HABITAT REPORT ON EPA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT FOR OFFSHORE SEAFOOD PROCESSORS IN FEDERAL WATERS OFF THE COASTS OF WASHINGTON AND OREGON (EPA GENERAL PERMIT NO. WAG520000)

Section 402 of the Clean Water Act regulates the discharge of pollutants into U.S. waters and is administered by the Environmental Protection Act (EPA) through a National Pollutant Discharge Elimination System (NPDES) Permit.

Under the Clean Water Act, seafood processing waste from vessel processors is a point source pollution of organic carbon and nutrients, and requires a NPDES permit. In 2015, EPA's Region 10 initiated its first draft NPDES General Permit to regulate seafood processor vessels in Federal waters off Washington and Oregon. EPA reviewed information on at-sea fish processing and product recovery metrics for west coast vessel processors and, based on processing volumes from earlier years of up to 128 metric tons (mt), estimated annual waste production was between 60,000 - 90,000 mt. Comments were received from Washington and Oregon state agencies, National Marine Fisheries Service (NMFS), Olympic Coast National Marine Sanctuary (OCNMS), U.S. Fish and Wildlife Service, academic scientists, and others. Based on these comments, EPA determined that seafood waste discharged under the General Permit could affect coastal waters, coastal resources and/or uses of the State of Oregon and Washington (part of the coastal zone), and therefore, must comply with the Coastal Zone Management Act. Thus, EPA must demonstrate consistency with the States' Coastal Zone Management Programs (CZMP) and must provide a consistency determination explaining how the NPDES permit meets the enforceable policies of each State's Coastal Zone Management Program. To comply with these requirements, EPA provided the state regulatory agencies (Oregon Department of Environmental Quality [DEQ], Oregon Department of Land Conservation and Development [DLCD], Oregon Department of Fish and Wildlife [ODFW], and Washington Department of Ecology [Ecology]) with a revised preliminary NPDES draft permit and draft consistency determination in November 2016.

The EPA anticipates releasing a new public notice and revised draft NPDES permit and Consistency Determination in early April 2017 with a 45-day comment period. The States have 60 days to either concur, concur with conditions, or object to the consistency determination. Oregon and Washington are coordinating, where possible, on responses to the NPDES permit and on the consistency determination.

Below is a brief summary of the EPA's scientific review of west coast ocean conditions informing the upcoming draft NPDES permit, followed by a brief summary from Oregon, Washington, NMFS and OCNMS. The initial (2015) draft NPDES permit and the associated Biological Evaluation and Criteria Evaluation are available for review on the EPA's website. Note that the Biological Evaluation and Criteria Evaluation relied on ocean conditions and seafood processing in the Pacific Ocean off remote Alaska. Substantial revisions to the permit, Biological Evaluation, and Criteria Evaluation are anticipated for the upcoming public notice[1].

[1] See https://yosemite.epa.gov/r10/water.nsf/NPDES+Permits/DraftPermitsORWA

Summary of West Coast Conditions (EPA)

The California Current Ecosystem off Oregon and Washington experiences seasonal hypoxia events that are triggered by conditions that converge in time and space (e.g., upwelling, currents, transport, sediment oxygen demand, and decomposing organic matter settling on the seafloor). Numerous hypoxic and anoxic events have occurred off Oregon and Washington in the last 15 years (Peterson, et al. 2013). In the summer of 2006, Oregon experienced severe hypoxia over at least 3,000 square km on the shelf (Chan, et al. 2008). Demersal fish and benthic invertebrates, such as Dungeness crab, are acutely affected by anoxia and hypoxia. Heceta Bank and Stonewall Bank off Oregon (referred by oceanographers as the Heceta-Stonewall Banks complex), and much of the Continental shelf off Washington, are most prone to hypoxia. Ocean dynamics around Stonewall Bank are characterized by sluggish circulation and a slow, counter-clockwise gyre in summer. Low oxygen concentrations exist all across Heceta Bank. The broad, shallow shelf off Oregon and Washington experience high sediment oxygen demand, which is further taxed by an abundance of decomposing organic matter. Discharged organic matter in sensitive areas can remain on the seafloor until stronger currents flush them away. Seafood processing waste not consumed at the surface has high biochemical oxygen demand and could exacerbate hypoxic conditions on the seafloor, particularly in wide shelf areas that already experience high sediment oxygen demand.

Oceanographers at Oregon State University (OSU), University of Washington and National Oceanic and Atmospheric Administration (NOAA) have expressed concern for sinking organic matter resulting from fish processing waste in these hypoxic-sensitive areas and have recommended seasonal prohibitions of fish waste discharges at the Heceta-Stonewall Banks Complex and coastwide in waters shallower than 100 or 200 meters (Newton and Peterson, 2016 separate personal communication with EPA). Likewise, the West Coast Ocean Acidification and Hypoxia Science Panel has concluded that organic pollutants are a source of algal and bacterial blooms that trigger hypoxia and exacerbate ocean acidification, and has recommended adopting management measures to control organic pollution. At the same time, a NOAA scientist studying harmful algal blooms said there is currently no evidence that seafood processing waste discharges contribute specifically to harmful algal blooms (Trainer, 2016, personal communication with EPA).

EPA's revised draft permit is expected to include "exclusion areas" aimed at avoiding hypoxia-prone areas and nearshore waters that are important for benthic and near-bottom fisheries (Dungeness crab, lingcod and Chinook salmon). In addition, the permit will include requirements for seafood waste treatment, effluent limitations and monitoring, waste minimization, reporting, and reducing impacts to seabirds.

Oregon

Oceanographers at OSU and NOAA first expressed concern in 2013 that high volumes of organic matter from fish waste disposal could exacerbate hypoxic conditions off Oregon in high-risk areas. They continue to express these concerns as scientific understanding and monitoring of ocean dynamics, system drivers, and hypoxia improves. The areas of greatest risk for hypoxia off Oregon are the Heceta-Stonewall Banks complex and the Oregon shelf along the entire Oregon coast inshore of at least 100 m depth. ODFW echoed these concerns in its comments to EPA, recommending exclusion areas that protect waters that are vulnerable to hypoxia (where seasonal

hypoxic conditions have become a nearly annual occurrence in recent years), and prominent rocky reefs, where sensitive habitat and reef species may be threatened by the accumulation of discharged waste.

Oregon's DEQ has determined that fish waste from west coast vessel processors is insufficiently processed and results in significant biological oxygen demand due to the high volume of solids, stickwater (fishmeal processing waste), and wastewater. DEQ is concerned that anoxic and hypoxic conditions induced by the waste stream would be upwelled and transported shoreward into state waters. Without advanced treatment, the wastewater discharged would be in violation of Oregon's water quality standards and criteria for dissolved oxygen in state waters.

Oregon's DLCD Coastal Zone Management Program (CZMP) administers the state's Coastal Zone Management Act authority. DLCD identified several Oregon Coastal Management Program enforceable policies applicable to a NPDES permit, including Statewide Planning Goal 19, which, among other things, protects marine resources that support recreational and commercial fisheries from impacts to habitat and impaired water quality. DLCD will gather public comment and determine final consistency concurrence for EPA after EPA submits its Coastal Zone Management Act consistency determination to DLCD.

Washington

Ecology's concerns are similar to Oregon's. Harmful algae blooms and hypoxia are at the top of the list, and Ecology does not believe that EPA's proposed no-discharge zone (at the 90-meter depth) extends far enough from state waters. The current Washington recommendation is 24 miles offshore, while Oregon is proposing a depth-based exclusion zone. Additionally, Ecology believes that the prohibited area needs to be off-limits all year around, as opposed to EPA's proposed April-October seasonal ban.

The NPDES needs to meet the enforceable policies identified in the Washington State Water Pollution Control Act and associated water quality standards primarily associated with dissolved oxygen and pH. Ecology will hold a 21-day comment period on whether the draft permit meets the enforceable policies of the CZMP, and will work with other state agencies to gather comments.

NMFS

NMFS conducted Endangered Species Act (ESA) Section 7 and essential fish habitat (EFH) consultations on the initial draft NPDES permit in 2015. NMFS concluded that the proposed action is not likely to adversely affect species listed under the ESA, or their critical habitat. However, NMFS determined that the action would adversely affect EFH by degrading water quality and through the accumulation of discharged fish waste on benthic organisms, fish eggs and habitat. NMFS recommended that vessels maintain a minimum speed while discharging wastes, and avoiding algal blooms, hypoxic areas and rocky reefs.

Olympic Coast National Marine Sanctuary

The Olympic Coast National Marine Sanctuary (through the National Marine Sanctuaries Act 304(d) consultation process) recommended improved monitoring of discharge operations for the effects on the formation of harmful algal blooms, hypoxic conditions, and ocean acidification. The Sanctuary also recommended the EPA establish an exclusion zone for discharge in the oceanographic retention area of the Juan de Fuca eddy (inside the sanctuary).

Habitat Committee Comments

The Habitat Committee (HC) appreciates the academic and agency analyses discussed above and shares their concerns for the potential adverse effects of at-sea fish processing waste on the habitat and species under the Council's authority, particularly in areas of known risk for hypoxia, algal blooms, and rocky reef habitats. The HC recommends supporting EPA in its effort to regulate at-sea fish processing discharges in a manner that is consistent with the goal of minimizing impacts to EFH for the managed species most likely to be effected (groundfish, salmon, and coastal pelagic species).

The EFH appendices for the groundfish and salmon fishery management plans identify a number of factors causing adverse effects on EFH of managed species that are relevant to at-sea fish processing (pollutants, stickwater processing methods, discharges of organic matter, nutrient induced algal blooms and hypoxia). The groundfish plan EFH appendix also includes conservation measures specific to fish waste and effluent discharges, but these have not been updated to reflect current effluent treatment guidelines for the west coast. Nevertheless, the EFH conservation measures could be used to frame comments, should the Council wish to comment during EPA's upcoming public comment period in support of EPA's efforts to protect the water quality of EFH for the Council's fishery resources. The HC is ready to assist with crafting a letter, should the Council request it.

Proposed Conservation Measures from Non-Fishing Effects on West Coast Groundfish Essential Fish Habitat and Recommended Conservation Measures (NOAA, 2003):

1. Base effluent limitations on site-specific water quality EFH concerns to the maximum extent practicable.
2. Avoid the practice of discharging untreated solid and liquid waste directly into the environment. Use of secondary or wastewater treatment systems should be encouraged where possible.
3. Designation of "new zones of discharge" should not be allowed. Options to eliminate or reduce zones of discharge at existing facilities should be explored.
4. Control stickwater by physical or chemical methods.
5. Promote sound fish waste management through a combination of fish-cleaning restrictions, public education, and proper disposal of fish waste.
6. Encourage the alternative use of fish processing wastes (e.g., fertilizer for agriculture, and animal feed).
7. Options for additional research should be explored. There is not much current research on which to base management decisions about habitat. Some improvements in waste processing have occurred, but the technology-based effluent guidelines have not changed in 20 years.
8. Locate new plants outside rearing and nursery habitat. Monitor both biological and chemical changes to the site.

References

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3/31/17