permit meets the enforceable policies of the WCZMP to the maximum practicable. Those enforceable policies include the Water Pollution Control Act and the water quality standards and requirements which implement the state law. The EPA took an unusual approach in this regard: in some places the agency tried to show how they met the law and standards, yet, in others, it said that the law and standards do not apply because the discharges are allowed in federal waters only. In some instances, the EPA tried to demonstrate that they met the enforceable policies, which indicates that the EPA believes that there are reasonably foreseeable effects.

Putting the EPA's inconsistencies aside, Ecology's opinion is that the permitted discharges will affect Washington's coastal uses and resources, and thus must be in compliance with the WCZMP's enforceable policies. The following includes the enforceable policies of the Water Pollution Control Act and its implementing standards and regulations that apply to the EPA's permit. Ecology points out for each, how the permit does not meet those enforceable policies. They are organized by topic and/or effect.

Washington's Water Pollution Control Act and Standards

Please note that Ecology acknowledges that while the EPA is the agency issuing the permit, and the processors are not obligated to acquire state permits, the standards and requirements associated with state permits must be complied with, regardless of securing a permit. EPA's permit must contain the protections and requirements found in the WCZMP's enforceable policies. Included under each policy is a statement from the EPA's consistency determination in parenthesis.

1. Chapter 90.48.080 RCW – Discharge of polluting matter in water prohibited.
"It shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise [be] discharged into such waters any organic or inorganic matter that shall cause or

tend to cause pollution of such waters according to the determination of the department, as provided for in this chapter."

This permit allows discharges of organic matter from seafood processing facilities which are known to cause dissolved oxygen impairments in receiving waters. RCW 90.48.080 specifically prohibits the discharge of organic matters into waters of the state that shall cause or tend to cause pollution according to the determination of the department. The extent of the impact from these allowable discharges cannot be readily determined based on the inadequate monitoring required in the draft permit; however, the draft fact sheet states that "seafood processing waste not consumed at the surface has a high biochemical oxygen demand and could contribute to near-bottom hypoxia off the coast." The fact sheet further states that these hypoxic conditions can worsen as bottom waters move **shoreward** towards Washington and Oregon's coasts] when there are large surface organic carbon sources. The authorized discharge of seafood processing wastewater and waste will substantially increase the surface carbon source exacerbating the hypoxic conditions that will negatively impact marine organisms due to low-oxygen waters.

2. Chapter 90.48.160 Waste disposal permit—Required—Exemptions.
("This General Permit will provide NPDES permit coverage to commercial seafood processors disposing of waste into waters of the US at least 3 miles offshore not to Washington waters.")
"Any person who conducts a commercial or industrial operation of any type which results in the disposal of solid or liquid waste material into the waters of the state, including commercial or industrial operators discharging solid or liquid waste material into sewerage systems operated by municipalities or public entities which discharge into public waters of the state, shall procure a permit from [the department] "

2(a). WAC 173-201A-510 Means of Implementation
"Permitting. The primary means to be used for controlling municipal, commercial, and industrial waste discharges shall be through the issuance of waste discharge permits, as provided for in RCW 90.48.160. Waste discharge permits, whether issued pursuant to the National Pollutant Discharge Elimination System or otherwise, must be conditioned so the discharges authorized will meet the water quality standards. No waste discharge permit can be issued that causes or contributes to a violation of water quality criteria, except as provided for in this chapter."

2(b). WAC 173-201A-500 Implementation of Standards, Achievement Considerations
"Further, it shall be required that all activities which discharge wastes into waters within the state, or otherwise adversely affect the quality of said waters, be in compliance with the waste treatment and discharge provisions of state or federal law."

2(c). WAC 173-226-070, Waste Discharge General Permit Program, Permit Effluent Limitations
("This chapter is not applicable since it pertains to Ecology's NPDES permitting program. This is a federal NPDES General Permit issued by the EPA to cover discharges to Federal Waters.")

"Any general permit issued by the department shall apply and insure compliance with all of the following, whenever applicable:

(1) Technology-based treatment requirements and standards reflecting all known, available, and reasonable methods of prevention, treatment, and control required under RCW 90.48.010, 90.48.520, 90.52.040, and 90.54.020 may be imposed through any or all of the following methods:
(a) Effluent limitations and standards promulgated pursuant to sections 301, 302, 306, and 307 of the FWPCA;
(b) Discharge standards contained in chapters 173-221 and 173-221A WAC;
(c) On a case-by-case basis under section 402 of the FWPCA; and/or
(d) Through the use of best management practices."

All activities that discharge wastes into the waters of the state must be in compliance with waste treatment and discharge provisions of state or federal law (WAC 173-201A-500). The draft NPDES permit does not comply with federal laws based on the incorrect application of effluent limit guidelines. EPA incorrectly applied ELGs from 40 CFR 408 Subpart T, Alaskan Bottom Fish Processing, rather than Subpart U - Non-Alaskan Conventional Bottom Fish Processing, and Subpart V, Non-Alaskan Mechanized Bottom Fish Processing which do not comply with federal discharge provisions. In addition, this permit does not comply with state water quality standards that protect and maintain marine water designated uses nor does it require monitoring that ensures compliance with WAC 173-201A-210, Marine water designated uses and criteria. Furthermore, the draft permit does not comply with state regulations (WAC 173-226-070) which requires implementation of technology-based treatment requirements and water quality-based effluent limits to control all discharged pollutants that cause, have reasonable potential to cause, or contribute to an exceedance of state water quality standards (WAC 173-201A). When applying effluent standards and limitations, general permits must include average monthly and maximum daily quantitative mass and/or concentration limits or other limitations that restrict the level of pollutants in an authorized discharge so that they must protect surface water quality standards (WAC 173-226-070(6)(a)).

Overall, the general permit as a means to control waste discharges must be conditioned so the authorized discharge meets water quality standards as no permit shall authorize a discharge that causes or contributes to a water quality violation (WAC 173-201A-510(1).

3. All Known Available and Reasonable Treatment Standard Not Applied
As noted in Ecology's comment letters dated October 8, 2015 and February 10, 2017, the EPA has not applied the all known available and reasonable treatment standard required of industries and others under RCW 90.48.010 to prevent and control the pollution of the waters of the state of Washington. The proposed draft permit does not meet State requirements codified in RCW 90.48.010 and further detailed in WAC 173-220-130, and, as written could cause or contribute to unfavorable impacts on waters of the State in violation of State Water Quality Standards.

(3)(a) RCW 90.48.010, Water Pollution Control, Policy Enunciated
"…the public policy of the state of Washington [is]to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington. Consistent with this policy, the state of Washington will exercise its

powers, as fully and as effectively as possible, to retain and secure high quality for all waters of the state. The state of Washington in recognition of the federal government's interest in the quality of the navigable waters of the United States, of which certain portions thereof are within the jurisdictional limits of this state, proclaims a public policy of working cooperatively with the federal government in a joint effort to extinguish the sources of water quality degradation, while at the same time preserving and vigorously exercising state powers to insure that present and future standards of water quality within the state shall be determined by the citizenry, through and by the efforts of state government, of the state of Washington."

Washington State commits to working with the federal government to protect the national interest in maintaining the quality of waters within the United States (some of which extend into state jurisdiction) as a public policy. Furthermore, the State of Washington works cooperatively with the federal government in an effort to prevent further water quality degradation (RCW 90.48.010). In this vein, Washington expects the federal government to work cooperatively in protecting marine waters where tidal influence and currents can drive pollutants and water quality impacts across jurisdictional boundaries.

(3)(b) WAC 173-220-130, National Pollutant Discharge Elimination System, Effluent Limitations, Water Quality Standards and Other Requirements for Permits
("This chapter is not applicable since it pertains to Ecology's NPDES permitting program. This is a federal NPDES General Permit issued by the EPA to cover discharges to Federal Waters.")

"(1) Any permit issued by the department shall apply and insure compliance with all of the following, whenever applicable:
(a) All known, available, and reasonable methods of treatment required under RCW 90.52.040, 90.54.020 (3)(b), and 90.48.520; including effluent limitations established under sections 301, 302, 306, and 307 of the FWPCA. The effluent limitations shall not be less stringent than those based upon the treatment facility design efficiency contained in approved engineering plans and reports or approved revisions thereto. The effluent limitations shall reflect any seasonal variation in industrial loading."

The draft permit does not require implementation of all known, available, and reasonable methods of treatment (AKART) (WAC 173-220-130(1)(a)) nor does it protect water quality by ensuring effluent limitations prevent violation of any applicable water quality standard (WAC 173-220-130(2)).

4. Insufficient Monitoring Requirements
("This chapter is not applicable since it pertains to Ecology's NPDES permitting program. This is a federal NPDES General Permit issued by the EPA to cover discharges to Federal Waters.")

The monitoring proposed by EPA in the Draft Permit is not sufficient to determine compliance with the applicable effluent limits (40 CFR, Part 408, Subpart U and 40 CFR, Part 408, Subpart V) and fails to meet the requirements of WAC 173-220-210 and WAC 173-226-090.

(4)(a) WAC 173-220-210, National Pollutant Discharge Elimination System Monitoring, Recording and Reporting
"(1) Monitoring.

(a) Any discharge authorized by a permit may be subject to such monitoring requirements as may be reasonably required by the department, including the installation, use, and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). These monitoring requirements would normally include:
(i) Flow (in gallons per day);
(ii) Pollutants (either directly or indirectly through the use of accepted correlation coefficients or equivalent measurements) which are subject to reduction or elimination under the terms and conditions of the permit;
(iii) Pollutants which the department finds could have a significant impact on the quality of surface waters; and
(iv) Pollutants specified by the administrator, in regulations issued pursuant to the FWPCA, as subject tomonitoring.
(b) Each effluent flow or pollutant required to be monitored pursuant to (a) of this subsection shall be monitored at intervals sufficiently frequent to yield data which reasonably characterizes the nature of the discharge of the monitored effluent flow or pollutant.
Variable effluent flows and pollutant levels may be monitored at more frequent intervals than relatively constant effluent flows and pollutant levels which may be monitored at less frequent intervals."

Monitoring requirements in the draft permit do not occur on a frequency sufficient to yield data capable of characterizing the nature of the variable pollutant discharge (WAC 173-220-210(b)). In addition, monitoring requirements should include pollutants that could have a significant impact on the receiving water quality (WAC 173-220-210(a)(III)). The draft permit monitoring requirements should include parameters that will enable EPA to determine if the discharge has a deleterious effect on the marine environment. These parameters should at a minimum match the effluent limits required in 40 CFR 408, subparts U and V.

(4)(b) WAC 173-226-090, Waste Discharge General Permit Program, Monitoring, Recording, and Reporting
("This chapter is not applicable since it pertains to Ecology's NPDES permitting program. This is a federal NPDES General Permit issued by the EPA to cover discharges to Federal Waters")

Monitoring requirements in this section are similar to the above. Monitoring requirements in the draft permit are qualitative in nature and cannot be used to ascertain compliance with effluent limits required for Non-Alaskan Conventional and Mechanized Bottom Fish Processors. In addition, the monitoring program also fails to meet federal requirements set in 40 CFR 125.123(c) and 40 CFR 125.123(d)(2). The draft permit's monitoring schedule is insufficient to assess the impact of the discharge on water and aquatic life as EPA cannot ensure the discharge will not cause irreparable harm to the marine environment.

5. Antidegradation Policy and Water Quality Standards for Dissolved Oxygen and pH
(5)(a) WAC 173-201A PART III Antidegradation Policy for Waters of the State.
"The purpose of the policy is established by WAC 173-201A-300(2)
(1) The antidegradation policy is guided by chapter 90.48 RCW, Water Pollution Control Act, chapter
90.54 RCW, Water Resources Act of 1971, and 40 C.F.R. 131.12.
(2) The purpose of the antidegradation policy is to:

(a) Restore and maintain the highest possible quality of the surface waters of Washington;
(b) Describe situations under which water quality may be lowered from its current condition;
(c) Apply to human activities that are likely to have an impact on the water quality of a surface water;
(d) Ensure that all human activities that are likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART); and
(e) Apply three levels of protection for surface waters of the state, as generally described below:
(i) Tier I is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.
(ii) Tier II is used to ensure that waters of a higher quality than the criteria assigned in this chapter are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.
(iii) Tier III is used to prevent the degradation of waters formally listed in this chapter as "outstanding resource waters," and applies to all sources of pollution."

(5)(b) WAC 173-201A-612 Table 612 Use designations for marine waters
Table 612 designates Coastal waters: Pacific Ocean from Ilwaco to Cape Flattery as having extraordinary quality with uses such as: recreational, wildlife habitat, harvesting, commercial/navigation, boating, and aesthetics.

(5)(c) WAC 173-201A-210 Marine water designated uses and criteria
("The major constituents of seafood processing wastes are blood, tissue, liquids, meat, viscera, oil and grease, shells, and bones. Except for the bones and shells, which are highly biodegradable, the wastes are primarily organic matter. Major pollutants consist of BOD, solids (sediments and residues), oil and grease, and nutrients. These major pollutants are all considered conventional and of a non-toxic nature (the end-product is meant for human consumption. Thus, the proposed General Permit will have no effect on human health criteria within Washington waters.").

"The following uses are designated for protection in marine surface waters of the state of Washington. Use designations for specific water bodies are listed in WAC 173-201A-612.
(1) Aquatic life uses. Aquatic life uses are designated using the following general categories. It is required that all indigenous fish and nonfish aquatic species be protected in waters of the state.
(a) The categories for aquatic life uses are:
(i) Extraordinary quality salmonid and other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning."

(1)(d) **Aquatic life dissolved oxygen (D.O.) criteria.**
("The EPA does not expect this General Permit to impact dissolved oxygen levels in Washington State waters.")
"*Except where noted, D.O. concentrations are measured as a 1-day minimum in milligrams per liter. Table 210 (1)(d) lists the D.O. criteria for each of the aquatic life use categories."*

Table 210 (1)(d)
Aquatic Life Dissolved Oxygen Criteria in Marine Water

Category	Lowest 1-Day Minimum
Extraordinary quality	7.0 mg/L

Per WAC 173-201A-300(2), AKART must be applied to maintain the existing designated use of a surface water where a human activity may contribute to a lowering of water quality. The state of Washington designates Pacific coastal waters from Ilwaco to Cape Flattery as having extraordinary quality (WAC 173-201A-612). This extraordinary quality determination requires meeting minimum criteria for temperature, dissolved oxygen, turbidity, and pH (WAC 173-201A-210(c-f)). Given the risk of hypoxic conditions due to the disposal of the fish processing waste, compliance with the state's aquatic life DO criteria of 7.0 mg/L (min) is imperative. The draft permit does not contain monitoring to ensure the discharge complies with this criteria per 40 CFR 125.123(c).

6. Ocean Acidification
("The discharge authorized by this General permit will have no effect on the pH of Washington State waters.")
As noted above, WAC 173-201A-612 designates Coastal waters: Pacific Ocean from Ilwaco to Cape Flattery as having extraordinary quality. The following describes the pH criteria for those waters:

WAC 173-201A-210(1)(f) Aquatic Life pH Criteria in Marine Water

Extraordinary quality	pH must be within the range of 7.0 to 8.5 with a human-caused variation within the above range of less than 0.2 units.

This extraordinary quality determination requires meeting minimum criteria for temperature, dissolved oxygen, turbidity, and pH (WAC 173-201A-210(c-f)). Given the risk of ocean acidification, compliance with the state's aquatic life pH criteria of 7-8.5 s.u. is imperative with this discharge. The draft permit does not contain monitoring to ensure the discharge complies with this criteria per 40 CFR 125.123(c).

The Ocean Resources Management Act

Ecology is not attaching conditions to its decision based on the Ocean Resources Management Act (ORMA), an enforceable policy of the WCZMP. However, in its draft Consistency Determination (CD), the EPA misapplied ORMA, and Ecology wants to ensure that ORMA is correctly applied in the future. The CD said that ORMA does not apply because the project is not an oil and gas development activity. For the record, ORMA does apply to the EPA's federal permitting activity. Below, are two comments that Ecology gave last February to the EPA on its preliminary draft CD, issued November, 2016:

Appendix C – Ocean Resources Management Act
"EPA seems to imply that ORMA's policies were intended to facilitate harvest of renewable resources, which is an inaccurate interpretation. ORMA was intended to address adverse impacts of ocean use developments (e.g. oil and gas activities) on existing coastal uses and resources, such as fishing."

43.143.030(2)(d): *"The EPA has taken all reasonable steps to avoid and minimize adverse environmental impacts from offshore seafood processing waste."*
"Ecology's review of the preliminary draft NPDES permit suggests that EPA is not taking sufficient steps to avoid and minimize impacts. Also, [we are] not sure what evidence they have provided to ensure that both water quality and habitats (e.g. coral) will not be damaged by the disposal. Monitoring provisions may help us better understand the potential for impacts."
ORMA does apply to this permit, as we noted in our comments above.

STATE CONDITIONS

In order to comply with the water quality standards discussed above, the EPA is encouraged to incorporate the following conditions into its final permit. Should the EPA choose to ignore Ecology's conditions, then the Conditional Concurrence defaults to an Objection under the Coastal Zone Management Act, and each processor wishing to discharge off the coast will need to come to Ecology with a consistency certification. Ecology will review those and either concur, concur with conditions, or object.

1. At sea processors discharging under the effluent limitations established in 40 CFR, Part 408, Subpart U - Non-Alaskan Conventional Bottom Fish Processing Subcategory and 40 CFR, Part 408, Subpart V - Non-Alaskan Mechanized Bottom Fish Processing Subcategory may operate year round without a depth restriction.
https://www.law.cornell.edu/cfr/text/40/part-408/subpart-U,
https://www.law.cornell.edu/cfr/text/40/part-408/subpart-V

Ecology believes that following the federal guidelines above will alleviate the need for conditions that will ensure that the enforceable policies described above will be met. Subparts U & V represent AKART. When the Effluent Guidelines were developed, EPA took water quality effects and treatment technology into account. Therefore discharges treated to this level should not violate water quality standards. These limits are applied to all Washington shore-based processors. These limits are technology-based, and none of the shore-based processors who are complying with the technology-based limits have violated water quality standards, which would require Ecology to write a permit that is based on water quality standards, rather than based on treatment technology.

At sea processors discharging under the effluent limitations in 40 CFR, Part 408, Subpart T - Alaskan Bottom Fish Processing Subcategory cannot discharge in water shallower than 110 fathoms, and thus must comply with conditions 2 and 2.a below.
https://www.law.cornell.edu/cfr/text/40/part-408/subpart-T

2. Alternatively, apply a year-round, 110 fathom depth contour restriction off Washington's coast to prevent discharges from further contributing to hypoxic conditions on the shelf, harmful algal blooms, and ocean acidification.

Ecology believes that this condition satisfies the enforceable policies relating to pollutants, especially those associated with Dissolved Oxygen and low pH. Additionally:

- Most rocky reef habitat is located between 55 and 110 fathom depth and the seasonal discharge prohibition at 55 fathoms and shallower would not protect the reefs from stickwater 'slime' or settling particulate.
- To reduce the likelihood of waste becoming captured and transported via natural upwelling processes, which brings water at 55 – 82 fathoms shoreward, it is important to discharge waste at depths greater than 110 fathoms
- Discharging at depths between 55 - 110 fathoms during upwelling season may result in more organic particles reaching mid-shelf where susceptibility to hypoxia is higher.
- Whiting densities are highest over bottom depths between 110 and 164 fathoms during harvest season and vessels operate in proximity to where the fish are harvested.
- 110 fathoms depth contour approximately delineates the continental shelf break and is an ecologically meaningful boundary.
- 110 fathoms depth boundary prohibition provides an adequate buffer, and beyond upwelling currents, to ensure consistency with the enforceable policies of the program.

Moreover, EPA has stated that the Pacific Whiting fleet generally conducts its processing activity in waters deeper than 90 meters (49 fathoms), often 20-30 miles offshore, and that information submitted by American Seafoods Company for all six vessels indicates that "fishing/processing is conducted between 91 meters (50 fathoms) and 1,828 meters (1,000 fathoms) in depth." These statements from the Preliminary Draft Fact Sheet, and the 2017 Fact Sheet indicate that the offshore processing ships routinely operate in depths greater than 200 meters (110 fathoms) off the coast, and restricting them to this depth contour year round should not cause any undue hardship to the industry.

2.a. Require the discharges to be adequately monitored to accurately evaluate the impacts to water quality and aquatic resources.

WAC 173-220-210 and 173-226-070 & 090 must be followed in order to gain necessary information on the discharges' effects. Any permit issued pursuant to 40 C.F.R. § 125.123(c) must include a monitoring program "sufficient to assess the impact of the discharge on water, sediment, and biological quality including, where appropriate, analysis of the bioaccumulative and/or persistent impact on aquatic life of the discharge." 40 C.F.R. § 125.123(d)(2). Specifically:

Monitoring requirements to determine compliance with the effluent guidelines in 40 CFR Part 408, Subparts U & V, to be reported in concentration (mg/l) and loading (lbs/day):

- Flow: Continuous Monitoring
- Biochemical Oxygen Demand (BOD5): Weekly
- Total suspended solids: Weekly
- Oil and Grease: Weekly
- pH: Weekly

Additional requirements to allow the discharge conditions to be modeled by the State and EPA, to be reported in concentration (mg/l) and loading (lbs/day):

- Total Organic Carbon: Weekly
- Dissolved Organic Carbon: Weekly

Monitoring requirements for fishmeal plants in the State, are the following, these would be in place during fishmeal production when stickwater is discharged, to be reported in concentration (mg/l) and loading (lbs/day):

- Carbonaceous Biochemical Oxygen Demand (CBOD): Weekly
- Total Kjeldahl Nitrogen: Weekly
- Total Ammonia as Nitrogen: Weekly
- Total Dissolved Solids: Weekly

Ecology strongly recommends that future permitting decisions should be based on robust scientific studies to determine if the discharges are causing or contributing to harmful algal blooms, hypoxia, and ocean acidification. EPA acknowledges that not enough is known about the harmful effects of the discharges and their ability to exacerbate hypoxic conditions and harmful algal blooms, which could be further damaging due to ocean acidification.

Makah Tribe Fishing Rights

Given that most of the Makah Usual & Accustomed (U&A) fishing area is in waters shoreward of 110 fathoms, the Makah Tribe is concerned about further restrictions on their tribal fishing rights should they want to rely on an offshore processor that would be prohibited from discharging within the 110 fathom depth contour according to Ecology's conditions. In order to reach a processor beyond the 110 fathom depth, the Makah boats would need to travel miles offshore, and the time that could take would damage the whiting catch.

Therefore, should the EPA issue its final NPDES permit incorporating Ecology's conditions, if the Makah Tribe intends to resume using an offshore processor for its whiting catch, the EPA could modify the permit, with Ecology's approval, to allow the mothership to discharge within the Makah U&A area for Makah catch only.

If the EPA issues the final NPDES permit without incorporating Ecology's conditions, then the Makah can come to Ecology directly with their consistency certification (pursuant to CZMA regulations cited at page 2 above), and Ecology can make a decision at that time as to appropriate provisions to attach to its decision on the consistency certification.

CONCLUSION

There is inadequate information to determine what is actually going on in the coastal waters off the Pacific Coast. Cited scientists in Ecology's comment letter expressed their concerns with the lack of knowledge and one cautioned EPA to wait until such studies are conducted. Ecology maintains that the conditions included above will address Ecology's concerns while providing opportunities for collaboration among state and federal agencies, the Tribes, the fishing industry and others. During the permit's five-year term, more can, and should, be learned about the effects that the millions of pounds of waste dumped onto Washington's continental shelf each

year have on the coastal/marine resources, fishing and aquaculture industries, as well as on recreational and tourist activities. Washington has a duty and responsibility to ensure the people of the State that it is fulfilling its obligation to protect and preserve State interests in the resources and uses mentioned above and throughout this decision document.
Below, you will find information on the State's appeal procedures; the federal requirements are detailed above on page 2.

YOUR RIGHT TO APPEAL

You have a right to appeal this federal consistency decision to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this decision. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001 (2).

To appeal you must do all of the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

We look forward to working with the EPA and other interested parties on this project. Should you have any questions regarding this Conditional Concurrence, please contact Therese Swanson at (360) 407-6789 or terry.swanson@ecy.wa.gov.

Thank you,

Gordon White,
Program Manager
Shorelands and Environmental Assistance Program

e-cc: Ron Lavigne, AAG
Rosina DePoe, Makah Tribe
David Kaiser, NOAA, OCM
Kerry Kehoe, NOAA, OCM
Kris Wall, NOAA, OCM
Elizabeth Ruther, Oregon DLCD
Patty Snow, Oregon DLCD
Louis J. Iani, Perkins Coie
Heather Bartlett, Ecology, WQP
Marc Pacifico, Ecology, WQP
Loree' Randall, Ecology, SEA
Ecology Federal Permits