



CENTER FOR
FOOD SAFETY

August 19, 2016

SUBMITTED VIA E-MAIL

U.S. Army Corps of Engineers
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**Re: Comments on Nationwide Permit 48 (Commercial Shellfish Activities)
Regional Issues**

Thank you for the opportunity to comment on the regional issues surrounding the proposed reissuance of Nationwide Permit (NWP) 48 in Washington State. The Seattle District of the U.S. Army Corps of Engineers (Seattle District) should **not adopt** NWP 48 in Washington for commercial shellfish aquaculture activities. As currently proposed, NWP 48 would be a disaster for Washington, and would not prevent more than minimal individual or cumulative adverse impacts to the environment. Instead, Seattle District should choose a regional general permit for specific water bodies in Washington and only include those operations that truly have only minimal adverse impacts to the environment, using individual permits for the remaining operations.

These comments are submitted on behalf of Center for Food Safety (CFS). CFS is a nationwide nonprofit membership organization that works to protect human health and the environment by curbing harmful food production technologies and by promoting organic and sustainable agriculture and aquaculture. Our membership includes over 750,000 farmers and consumers across the county, including over 25,000 members in Washington, who support truly sustainable food and care about the impact of our food production system on our environment and public health.

Washington is unique when it comes to shellfish farming. First, Washington is the biggest producer of shellfish in the United States, and has been growing shellfish commercially for over 150 years. Because of this, shellfish farming in Washington looks very different than it does elsewhere, and is being increasingly industrialized, relying heavily on plastic gear and pesticides, while expanding to cover every inch of natural tidelands. Historically, most of the shellfish aquaculture took place in Willapa Bay/Grays Harbor, but recently shellfish farming has expanded significantly in Puget Sound. However, Willapa Bay/Grays Harbor are not the same as Puget Sound, both in ecology and in shellfish farming practices. For

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example, while oyster and clam is predominant in Willapa Bay, geoduck farming is predominant in Puget Sound, each using different types of equipment. While growers in Willapa Bay/Grays Harbor have an NPDES permit to spray herbicide (imazamox) onto tidebeds to kill Japanese eelgrass, no such pesticide spraying is allowed in Puget Sound. These same growers are currently seeking a second NPDES discharge permit for the use of imidacloprid, a neonicotinoid insecticide, in Willapa Bay/Grays Harbor to kill native burrowing and ghost shrimp. Thus, while Washington is unique from the rest of the country, its own regions are unique from one another. Not only is a nationwide permit inappropriate to cover Washington, even a regional general permit should concentrate on the specific bodies of water in Washington to reflect their unique qualities and the type of farming that predominates. Seattle District should forego the NWP 48 for Washington State, and instead issue either individual permits, or regional permits tailored to the unique intra-state region being covered. While Seattle District *could* add its regional conditions for NWP 48, this results in a confusing set of national general conditions, regional general conditions, and regional specific conditions that begs the question of whether permittees will truly follow these requirements. Instead, due to the large number of operations in Washington (and the over 1000 activities authorized under the 2012 NWP 48), to avoid cumulative impacts that are more than minimally adverse to the environment, Seattle District should use either several regional general permits, or just individual permits.

Type of permit aside, the currently proposed NWP 48 is a huge step backwards, and as written cannot ensure that shellfish aquaculture will be limited to only minimal adverse effects to the environment. Any general permit that Seattle District may choose to promulgate must have far more stringent conditions to ensure that the large cumulative impact of all the past, continuing, and future shellfish operations in Washington, covering tens of thousands of acres, is environmentally sound and sustainable. Shellfish aquaculture, practiced in waters held in public trust, should not be allowed to make the same mistakes that terrestrial agriculture has made, like the destruction of habitat and pollution of waterways. Intensive shellfish aquaculture in Washington is threatening to do just that, and so it is of utmost importance that the permitting of these activities prevents shellfish growing from having adverse impacts to the aquatic environment. It is even more important that the Corps take the lead in protecting the waterways of the U.S. from poorly-managed intensive shellfish production, as Washington State seems to lack any environmental review of the cumulative effect of these operations. This is particularly disturbing given the unique ecological and cultural importance of Washington's coast line, and in particular, Puget Sound. The Corps must protect the public interest and the environment, by conditioning any general permit to protect clean water and wildlife habitat, especially for threatened and endangered species. These intertidal waters, after all, are a public resource and the intertidal ecosystems where shellfish are commercially raised are essential habitat for wildlife.

As CFS commented¹ to the national Army Corps, the Corps' analysis of the impacts of NWP 48 is inadequate under National Environmental Policy Act (NEPA), and the Corps has

¹ CFS Comments on Proposal to Reissue and Modify Nationwide Permits; Docket Number COE-2015-0017 / RIN 0710-AA73 (August 1, 2016), submitted via Regulations.gov, Tracking No. 1k0-8r3f-2q1x.

failed to consult with the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (FWS) as required under the Endangered Species Act (ESA). Those comments are incorporated here in their entirety. However, CFS is aware that the Seattle District is currently engaged in programmatic consultation with NMFS and FWS regarding all shellfish permitting in Washington, and is expecting both biological opinions shortly. CFS looks forward to seeing these biological opinions. It is unclear to CFS whether this consultation will cover any proposed NWP 48 use in Washington, seeing as the Seattle District has not yet decided what it will do in that regard. However, it is CFS's understanding that the programmatic consultation purports to cover most shellfish permitting activities for multiple NWP cycles. Given the impacts of expanded shellfish production in Washington, particularly in Puget Sound, Seattle District must consider the cumulative impact of all these new (now existing) operations as well as operations on never-before cultivated acreage. As part of considering the now-existing operations, fallow areas must be included, especially if eelgrass can recover from cyclical disturbance associated with shellfish farming in a matter of years. CFS is gravely concerned that the shellfish growers have overstated the acreage that is really actively farmed, making the impacts of all existing and new operations seem far more minimal than they would if fallow land was properly considered. Further, Seattle District, in its consultation with the Services, must consider the interrelated/interdependent actions of pesticide spraying that go along with some shellfish growing operations in Willapa Bay/Grays Harbor. As these NPDES permits are granted by the *State* Department of Ecology, no ESA consultation or analysis is happening at all, despite the grave danger that pesticides pose to listed species, including green sturgeon and salmon. Not only does Seattle District have a duty under the ESA to ensure that its shellfish permitting action do not jeopardize ESA-protected species or their critical habitat, it also has a duty under the CWA not to permit activities that have more than minimal adverse effects on the environment.

As written, the 2017 NWP 48 includes all continuing and new operations, and allows even new operations to avoid pre-construction notices (PCNs) as long as shellfish were grown in the last **100 years**, and removes the PCN requirement for disturbance to aquatic vegetation, or for a change from on-bottom culture (planting directly into the tidebed) to off-bottom culture (usually involving plastic gear). Basically, under this permit, very if any PCNs will ever be required, and Army Corps and the Seattle District more importantly, will have no way of knowing the true cumulative impact of these operations, or be able to mitigate those impacts with individual conditions for an operation. Given the failures under 2012 NWP 48 (no biological opinion covered the new operations, and it had much higher use than expected), Seattle District should not make the same mistakes and forego the NWP 48 in Washington. If Seattle District decides to issue regional general permits instead, they must be geared to the unique regions (Willapa Bay v. Puget Sound, and even different parts of Puget Sound), and it must complete environmental assessment under NEPA, as well as consultation with the Services (to the extent the proposed regional general permits are not the same as the actions currently being evaluated). Even then, CFS urges Seattle District to limit the regional general permits to **only** those shellfish aquaculture activities known to have limited negative impacts to the environment, specifically not including operations that use pesticides.

I. Legal Obligations

A. Division and District Engineers Have Authority to Issue Regional General Permits With Only Minimal Adverse Effects to Environment

Under the Clean Water Act, in carrying out its functions relating to the discharge of dredged or fill materials, the Army Corps:

may, after notice and opportunity for public hearing, issue general permits on a State, regional, or nationwide basis for any category of activities involving discharges of dredged or fill material if the Secretary determines that the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment.

33 U.S.C. § 1344(e)(1). Thus, regional permits have the same requirement that nationwide general permits, namely that the activities are “similar in nature” and will only cause *minimal* adverse effects to the environment, either separately or cumulatively. *See also* 33 C.F.R. § 323.2 (h) (general permit may be granted on nationwide or regional basis only if “activities it covers are substantially similar in nature and cause only minimal individual and cumulative environmental impacts”).

In issuing a general permit, either regional or nationwide, the Army Corps *must* properly consider the separate and cumulative impacts from the permit on the environment, and make a finding that the permit will not have more than minimal adverse impacts before granting any general permits under CWA § 1344(e)(1). *See e.g. Wyoming Outdoor Council Powder River Basin Resources Council v. U.S. Army Corps of Engineers*, 351 F. Supp. 2d 1232 (D. Wyo. 2005) (finding Corps’ was arbitrary and capricious when it issued a general permit for discharge of dredge and fill materials associated with coalbed methane gas in Wyoming, because it failed to consider cumulative impacts, relied on mitigation measures that were wholly unsupported and unmonitored, and failing to make a finding under the CWA that the cumulative impacts to the aquatic environment would be minimal, remanding to Corps); *Maryland Native Plant Socy. v. U.S. Army Corps of Engineers*, 332 F. Supp. 2d 845, 862 (D. Md. 2004) (finding Army Corps’ decision to allow construction of housing developments involving dredging and/or filling of wetlands, to proceed under general statewide permit as having minimal adverse environmental impact was arbitrary, capricious, and an abuse of discretion under the Administrative Procedures Act, where Corps failed to provide sufficient reasoning for its conclusion that project would have minimal adverse environmental impact).

B. National Environmental Policy Act

The National Environmental Policy Act (NEPA) is our basic national charter for protection of the environment. 40 C.F.R. § 1500.1. NEPA requires a federal agency to prepare a detailed environmental impact statement (EIS) for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C). NEPA “ensures that the agency . . . will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant

information will be made available to the larger [public] audience.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

If the federal action *may* significantly affect the environment, APHIS *must* prepare an EIS. *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998) (citation omitted); *Steamboaters v. U.S. Fed. Energy Regulatory Comm.*, 759 F.2d 1382, 1392 (9th Cir. 1985). To determine if an action may significantly affect the environment, an agency may prepare an environmental assessment (EA). 40 C.F.R. § 1508.9. If the agency determines that the action will not have a significant impact, the agency must supply a “convincing statement of reasons” to explain the action’s impacts are insignificant. *Save the Yaak v. Block*, 840 F.2d 714, 717 (9th Cir. 1988). The EA must “provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact.” *Id.* NEPA regulations require the agency to analyze (take a hard look at) all direct, indirect, and cumulative impacts. *See* 40 C.F.R. §§ 1508.8, 1508.9, 1508.13, 1508.18, 1508.27. Cumulative impacts include the incremental impact of the proposed action when added to all past, present, and reasonably foreseeable actions, taken not just by the agency, but by any entity. *Id.* § 1508.7. A thorough consideration of cumulative impacts is required in the preparation of an EA. *See, e.g., Kern v. Bureau of Land Mgmt.*, 284 F.3d 1062, 1075 (9th Cir. 2002).

Whether an action is significant requires consideration of the “context” and “intensity” factors, and an action may be “significant” if even one of the factors is present. *Id.* § 1508.27; *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 361 F.3d 1108, 1125 (9th Cir. 2004); *see Nat’l Parks & Conservation Ass’n*, 241 F.3d at 731 (either degree of uncertainty or controversy “may be sufficient to require preparation of an EIS in appropriate circumstances”).

C. Endangered Species Act

As recognized by the U.S. Supreme Court, the Endangered Species Act (ESA) is “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation” and “reveals a conscious decision by Congress to give endangered species priority over the ‘primary missions’ of federal agencies.” *Tenn. Valley Authority v. Hill*, 437 U.S. 153, 180, 185 (1978).

Section 7(a)(2) of the ESA requires every federal agency to consult the appropriate federal fish and wildlife agency (the Services, NMFS or FWS) to “insure” that the agency’s actions are not likely “to jeopardize the continued existence” of any listed species or “result in the destruction or adverse modification” of critical habitat. 16 U.S.C. § 1536(a)(2); *see also* 50 C.F.R. § 402.01(b).

To facilitate compliance with section 7(a)(2)’s prohibitions on jeopardy and adverse modification, the ESA requires each federal agency that plans to undertake an action to request information from the Services regarding “whether any species which is listed or proposed to be listed [as an endangered species or a threatened species] may be present in the area of such proposed action.” 16 U.S.C. § 1536(c)(1). If the Services advise the agency that listed species or species proposed to be listed may be present, the agency must then prepare a biological assessment for the purpose of identifying any such species that are likely to be affected by the proposed agency action. *Id.* If an agency determines that its

proposed action “may affect” any listed species and/or their critical habitat, the agency generally must engage in formal consultation with FWS. 50 C.F.R. § 402.14. The only way to forego formal consultation is a written concurrence from the Services with a “not likely to adversely affect” determination by the action agency, after informal consultation. *Id.* and § 402.13. At the end of the formal consultation, the Services must provide the agency with a “biological opinion” detailing how the proposed action will affect the threatened or endangered species and/or critical habitats, including a jeopardy opinion and any conservation or mitigation measures and an incidental take statement. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14.

D. Magnuson-Stevens Act

The Magnuson-Stevens Act (MSA) established procedures to identify, conserve, and enhance Essential Fish Habitat (EFH) for species regulated under a federal Fisheries Management Plan. 16 U.S.C. §§ 1801 *et seq.* The MSA requires consultation with NMFS on all actions, including proposed actions, which may adversely affect EFH. 16 U.S.C.A. § 1855(b)(2). To “adversely affect” means any impact that reduces the quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. 50 C.F.R. § 600.810. When NMFS is consulted on impacts to EFH under this act, it must “recommend to such agency measures that can be taken by such agency to conserve such habitat,” and should the action agency fail to adopt those measures it must explain its reasons for not following those measures. 16 U.S.C. § 1855(4).

II. Impacts of Shellfish Aquaculture in the Northwest

Shellfish aquaculture is not only practiced in the Pacific Northwest, but it has been practiced in Washington State for over 100 years. Recently, this shellfish cultivation has expanded, in both intensity and in geographic scope (particularly in areas like Puget Sound). The experiences with a NWP 48 in Washington indicate that a nationwide permit should not be used in Washington.

A. NWP 48 Overuse in Washington

When the NWP 48 was re-issued in 2012, it included not just existing shellfish operations (as in the 2007 permit), but also new operations. The Seattle District required a pre-construction notification (PCN) for all new/expanding NWP 48 activities in Washington (a regional condition that CFS supports), but predicted that the permit would only be used around 50 times a year, or 250 times over the 5-year life of the permit.² The Corps’ analysis was thus limited to this predicted cumulative impact. However, in reality NWP 48 was used over 1000 times from 2012 to 2016, affecting approximately 37,000 acres. The Seattle District issued 92% of all NWP authorizations in the nation during the 2012 NWP period, indicating that any general permit should just be a Washington-specific permit. The

² See USACE Seattle District, *Supplement to the National Decision Document for 2012 Nationwide Permit 48 and Regional General Conditions*, 31 (March 19, 2012).

overuse of NWP 48 to cover new and expanding operations in Washington has covered the expansion of intense shellfish aquaculture operations from the historically cultivated Willapa Bay into previously undisturbed areas in Puget Sound.³

B. Conversation of Natural Intertidal Ecosystems

The intertidal areas where shellfish are grown are essential habitats for many species, including invertebrates (such as commercially important Dungeness crab), finfish (including herring and salmon), and birds (migratory and shorebirds). This includes species listed as threatened and endangered and protected under the ESA. In particular, Willapa Bay serves as critical habitat for green sturgeon (feeding) and many listed salmon populations rear and feed in Washington's coastal waters (Puget Sound and Willapa Bay). These areas are habitat for many varieties of wildlife, serve as nurseries, and have important roles in cycling nutrients.⁴ Much of the intertidal areas in Washington still support eelgrass, which is declining in the rest of the world. Eelgrass or seagrass is a highly valued and protected native habitat for many species of fish, invertebrates, and birds, including migratory and shorebirds.⁵ Eelgrass is known as an "ecosystem engineer" because it can partially create its own habitat by slowing down water flow, while its roots and rhizomes bind and stabilize sediments. Although it was introduced, Japanese eelgrass (*Z. japonica*) provides many of the same food, shelter, and habitat functions as native *marina* eelgrass in Washington (and now grows along the entire Pacific coast from Humboldt, California to British Columbia).⁶

As the production of shellfish in Washington intensifies, more of the natural tidelands are being converted to shellfish production. While *wild* bivalves are known to clean water, the water quality impacts of intensive shellfish aquaculture may not always be beneficial; to the contrary, many aquaculture activities negatively affect water quality by the removal of eelgrass, the increase of wastes from concentrated production, and the disruption of sediments. There are no studies, and none described by the Corps in its Decision Document

³ See e.g. Coastal Geologic Services, Map of Known Existing and Proposed Shellfish Farm Locations in South Puget Sound, from 2012-2014, attached as Exhibit A.

⁴ Bendell-Young, L.I., *Contrasting the community structure and select geographical characteristics of three intertidal regions in relation to shellfish farming*, Environmental Conservation (2006), attached as Exhibit B.

⁵ NMFS, *Endangered Species Act – Section 7 Programmatic Consultation Biological and Conference Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Nationwide Permit 48 Washington*, 36-37 (Apr. 28, 2009) (NMFS 2009 BiOp).

⁶ Mach, M.E., S.W. Wyllie-Echeverria, and J. R. Ward. 2010. *Distribution and potential effects of a non-native seagrass in Washington State. Zostera japonica* Workshop, Friday Harbor Laboratories, San Juan Island, WA. Report prepared for Washington State Department of Natural Resources and Washington Sea Grant, *available at* http://file.dnr.wa.gov/publications/aqr_zostera_study.pdf.

for NWP 48, to verify the claim that shellfish clean the water. One of the most significant potential environmental impacts from dense shellfish aquaculture is a reduction in shoreline biodiversity. Monocultures of shellfish can fundamentally alter ecosystems by consuming nutrients previously relied on by native species, depositing waste on the seabed, and changing the physical dynamics of an environment.⁷

The various activities associated with shellfish aquaculture change the intertidal area, and do so perennially (oysters, for example, are grown out for 3-4 years), with impacts of the different stages of shellfish culture continuing year after year. These include bed preparation (or “cleaning,” which entails removal of native species, like sand dollars), seeding, grow out, and harvest. Bed preparation and harvest activities can temporarily increase turbidity and total suspended solids.⁸ Some activities, e.g. tilling, harrowing, dredge harvest and geoduck harvest, can remove submerged aquatic grass, i.e. eelgrass.⁹ Shellfish growing activities can thus cause benthic disturbance.¹⁰

C. Plastics

Another extremely disturbing aspect of commercial shellfish aquaculture in Washington, in particular, is the use of plastic gear, including PVC geoduck tubes (using over 43k tubes/acre), plastic anti-predator netting (high-density polyethylene), and plastic ropes for oyster long-lines (polyolefin). This gear adds plastic pollution to the intertidal waters and beaches, with grave impacts to wildlife, aesthetics, and food safety.

⁷ See *id.*; Bouwman, L., A. Beusen P. M Glibert, C Overbeek, M Pawlowski, J. Herrera S. Mulow, R. Yu, and M. Zhou, *Mariculture: significant and expanding cause of coastal nutrient enrichment*, Environ. Res. Lett. 8 (2013); DeFur, P. and D.N. Rader, *Aquaculture in estuaries: Feast or famine?* Estuaries Vol. 18, No. 1A (1995); Hastings, R.W. and D.R. Heinle, *The effects of aquaculture in estuarine environments: Introduction to the dedicated issue*, Estuaries Vol. 18, No. 1A (1995); Dethier, M., *Native shellfish in nearshore ecosystems of Puget Sound*, Puget Sound Nearshore Partnership Report No. 2006-04, Published by Seattle District, U.S. Army Corps of Engineers, Seattle, Washington (2006); Diana, J.S., H. S. Eгна, T. Chopin, M.S. Peterson, L. Cao, R. Pomeroy, M. Verdegem, W.T. Slack, M.G. Bondad-Reantaso, and F. Cabello, *Responsible Aquaculture in 2050: Valuing Local Conditions and Human Innovations Will Be Key to Success*, Bioscience, Vol. 63(4) (2013), attached as Exhibit C; Bendell, L.I. and P.C.Y. Wan, *Application of aerial photography in combination with GIS for coastal management at small spatial scales; a case study of shellfish aquaculture* (2013).

⁸ See *id.* and NMFS 2009 BiOp at 39.

⁹ *Id.* at 39; see also Dumbauld, Brett & McCoy, Lee M., *Effect of oyster aquaculture on seagrass Zostera marina at the estuarine landscape scale in Willapa Bay, Washington (USA)*, Aquaculture Environment Interactions Vol. 7 (2015) (finding that mechanical harvesting of oysters in Willapa Bay caused significant decrease in *z. marina* eelgrass).

¹⁰ NMFS 2009 BiOp at 40.



Figure 1 Left: Geoduck PVC tubes stuck into tidebed in Totten Inlet, WA. Right: Aerial shot of PVC tubes and oyster bags in WA.

Anti-predator netting traps wildlife, excludes wildlife from its habitat, and may become dislodged and transported. This netting actually provides little benefit to the industry despite its cost in terms of nearshore impacts and plastics pollution.¹¹



Figure 2: Left: A juvenile bald eagle is caught in an aquaculture net on Harstine Island, WA. Right: Remains of bird caught beneath anti-predator net

This plastic gear also breaks down into microplastics, and act as an additional source of plastic contamination in the ocean.¹² Microplastics absorb toxic pollutants already present in the water, and are being ingested by the very bivalves being cultivated.¹³ These microplastics act like a poison pill to aquatic life that consume them, and have been shown to reduce oyster's reproductive ability.¹⁴

¹¹ Bendell, L.I., *Favored use of anti-predator netting (APN) applied for the farming of clams leads to little benefits to industry while increasing nearshore impacts and plastics pollution*, Marine Pollution Bulletin (2015), attached as Exhibit G.

¹² *Id.*

¹³ *Id.*; Kieran Mulvey, *Oysters Are Munching Our Microplastics*, Discovery News, <http://goo.gl/hJn5Ov>.

¹⁴ Chelsea Harvey, *All the plastic that we're throwing in the oceans could be hurting baby oysters*, Washington Post (Feb. 2, 2016); Rossana Sussarellu, *et al.*, *Oyster reproduction is*



Figure 3 Left: Yellow rope used in long-line culture growing through oyster shell. Right: PVC tube degrading

D. Pesticides

Finally, Washington State is the only state that allows pesticide use with shellfish aquaculture. Pesticides are meant to harm or kill living organisms, so their use has a high potential for adverse effects to non-target wildlife. Some pesticides, like carbaryl, were insecticides used to kill burrowing shrimp, and others are herbicides to kill non-native grasses, such as non-native eelgrass.

Since 1963, Washington State allowed shellfish growers in Willapa Bay to use carbaryl to control native burrowing shrimp, which loosen substrate and cause bivalves to sink and suffocate. *See* NMFS 2009 BiOp at 16. However, shellfish growers agreed to phase out the use of carbaryl by 2012, and its discharge permit was not renewed by Washington Department of Ecology (the state agency with authority under the CWA to administer the National Pollutant Discharge Elimination System Program). To replace carbaryl (a known carcinogen), the growers of Willapa Bay/Grays Harbor selected imidacloprid, the most widely used insecticide in the world. A neonicotinoid, imidacloprid works systemically and is neurotoxic to invertebrates. After WA Dept. of Ecology initially granted the growers a NPDES permit to spray imidacloprid on shellfish beds, the permit was revoked due to public outcry. However, the growers are back and insisting they need to spray this neonic on shellfish beds to kill native shrimp,¹⁵ despite the severe impacts that use of an

affected by exposure to polystyrene microplastics, PNAS 2016 113 (9) 2430-2435 (February 1, 2016), attached as Exhibit F; Oona M. Lönnstedt* and Peter Eklöv, *Environmentally relevant concentrations of microplastic particles influence larval fish ecology*, Science (June 3, 2016), attached as Exhibit E; Lisbeth Van Cauwenberghe, Colin R. Janssen, *Microplastics in bivalves cultured for human consumption*, Environmental Pollution (2014), attached as Exhibit D.

¹⁵ Jennifer Wing, *Willapa Bay Oyster Farmers Ask State Again For Permission To Use Neurotoxin*, KPLU, (Jan. 9, 2016) <http://www.kplu.org/post/willapa-bay-oyster-farmers-ask-state-again-permission-use-neurotoxin>; Wash. Dept. of Ecology, Willapa Bay- Grays Harbor: Burrowing Shrimp Control – Imidacloprid,

insecticide could have on the rest of the benthic invertebrate life, the fish that rely on them as a food source (including endangered green sturgeon), on the fish themselves (like salmon), and on birds (known to be susceptible to neonicotinoids).¹⁶ Our waterways are already contaminated with neonics just from run-off and drift from terrestrial use,¹⁷ and so the intentional introduction of imidacloprid into an aquatic environment has a very high potential for negative impacts to the already pollutant-burdened waters.

Shellfish growers in Willapa Bay, WA are *currently* allowed to spray the herbicide imazamox to kill non-native eelgrass, pursuant to a NPDES permit issued April 2, 2014.¹⁸ While non-native eelgrass tends to grow at higher elevations than native eelgrass, Willapa Bay is so flat that there are many mixed beds, and the herbicide will kill native eelgrass just as easily as non-native.¹⁹ The permit allows thousands of acres to be sprayed with the herbicide annually, and if the growers leave a 10m buffer to the next property line, they are released from monitoring requirements. This herbicide will not only kill eelgrass it is applied to (including native eelgrass in mixed beds), it will not stay where it is put, and will be instead transported to other parts of Willapa Bay

III. USACE Should Not Re-Issue NWP 48 As Proposed

Given the impacts outlined above (and in other comments received by the Corps regarding NWP 48), the Seattle District should not re-issue NWP 48 in Washington. Before the Seattle District considers issuing any general permit, it must fully comply with NEPA (which means analyzing the impacts of shellfish aquaculture) and the ESA and MSA, which means consultation with NMFS and FWS *before* issuing the permit. Rather than use a nationwide permit, CFS urges the Seattle District to issue individual permits, or potentially regional permits, that will take the unique characteristics of each intertidal ecosystem into account, as well as the type of shellfish aquaculture contemplated.

<http://www.ecy.wa.gov/programs/wq/pesticides/imidacloprid/index.html> (last visited Aug. 1, 2016).

¹⁶ See e.g. NMFS, Comments on draft NPDES permit allowing use of imidacloprid to control burrowing shrimp in Willapa Bay and Grays Harbor (Dec. 8, 2014), *available at* <http://www.ecy.wa.gov/programs/wq/pesticides/imidacloprid/docs/commentsDec2014/noaa.pdf>.

¹⁷ CFS, *Water Hazard: Aquatic Contamination by Neonicotinoid Insecticides in the United States* (Sept. 16, 2015), <http://www.centerforfoodsafety.org/issues/304/pollinators-and-pesticides/reports/4048/water-hazard-aquatic-contamination-by-neonicotinoid-insecticides-in-the-united-states>.

¹⁸ Wash. Dept. of Ecology, *Zostera japonica* Management on Commercial Clam Beds in Willapa Bay General Permit, <http://www.ecy.wa.gov/programs/wq/pesticides/eelgrass.html> (last visited Aug. 1, 2016).

¹⁹ U.S. FWS, Comments to Wash. Dept. of Ecology on NPDES permit for control of non-native eelgrass, (Feb. 14, 2014) <http://www.ecy.wa.gov/programs/wq/pesticides/eelgrass/docs/commentsFeb2014/usfws.pdf>.

A. USACE Fails to Comply with NEPA

The Corps drafted the Decision Document as its purported EA. However, this document falls far short of the Corps' NEPA duties, and therefore, if the Seattle District were to adopt NWP 48 (which it should not), it will need to address these issues in its own NEPA analysis before going forward:

- **No purpose and need statement.** EAs must include a discussion of the need for the proposal. 40 C.F.R. § 1508.9(b). Without this discussion, the public cannot know the scope of potentially reasonable alternatives.
- **Inadequate alternatives.** The alternatives are the “heart” of the NEPA analysis, and they are required in an EA, including a “no action” alternative and other reasonable alternatives. *Id.*, § 1508.25(b). USACE only listed a “no action” alternative and its proposed NWP 48, which would cover both existing and new (no shellfish grown for 100 years) operations, and would not require PCNs for any operations except those introducing a new species or “new” (in last 100 years) operations. USACE did not consider any other alternatives, and this is not a reasonable range. *See Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 812 (9th Cir. 1999) (evaluation of “no action” and just two nearly identical alternatives was NEPA violation); *Ilio'ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1101 (9th Cir. 2006) (Army's consideration of just “no action” and one other alternative violated NEPA, where purpose and need could have been fulfilled by other alternatives and these were not considered, nor explanation given of why other alternatives would not be feasible). Further, USACE's discussion of the alternatives it did have was wholly inadequate. The Decision Documents merely discusses the downsides of the “no action” alternative while listing potential alternatives that might come from regional conditions or individual conditions. USACE has no way to evaluate the impacts of these potentially different sets of conditions. Instead, USACE should consider the differences between its proposed NWP and other NWPs (with a known set of conditions), and other types of permits (regional general permits and individual permits). The NWP 48 as currently conditions is only *one* alternative, and CFS suggests the following additional alternatives:
 - **NWP with more restrictive conditions** – this NWP would not include any operations that are new, which “new” defined as not actively in operation for 5 years or more, including expansion into fallow areas. Based on the findings of the study USACE relies on, Dumbauld & McCoy, 2015, recovery time for eelgrass beds after various shellfish activities (i.e. mechanical harvest, shading from suspended culture) is between 1 and 4 years. If beds do recover this quickly, then beds left unused for 5 years would presumably be returned to their natural state (or nearly natural) and so any new activities here should be considered “new” based on the available science. If USACE finds that beds require *more time* to recover to a relatively undisturbed state, then that amount of time should be used to define “new.” This alternative would also prohibit the use pesticides, plastics, and mechanical harvesting, as all of

these activities have the potential for more than minimal adverse impacts to the environment.

- **No NWP** – this alternative should include discussion of possibility of Regional General Permits or individual permits (some combination to be determined by Divisions and Districts). Not all regions would need permits because shellfish do not grow in all parts of the county, *see e.g.* http://www.nmfs.noaa.gov/aquaculture/homepage_stories/18_marine_aquaculture_infographic.html. Because USACE relies so heavily on mitigation to be determined by District Engineers, this alternative should be considered.
- **Mitigation of Impacts.** Any mitigation measures used to show that an activity will not be “significant” (and thus require an EIS) must be adequately explained in detail and be enforceable. USACE relies so heavily on mitigation at the District level, but it fails to actually describe the possible effects (direct, indirect and cumulative) from shellfish aquaculture activities or how these unknown mitigation measures will actually avoid more than minimal adverse impacts. These shellfish activities have been permitted through NWPs since 2007, but USACE makes no effort to provide information to the public of the impacts from these past permitted activities, possibly because USACE did not have any system in place to actually monitor and evaluate these impacts. While USACE relies on to-be-determined regional conditions to mitigate any impacts and therefore make the NWP impacts minimal, it does not explain what kind of conditions might mitigate the potential adverse impacts. Nor does it provide any baseline that is relevant to commercial shellfish aquaculture as opposed to the general loss of wetland habitat nationwide (while shellfish will be grown in marine intertidal areas). While the regional conditions that may or may not be added are to-be-determined, USACE also relies on the general conditions attached to the NWP to minimize impacts. However, many of these general conditions are so vague as to be basically useless (i.e. general condition 23 requiring permittees to minimize and avoid impacts). How will USACE ensure that permittees using NWP 48 for shellfish aquaculture activities will follow this condition? What ways can those growers minimize their impacts? USACE provides little in the way of concrete guidelines for how permittees can actually achieve the general conditions on which it relies to mitigate any more-than-minimal adverse impacts. Further, any individual mitigation measures will only be attached if a permittee is required to submit a PCN, and given the proposed conditions, that will likely be few and far between. The Corps is not proposing to require a PCN for any activities that are not “new” (in the last 100 years), or for disturbance of aquatic vegetation, or for a change from bottom to off-bottom culture. This effectively removes almost all PCN requirements and so it is very unlikely that District Engineers will be able to effectively attach any individual mitigation measures under the proposed NWP 48.
- **Direct, Indirect, and Cumulative Impacts.** First, the baseline USACE uses includes the activities authorized under the previous 2012 NWP 48, but as noted above, the number of activities and affected acres was many times larger than previously evaluated. Making the current landscape part of the baseline ignores the effects of the greatly expanded commercial shellfish aquaculture permitted, but

never evaluated, under the 2012 permit. USACE's description of the Affected Environment does not focus on the estuarine/marine environment that is going to be affected by this permit; instead the section seems to be general to all NWP's. Under the Environmental Consequences section, USACE fails to actually describe *any* direct or indirect effects from allowing all existing and "new" commercial shellfish aquaculture activities under a nationwide permit. Again, the Corps merely refers to future regional conditions to mitigate any impacts, but that is not what NEPA requires. While there may not be *extensive* data on the ecological impact of shellfish aquaculture in the U.S., studies do indicate that intensive shellfish farming is associated with a decrease in species richness, altered species abundance and distribution, changes in community intertidal structure from surface species, subsurface species, and bivalves to just bivalves, and greater accumulations of surface sediment silt and organic matter. *See supra* n.3, 6. Dumbauld and McCoy 2015, cited by the Corps to indicate that PCNs are somehow not required because eelgrass can recover after being disturbed, found that mechanical harvest of oysters has a significant negative impact on eelgrass. Other studies show that equipment regularly used for oyster and clam culture, especially anti-predator nets, are both ineffective and damaging to the nearshore environment, as well as a source of plastic pollution to the marine environment. *Supra* n.10. None of these impacts are discussed in the Corps' environmental analysis, but under NEPA the environmental impact of the proposed action is required. 40 C.F.R. § 1508.9(b). USACE also wrongly assumes there will be no cumulative impacts (again based on regional conditions) despite its estimate that NWP 48 would impact over 56,000 acres of intertidal habitat. How many of those acres are relatively undisturbed tidebeds, which will be converted to intensive shellfish aquaculture (beach stripped of native species, PVC tubes stuck into beds at density of 43k/acre, anti-predator plastic netting laid over top, or sprayed with herbicides to kill eelgrass)? The Corps acknowledges that the impact and tradeoffs of shellfish culture should be examined at the landscape scale, (Decision Doc. at 52), but does not do this, instead leaving cumulative effects analysis for District Engineers on an individual PCN basis. The Corps further states that without the data, it is hard to assess the cumulative impacts (Decision Doc. at 30), but without compiling information on the impact of the NWP, the public and the Corps will never be able to assess the overall impacts that commercial shellfish aquaculture is having. The Corps must evaluate cumulative impacts of adding tens of thousands of acres of shellfish farms to the nation's shorelines and estuaries, and collect the data to do so.

- **Significance Factors.** USACE did not at all discuss the context and intensity factors that might indicate that this proposed NWP will have a "significant impact to the human environment" and thus require an EIS. Shellfish aquaculture is controversial in Washington, and as acknowledged by the Corps, there are possible effects on the human environment that are highly uncertain or involve unique or unknown risks. Because this permit would affect tens of thousands of acres of shoreline and estuarine aquatic environments, it has the potential to be cumulatively significant, particular when added to the other impacts and stressors to these regions. This is enough to establish significant impact and require an EIS.

B. USACE Fails to Comply with ESA and MSA

As stated in the comments submitted by Center for Biological Diversity (and joined by CFS), the national Army Corps cannot avoid its consultation duties by waiting for individual permittees to report that their activities “might” affect listed species. While individual evaluation is important (because different types of aquaculture have different impacts), this does not relieve the Corps of the requirement to consult where the nationwide permit “may affect” listed species. Given the intertidal and estuarine areas that will be impacted by these activities are home to many listed species (fish, birds, etc.), this NWP definitely “may affect” those species (including pacific salmon populations and green sturgeon in Washington). Programmatic consultation is required to determine as to the cumulative effect of permitting essentially all shellfish aquaculture in every region of the country (where hundreds of protected species may overlap with these activities). The Decision Document does not provide any analysis of which species overlap with shellfish aquaculture. Further, it seems there is a good chance that, because PCNs are not otherwise required for most shellfish aquaculture under the proposed NWP 48 conditions, that growers will simply not provide PCNs, despite general condition 18, to avoid consultation. Permittees are not the appropriate parties to determine whether an activity may (or “might”) affect listed species; the “effects” determination should be made by the Corps, the federal agency permitting the activity. 50 C.F.R. § 402.14. The Seattle District is now in programmatic consultation with NMFS and FWS regarding its shellfish permitting, and the Corps should await that analysis and include its findings in this NWP, and do its own consultation before moving forward.

The MSA also requires consultation where EFH may be adversely affected. As noted above, shellfish aquaculture can have negative impacts to the ecosystem and thus EFH consultation is also required before the Corps can re-issue this permit. In past consultations, NMFS included consideration of EFH and issued conservation measures. *See* NMFS 2009 BiOp.

CFS recognizes that the Seattle District has been engaged in programmatic consultation with NMFS and FWS for several years and should be receiving and making public near final biological opinions from both shortly. Before CFS reviews these opinions, it is unclear whether they will be sufficient to address any regional general permit that the Seattle District might issue, and reminds the Seattle District that in addition to its CWA minimal impacts findings, it must ensure that any shellfish activities conducted under a general permit must not jeopardize listed species or their critical habitat. The analysis performed by NMFS and FWS must take into account the actual scope and conditions of any regional general permits for the Seattle District to be in compliance with the ESA.

C. Individual or Regional General Permits Would Be More Appropriate

Given USACE’s plan to do individual ESA consultations for every shellfish aquaculture activity that “might” affect listed species, it may as well just require individual permits (using a set of conditions that could be altered for each permittee according to need). It is known that different types of shellfish farming have different impacts (bottom v. off-bottom culture, mechanical v. hand harvesting, use of pesticides v. none, the use of anti-predator nets, PVC tubes, etc.) and different areas have different ecological considerations. Even

within Washington State, Willapa Bay is different from the Puget Sound. Regional areas are very different as well. Washington is not the same as Oregon, and even the Pacific Northwest is unique from California, or the Gulf (i.e. BP oil spill), or the Northeast (Chesapeake Bay). Individual or possibly regional general permits are therefore better suited to addressing the needs of each area, and actually evaluating impacts from potential alternative permits, unlike the NWP where no analysis has been done at all.

Regional general permits, like NWPs, may only be granted if activities are similar and will only have minimal individual and cumulative adverse effects to the environment. 33 U.S.C. § 1344(e)(1); 33 C.F.R. § 323.2 (h) (general permit may be granted on nationwide or regional basis only if “activities it covers are substantially similar in nature and cause only minimal individual and cumulative environmental impacts”). The Seattle District Engineers are in best position to determine what types of aquaculture activities are appropriate for their shorelines, near shore environments, and estuaries. Regional general permits would also be more clear and easy to follow than NWPs, which have general conditions, then regional general conditions, and regional conditions specific to the NWP. Since the national Army Corps relies entirely on regional conditions to minimize adverse impacts from NWP 48, it should not be adopted in Washington at all, with regional or individual permits instead.

CFS urges the Seattle District to consider the unique ecological areas in Washington if it decides to issue regional general permits, and at minimum divide Willapa Bay/Grays Harbor and Puget Sound. Further, the District should consider whether different types of shellfish culture should really be considered “similar” activities, given the difference between on-bottom culture (shellfish planted directly in tide bed, no plastic gear) and off-bottom culture types, and different types of harvest. Most importantly, the use of pesticides by some growers is *not* a similar activity to other shellfish growers and these growers should not be covered under any general permit.

D. Any General Permit Seattle District Adopts Must Be Limited to Types of Shellfish Farming that Actually Only Have Minimal Adverse Impacts to Environment

The Seattle District must comply with NEPA, the ESA and the MSA before going forward with reissuance of any general permits. Under the CWA, the District must make a finding that the activities allow under a general permit would only have minimal adverse impacts, both individually and cumulatively. To do that the new general permits should only cover shellfish farming practices that have minimal impact to the intertidal/estuarine environment. The District should, in conjunction with NMFS and FWS, critically evaluate the impacts of operations that use plastics and/or pesticides and how various growing and harvest techniques perennially and repeatedly alter essential habitats. The District should investigate the types of growing operations that have the least environmental impact. For instance, Bendell 2015 also suggests “clam gardens,” an ancient method of clam culture that involves stone walls set at low tide to retain sediment and nutrients and provide an environment conducive to bivalve growth. *Supra* n.10 at 26-27.



Figure 4: Healthy shellfish beds in Grays Harbor without use of plastics or pesticides, FMO Aquaculture in Grays Harbor.



Figure 5: Heavy machinery, pesticide injection and aerial spraying on Willapa Bay shellfish beds

Conclusion:

Instead of adopting a highly flawed NWP 48 (for which the Army Corps has failed to comply with NEPA, ESA, MSA, or the CWA), CFS urges the Seattle District to forgo a NWP for commercial shellfish activities and instead issue individual permits (with programmatic consultation under the ESA to determine cumulative impacts) or regional permits for various areas and types of shellfish culture activities within Washington.

Sincerely,

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