THE HONORABLE JAMES L. ROBART

UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF WASHINGTON

CENTER FOR BIOLOGICAL DIVERSITY, Plaintiff, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.* Defendants.	CASE NO. 2:13-cv-01866-JLR **PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT** NOTE ON MOTION CALENDAR: November 7, 2014 ORAL ARGUMENT REQUESTED

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INTRODUCTION

Seawater in the Pacific Northwest has become lethal to shellfish. During the past decade, wild and hatchery shellfish populations collapsed in Washington and Oregon. These die-offs signal that a major water quality problem—ocean acidification—is damaging the local economy and the marine ecosystem. In fact, the Environmental Protection Agency (EPA) acknowledges that evidence shows ocean acidification has killed billions of oyster larvae in the Pacific Northwest. Answer ¶¶ 60-61. Yet the agency arbitrarily concluded that there are no water quality problems in Washington or Oregon due to ocean acidification.

As detailed below, EPA should have identified Washington and Oregon seawaters that are corrosive to shellfish as impaired under Section 303(d) of the Clean Water Act because the waters violate the states' water quality standards, which would have required the states to identify, manage, and improve the waters' health. 33 U.S.C. § 1313(d).

First, the record contains extensive evidence that existing acidic conditions harm shellfish and other wildlife and scientific studies detailing exceedances of state pH standards. Contrary to that evidence, EPA found there was no violation of Washington and Oregon's water quality standards, which require marine waters to support aquatic life such as shellfish and to be within a specific pH range. Therefore, EPA improperly disregarded information regarding shellfish die-offs in hatcheries and ignored the best available science regarding changes in pH.

Second, the information missing from the record also shows that EPA failed to examine all existing and readily available data as mandated by the law. 40 C.F.R. § 130.7(b)(5). EPA was aware of and ignored important repositories of data, including its own water quality database, that it should have used to determine whether marine water bodies were meeting water quality standards. EPA's failure to evaluate these data violates its own regulations and renders its decision arbitrary.

In light of EPA's arbitrary and capricious decision to approve of Oregon and Washington's 303(d) lists that failed to identify waters suffering from ocean acidification, the Center moves for summary judgment and requests this court remand to the agency for a new determination that complies with the requirements of the Clean Water Act.

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BACKGROUND

A. Factual Background

A 2006 feature article in the New Yorker called *The Darkening Sea* depicted the apocalyptic story of a small sea animal, a pteropod, dissolving in ocean water. WA-000731 (Kolbert 2006 at 2-3). The article warned that ocean acidification puts "a whole category of organisms that have been around for hundreds of millions of years . . . at risk of extinction." *Id.* at 5 (citation omitted). That apocalyptic future is now: ocean acidification has arrived in the Pacific Northwest and is already harming marine life. During a survey in 2007, government scientists documented corrosive waters along the entire Pacific Coast and found that shellfish were being exposed to harmful conditions not predicted until 2050. *Id.* (Feely 2008 at 1490-91). These acidified waters have caused a devastating collapse in the region's shellfish industry. *Id.* (Barton 2012 at 698). Since 2005, wild oysters have failed to reproduce, and shellfish hatcheries have experienced massive mortalities in Washington and Oregon. WA-000712 (Feely 2012 at 70). Meanwhile, corrosive waters recur every year in Puget Sound. *Id.* (Moore 2012 at 36-37). In 2012, Washington's governor convened a panel of scientists and policymakers to investigate the impacts of ocean acidification and recommend action. The Blue Ribbon Panel began its report with a sober reminder of ocean acidification's real world implications:

> Between 2005 and 2009, disastrous production failures at Pacific Northwest oyster hatcheries signaled a shift in ocean chemistry that has profound implications for Washington's marine environment. Billions of oyster larvae were dying at the hatcheries, which raise young oysters in seawater. Research soon revealed the cause: the arrival of low-pH seawater along the West Coast, which created conditions corrosive to shell-forming organisms like young oysters. The problem, in short, was ocean acidification.

Id. (Blue Ribbon Panel at xi). As stated by the Panel, "it is time to act." *Id.* at xix.

Ocean acidification, often described as global warming's "evil twin," is caused by increasing carbon dioxide (CO_2) emissions and land use changes. WA-000731 (Pelejero 2010 at 1). Seawater absorbs CO_2, causing a chemical reaction that reduces seawater pH and makes the oceans more acidic. *Id.* (Feely 2010 at 442-43). Anthropogenic sources of carbon dioxide have caused a thirty percent increase in ocean acidity globally. *Id.* While carbon emissions are the

main driver of ocean acidification, regional factors also have significant effects. These local contributions include agricultural runoff, erosion, polluted stormwater, river discharges and local emissions of nitrogen oxides, and sulfur oxides. WA-000712 (Blue Ribbon Panel at xii).

Acidified ocean waters seriously harm marine wildlife and the entire ocean ecosystem. When carbon dioxide concentrations in seawater increase, the availability of carbonate ions decreases, making it more difficult for marine organisms to form, build, and maintain the calcium carbonate shells and skeletons required for their survival. As seawater becomes more corrosive, it can kill fish eggs and inhibit the development of, and essentially dissolve, the shells of small crustaceans, baby shellfish, and other tiny creatures at the base of the food web. WA-000731 (Fabry 2008 at 423-424). Ocean acidification also harms and stresses fish, squid, and other animals that do not build shells. *Id.* Not only does ocean acidification directly threaten various types of marine animals, it also has implications for the broader marine environment and food web.

In light of the serious threat posed by ocean acidification, the Center urged Washington and Oregon to use their Clean Water Act authority, 33 U.S.C. § 1313(d), to identify and protect waters impaired by ocean acidification. *See, e.g.*, WA-000800-20; OR2004555-66. The Center provided the states with extensive evidence of both the broad threat of ocean acidification and the specific harms in Washington and Oregon, including scientific articles documenting:

- Massive oyster mortalities in an Oregon shellfish hatchery linked to Netarts Bay seawater with elevated CO_2, OR2-004551-52 (Barton 2012);
- Declines in abundance and size of the California mussel, blue mussel and goose barnacle, correlated with a severely declining pH trend at the Strait of Juan de Fuca, which became 100% more acidic between 2000 and 2008, WA-000731 (Wootton 2008 at 18849);
- Corrosive waters recurring annually in the entire Puget Sound water column from the Strait of Juan de Fuca through the main basin to the South Sound, with highly corrosive waters in the Hood Canal, WA-000731 (Feely 2010 at 444-45), WA-000712 (Moore 2012 at 36-37);
- Corrosive waters due to anthropogenic CO_2 along the entire Washington and Oregon coasts, WA-000731 (Feely 2008 at 1490);
- Model calculations of the anthropogenic contribution of CO_2 to waters off the Oregon coast and persistence of corrosive waters in Oregon, OR2-002882 (Juranek 2009);

- An increase in the toxicity of harmful algae attributed to ocean acidification that can cause illness and death of humans and marine mammals that eat shellfish, WA-000712 (Feely 2012 at 66, Fu 2012 at 207, Tatters 2012 at 1);
- The status of ocean acidification, its biological impacts including shellfish harms, and causes in Washington, *see generally* WA-000712 (Feely 2012).

These alarming studies warn of the danger that ocean acidification poses to the marine environment and food web. More than thirty percent of Puget Sound's marine species are vulnerable to ocean acidification because they build their shells from calcium carbonate. WA-000712 (Blue Ribbon Panel at xiii). These principal studies, supported by over 100 others, form the best available scientific information. *See generally* WA-000731; WA-000712; OR2-000831 - OR2-001298; OR2-001317 - OR2-004494; OR2-007615.

In 2012, as mandated by Clean Water Act Section 303(d), Washington and Oregon completed state-wide water quality assessments and submitted their 303(d) lists of impaired waters to EPA for approval. WA-000071; OR1-000309. Despite the substantial evidence submitted by the Center, neither states' list contained any waters impaired by ocean acidification. After initially rejecting Oregon's proposed list, on December 14, 2012, EPA finalized Oregon's list, but did not identify any of the state's ocean waters as impaired for ocean acidification. OR2-000001. On December 21, 2012, EPA approved Washington's list of impaired waters without adding any ocean segments as impaired due to ocean acidification. WA-000001.

B. Legal Background

1. Clean Water Act

The Clean Water Act is the nation's strongest law protecting water quality. Congress enacted the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, with the express purpose of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters" and promptly eliminating water pollution. *Id.* § 1251(a). Section 303(d) requires each state to establish water quality standards. *Id.* § 1313(a)-(c); 40 C.F.R. § 130.3. Water quality standards set goals for enhancing water quality and must "provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation." 40 C.F.R. § 130.3.

Every two years, states must identify impaired water bodies for which existing pollution controls "are not stringent enough" to ensure "any water quality standard applicable" will be met. 33 U.S.C. § 1313(d). This list is known as a "303(d)," or "impaired waters," list. States must use "all existing and readily available water quality-related data and information." 40 C.F.R. § 130.7(b)(5). The list must include all water bodies that fail to meet "any water quality standard," including numeric criteria, narrative criteria, water body uses, and antidegradation requirements. *Id.* § 130.7(b)(1)(iii) & (b)(3). Additionally, states must "identify the pollutants causing or expected to cause violations of the applicable water quality standards." *Id.* § 130.7(b)(4).

If a water body does not meet a water quality standard, but the specific pollutant or source of the problem is unknown, the state must nonetheless identify the water body as impaired. WA-001231. Because airborne pollutants can deposit onto water bodies and contribute to declining water quality, EPA supports listing based upon a "presumption that the pollutant source, particularly when from atmospheric deposition, is ubiquitous, and therefore uniformly affecting segments in large geographic areas." WA-001170. Since water quality monitoring is often sparse, EPA guidance further supports listing based upon small data sets, modeling, and other information about pollution. *Id.*

Once a state develops its impaired waters list, the state submits the list to EPA, and EPA must approve, disapprove, or partially disapprove it. 33 U.S.C. § 1313(d)(2). EPA may approve a list only if it meets all Clean Water Act and regulatory requirements and identifies all waters failing to meet any water quality standard. 40 C.F.R. § 130.7(b), (d)(2). If EPA disapproves a state's list, then within 30 days it must identify waters that should have been listed as impaired. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2); *see also Alaska Ctr. for the Env't v. Reilly*, 762 F. Supp. 1422, 1429 (W.D. Wash. 1991). EPA must solicit and consider public comment on such listings. 40 C.F.R. § 130.7(d)(2).

After a water body is listed as impaired, the state has the authority and duty to control pollutants from all sources that are causing the impairment. Specifically, the state or EPA must establish total maximum daily loads (TMDL) of pollutants that a water body can receive and

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still attain water quality standards. 33 U.S.C. § 1313(d). A TMDL serves as an informational tool and goal for the establishment of further pollution controls. *City of Arcadia v. EPA*, 411 F.3d 1103, 1105 (9th Cir. 2005). States implement the maximum loads by incorporating them into the state's water quality management plan and by controlling pollution from nonpoint and point sources (via National Pollutant Discharge Elimination System, "NPDES," permits). 33 U.S.C. § 1313(e); 40 C.F.R. §§ 130.6, 130.7(d)(2).

Section 303(d), therefore, serves as an important first step in assuring our waters attain water quality standards. The Section 303(d) list informs the development of TMDLs, which are essential tools for the establishment of pollution controls, and thus ensures the attainment of water quality standards *whatever* the source of the pollution.

2. States must address ocean acidification in 303(d) lists

In 2010, EPA issued a decision memorandum recognizing the seriousness of ocean acidification and concluding "that States should list waters not meeting water quality standards, including marine pH [water quality criteria], on their 2012 303(d) lists, and should also solicit existing and readily available information on [ocean acidification] using the current 303(d) listing program framework." OR2-0002101.

3. Washington's water quality standards

Washington's marine waters are protected by several water quality standards relevant to ocean acidification. *See* WA-0001419, *et seq*. Most coastal waters in Washington are designated as "extraordinary quality" for aquatic life uses. WAC 173-201A-612. Such waters must support "[e]xtraordinary 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." *Id.* 173-201-210(1)(a)(i). The pH standard for marine waters of extraordinary quality requires that "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." *Id.* 173-201A-210(1)(f). Additionally, ocean waters of "excellent quality" must support "[e]xcellent quality . . . clam, oyster and mussel rearing and spawning." *Id.* 173-201-210(1)(a)(ii).

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To support the beneficial uses of Washington marine waters, "deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, [or] cause acute or chronic conditions to the most sensitive biota dependent upon those waters." *Id.* 173-201A-260(2)(a). Additionally, Washington requires the protection of shellfish harvesting and wildlife habitat uses for coastal waters. *Id.* 173-201A-210(1)(a), (2). Washington's antidegradation policy provides that existing and designated uses must be maintained and protected, and "[n]o degradation may be allowed that would interfere with, or become injurious to, existing or designated uses." *Id.* 173-201A-310.

4. Oregon's water quality standards

Oregon has set several water quality standards applicable to ocean acidification. *See* OR2-005108 *et seq*. Oregon's coastal waters must be protected for beneficial uses that include fish and aquatic life, wildlife and hunting, and fishing uses. OAR 340-041-0220, -0230, -0300, Tables 220A, 230A & 300A. Oregon's biological criteria require that "waters of the state must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities." *Id.* 340-041-0011. The water quality standards also protect against "other conditions that are deleterious to fish or other aquatic life." *Id.* 340-041-0007(10). Further, "waters will be free from dissolved gasses, such as carbon dioxide . . . , in sufficient quantities … to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such water." *Id.* 340-041-0031. The antidegradation policy requires the maintenance and protection of existing water quality, which must support propagation of shellfish. *Id.* 340-041-0004(6).

In summary, the Clean Water Act directs EPA to ensure that Oregon and Washington have reviewed all available data and identified all waters for which existing pollution controls are insufficient to meet any water quality standard, including when ocean acidification is causing a water quality violation.

STANDING

The Center has standing to challenge EPA's approval of Oregon and Washington's impaired waters lists. Its members' professional, recreational, and aesthetic interests are harmed

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by the additional pollution, ocean degradation, and harm to wildlife that have occurred and will occur as a result of not including waters impaired by ocean acidification on Oregon and Washington's impaired waters lists. The Center's members are also harmed by the loss of information about impaired waters and the loss of procedural opportunities to advocate for strong pollution controls to lessen both local and national sources of ocean acidification. These harms are the direct result of EPA's decision to approve the states' impaired waters lists, and so reversing EPA's approval of those lists would remedy these injuries.

To demonstrate Article III standing, the Center must show that at least one if its members has standing to sue in his or her own right.[1] *Natural Res. Def. Council v. EPA*, 542 F.3d 1235, 1244 (9th Cir. 2008). A member has standing if (1) he or she "has suffered an 'injury in fact' that is (a) concrete and particularized and (b) actual or imminent . . . ; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely . . . that the injury will be redressed by a favorable decision." *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 180-81 (2000).

The Center clearly has standing to sue. Center members live, work, and recreate in parts of Washington and Oregon that are affected by ocean acidification. Center member David Weitzer is an Oregonian who has taken multiple trips to the Washington and Oregon coasts every year since he was a child. Weitzer Decl. ¶¶ 3, 6, 7. He looks for wildlife; surfs; investigates tidepools to observe the hermit crabs, small fish, chitons, starfish, anenomes, urchins, and other organisms living in them; and takes long beachcombing walks to investigate what the tide has brought in. *Id.* ¶ 7. Center employee and member Mickey Moritz lives near Puget Sound and

[1] Additionally, the interests at stake in the litigation must be "germane" to the Center's purpose and the participation of individual members must not be needed. *NRDC v. EPA*, 542 F.3d at 1244. The Center clearly meets these requirements. The Center is a non-profit organization that represents its members' interests in the conservation of imperiled species, including marine species. Galvin Decl. ¶¶ 5-9. The Center has worked to protect imperiled Northwest species and their habitats, such as northern abalone, salmon, killer whales, and Pacific herring, and has worked extensively to protect ocean ecosystems in Oregon, Washington, and nationwide from various threats including ocean acidification. *Id*. ¶¶ 9, 10. The Center regularly informs its members, the public, and the media about ocean acidification and its threats to marine life, through a detailed website, newsletters, action alerts, and other avenues. *Id*. ¶ 16.

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visits the coasts of Oregon and Washington many times every year. Moritz Decl. ¶¶ 6, 7. While there she camps, tidepools, and beachcombs. *Id.* ¶¶ 8-9. She and her sons "can spend hours searching for and looking at shells, including oyster shells, mussel shells, and crab shells, both in the water and along the shoreline." *Id.* ¶ 9. Center member Katherine Easton has lived in Seattle all her life; spent her summers in the San Juan Islands as a child; and now owns a house on Puget Sound on Camano Island. Easton Decl. ¶¶ 4-6. Center member Jessica Antoine grew up at the mouth of Netarts Bay on the coast of Oregon and returns there regularly to visit family and to enjoy tidepooling and beachcombing with her children. Antoine Decl. ¶¶ 6, 7. In addition to enjoying activities such as beachcombing and tidepooling that directly involve observing and enjoying shellfish, these Center members also enjoy looking for other species affected by acidification, including whales, sea lions, seals, and sea birds. Antoine Decl. ¶ 9-11; Easton Decl. ¶ 10; Weitzer Decl. ¶ 7; Moritz Decl. ¶ 10. Center members also harvest and consume Pacific Northwest shellfish. Weitzer Decl. ¶ 7, Antoine Decl. ¶¶ 6-8, 13, 15. Center members' ties to coastal areas in Washington and Oregon run deep, and they have concrete plans to continue using these areas in the future. Antoine Decl. ¶ 7; Easton Decl. ¶¶ 6, 10; Weitzer Decl. ¶¶ 8, 10-12; Moritz Decl. ¶ 12.

Because they derive so much personal satisfaction and enrichment from spending time along the Pacific Northwest coasts, and because the fish, shellfish, marine mammals, and birds of those coasts are important to them, Center members are extremely concerned about ocean acidification and how it is harming and will continue to harm them. Antoine Decl. ¶¶ 16-17; Easton Decl. ¶¶ 11-13, 10; Weitzer Decl. ¶¶ 9-14; Moritz Decl. ¶¶ 13-17. For example, David Weitzer's enjoyment of shellfish harvesting is harmed by ocean acidification because there are now fewer oysters and clams available for him to harvest, making harvesting a lot more work. Weitzer Decl. ¶ 9. The quality of the oyster shells has also fallen. *Id*. Mr. Weitzer has also observed that the diversity of tidepools has declined, and fewer shells and sand dollars wash up on the beach. *Id*. ¶¶ 10, 11. This makes him sad, both because of how it affects him directly in his activities, and because of the spiritual fulfillment he derives from a healthy ecosystem. *Id*.

¶¶ 12, 13, 14. Mickey Moritz is so concerned about ocean acidification that she dedicates substantial time to studying and advocating for policies to address it. Moritz Decl. ¶¶ 13-17, 20.

Center members also participate in public processes surrounding marine issues, including ocean acidification. Antoine Decl. ¶ 19; Mortiz Decl. ¶¶ 14, 20, 21; Weitzer Decl. ¶ 17. For example, Mickey Moritz, in her personal capacity, is currently drafting a letter to Washington Governor Jay Inslee asking the state to regulate agricultural runoff for its contribution to ocean acidification. Moritz Decl. ¶¶ 14, 20. In participating in these public processes, Center members rely on scientific reports and information about ocean acidification provided to them by the Center. Galvin Decl. ¶ 16; Moritz Decl. ¶ 21.

The Center's members' injuries are traceable to EPA's approval of Oregon and Washington's impaired waters lists and would be remedied by a favorable decision. Antoine Decl. ¶ 18; Easton Decl. ¶ 14; Moritz Decl. ¶ 19; Weitzer Decl. ¶ 16. If EPA had disapproved Washington and Oregon's impaired waters lists for failing to include waters impaired by ocean acidification, EPA would have been required to identify those impaired waters. 33 U.S.C. § 1313(d). EPA and the states would have to establish and implement pollution limits, including total maximum daily loads (TMDLs), *id.*, which would reduce acidifying contributions to the marine waters that are so important to Center members, *see, e.g.*, Moritz Decl. ¶ 19.

Local sources of pollution have a large impact on pH in many of the coastal areas in Oregon and Washington, and implementing local pollution controls would reduce acidification, ameliorating the harm Center members are suffering. While the primary driver of ocean acidification is human-made carbon dioxide emissions, local sources of pollution directly exacerbate coastal ocean acidification in the Pacific Northwest. WA-000712 (Feely 2012); *see also* Answer ¶ 2 ("admitting that "ocean acidification can result when the ocean absorbs carbon dioxide emissions from the atmosphere, but . . . ocean acidification can also result from other contributing factors"). Agricultural runoff, polluted stormwater, soil erosion, and other human activities can significantly lower the pH of nearby waters, creating acidification "hot spots." WA-000731 (Kelly et al. 2011). In some coastal areas, local sources of air pollution can contribute as much as ten to fifty percent of the CO_2-derived acidification. WA-000712 (Feely

2012). Once a water body is listed under Section 303(d), programs under the Clean Water Act will reduce these local pollution inputs by mandating, for example, prevention of stormwater surges, coastal and riparian vegetation buffers, wetland restoration, and improved treatment of runoff. WA-000731 (Kelly et al. 2011); Moritz Decl. ¶¶ 14, 19. Additionally, placement of a water body on a 303(d) list informs officials, industry, and the public of the need for improved management, and it imposes stricter criteria for new and renewed NPDES permits. *See* 33 U.S.C. § 1342. Therefore, 303(d) listing triggers management that would improve water quality, and Center members' injuries would be redressed because improved water quality would allow them to enjoy improved tidepooling, shellfish harvesting, and beach combing.

The full 303(d) regulatory process would also result in the development and summary of potentially new and important scientific data and other information regarding ocean acidification, as well as the causes both from the atmosphere and localized inputs. Moreover, the processes of identifying impaired waters and of establishing TMDLs would allow for public input and participation. 40 C.F.R. § 130.7(d)(2). The relief the Center seeks would also redress the informational harm Center members suffer because absent such relief, they will not know which local waters are polluted, and will also be denied the opportunity to participate in the public process of listing acidification-impaired waters and establishing pollution controls. *See FEC v. Akins*, 524 U.S. 11 (1998) (finding an informational injury because plaintiffs were unable to obtain the information required by statute, and finding causation and redressability, despite the discretionary nature of the agency's decision-making); *see also Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572-73 (1992) (procedural standing may be shown if plaintiff demonstrates the procedures in question are designed to protect some threatened concrete interest).

STANDARD OF REVIEW

The Center moves for summary judgment. Summary judgment is appropriate when "there is no genuine dispute as to any material fact . . . and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a).

The Center's claims are reviewable under the Administrative Procedure Act (APA). An agency's decisions will be set aside if they are "'arbitrary, capricious, an abuse of discretion, or

otherwise not in accordance with law' or if the action failed to meet statutory, procedural, or constitutional requirements." *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 414 (1971); *see also* 5 U.S.C. § 706(2)(A)-(D). This inquiry, while narrow, must be searching and careful. *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 378 (1989).

An agency's action is arbitrary and capricious if:

> the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).

Although courts defer to the agency on matters within the agency's expertise, the deference accorded an agency's scientific or technical expertise is not unlimited. *Defenders of Wildlife v. Babbitt*, 958 F. Supp. 670, 679 (D.D.C. 1997). The presumption of agency expertise can be rebutted when its decisions, while relying on scientific expertise, are not reasoned. *Brower v. Evans*, 257 F.3d 1058, 1067 (9th Cir. 2001). An agency's scientific or technical decision may be deemed arbitrary if "the agency has completely failed to address some factor consideration of which was essential to making an informed decision," *id.* (citation omitted), or if an "agency conclusion that runs counter to that of other agencies or other individuals with specialized expertise in a particular technical area." *San Luis & Delta-Mendota Water Auth. v. Jewell*, 969 F. Supp. 2d 1211, 1214-15 (E.D. Cal. 2013) *(*citing *Am. Tunaboat Ass'n v. Baldrige*, 738 F.2d 1013, 1016-17 (9th Cir. 1984) (agency decision was not supported by substantial evidence because agency ignored data that was product of "many years' effort by trained research personnel")); *see also Nat'l Wildlife Fed'n v. NMFS*, 422 F.3d 782, 798 (9th Cir. 2005).

ARGUMENT

EPA's decision to approve Washington and Oregon's 303(d) lists was arbitrary and capricious because: (1) it disregarded an entire body of evidence showing that ocean acidification is currently harming marine life and violating water quality standards; and (2) the agency failed to evaluate all available data as required under the Clean Water Act.

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A. EPA Failed to Consider Record Evidence that Acidified Marine Waters in Washington and Oregon Violate the States' Water Quality Standards.

EPA knew that acidified waters in Oregon and Washington were killing marine animals when it incorrectly concluded that there were no water quality violations. EPA arbitrarily and capriciously approved Washington and Oregon's 303(d) lists. In doing so, EPA (1) irrationally disregarded evidence of shellfish die-offs; (2) failed to adequately justify ignoring pH data; and (3) overlooked evidence that waters are corrosive to shell-building animals and thus violate narrative standards. Accordingly, EPA's decision should be remanded.

1. Waters that kill shellfish violate specific water quality standards in Oregon and Washington.

Ocean acidification has killed billions of oysters in Washington and Oregon. WA-000712 (Blue Ribbon Panel at xi, 3). Nonetheless EPA determined that marine waters meet water quality standards that require waters to provide "extraordinary quality . . . oyster . . . rearing and spawning," support "aquatic life uses," and maintain "existing uses." WA-001419 *et seq.*; OR2-005108 *et seq*. The law and facts are contrary to EPA's decision.

As described below, the record is replete with evidence that seawater quality in certain marine waters—Netarts Bay, Puget Sound, and Willapa Bay among them—has impaired shellfish health. These harms demonstrate non-attainment of several relevant water quality standards, and EPA's approval of Oregon's or Washington's 303(d) lists therefore violates the Clean Water Act's requirements.

If a water body fails to meet even one water quality standard, EPA has a duty to list it as impaired. EPA "shall approve a list . . . only if it meets the requirements of § 130.7(b)," which mandates that each state identify waters failing to meet "any water quality standard," including numeric criteria, narrative criteria, water body uses, and antidegradation requirements. 40 C.F.R. § 130.7(b)(1)(iii), (b)(3), (d)(2).[2] EPA directs states to solicit data on ocean acidification and

[2] The list must also include threatened waters—waters anticipated to violate standards before the next listing cycle. 40 C.F.R. § 130.7(b)(5)(iv).

identify marine waters impaired by ocean acidification on their 303(d) lists. WA-000731 (EPA 2010 at 6).

EPA's approval of Oregon and Washington's lists violated this requirement because certain coastal waters fail water quality standards requiring protection of aquatic life, shellfish harvesting, wildlife habitat, and existing uses. EPA's conclusion that no waters are impaired by ocean acidification is arbitrary and capricious because the "explanation for its decision . . . runs counter to the evidence before the agency" and is implausible. *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43. There are two key reasons why EPA acted arbitrarily in disregarding shellfish die-off studies when making its decisions. First, EPA's assertion that the Center provided no information on natural, wild populations runs counter to the evidence. Second, EPA erred by excluding shellfish hatchery uses from water quality standards.

a. The record shows that acidified marine waters violate the states' water quality standards because the health of wild, natural populations of shellfish is impaired.

EPA used willful blindness to justify its decisions to approve Washington and Oregon's 303(d) lists in the face of substantial evidence of impairment—wild oyster reproduction collapse in Willapa Bay, reduced mussel populations, oyster mortality in several hatcheries, and studies documenting death and deformities of native mollusks. EPA's conclusion that there was no data or information to demonstrate impairment of wild, natural populations runs counter to the evidence before the agency. An agency decision that is without substantial basis in fact must not be given deference. *Sierra Club v. EPA*, 346 F.3d 955, 961 (9th Cir. 2003).

The record provides evidence of decreased shellfish abundance in several Washington locations. Concurrent with the hatchery problems described in more detail below, wild oyster populations in Willapa Bay, Washington, crashed, and since 2005 wild oysters have failed to reproduce in Willapa Bay. Answer ¶¶ 1, 48; WA-000712 (Blue Ribbon at 3); WA-000731 (SCCWRP 2010 at B-1 ("virtually no natural set in Willapa . . . for 6 years")). Researchers also documented declines in abundance and size of the California mussel, blue mussel, and goose barnacle in tidepools on the Olympic Coast in Washington. WA-000731 (Wootton 2008 at

18849) (noting that these species are also key habitat components). Even according to EPA, the Wootton study on wild populations showed that "declining pH reduces the performance of calcifying organisms." WA-000064.

Accordingly, Washington's water quality standards for aquatic life uses, wildlife habitat, and shellfish harvesting are impaired in these areas. WAC 173-201A-260, -310, -612. Even if the full cause of these shellfish declines are not known, under EPA guidance they must be listed as impaired. WA-001231 (EPA guidance that states that "the fact that the specific pollutant is not known does not provide basis for excluding the segment. . . . These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contribute to the impairment.").

In addition to observations of declining shellfish in the wild, the record shows that native shellfish suffer in seawater conditions that mimic existing conditions along the Washington and Oregon coasts. For example, seawater at levels of ocean acidification already occurring off the Pacific Northwest coast caused a forty percent increase in deformities and death of rare northern abalone (pinto abalone), a candidate for federal endangered status. WA-000731 (Crim 2011 at 272). Another study of Olympia oysters, a foundation species along the coast, showed that ocean acidification stunted their growth. WA-000731 (Hettinger 2012 at 30). California mussels also grew thinner and weaker shells that are more vulnerable to mortality, predation, and desiccation. WA-000731 (Gaylord 2011 at 2586). These laboratory studies indicate adverse impacts to native shellfish at levels of ocean acidification that are already common off the coasts of Washington and Oregon and help explain declining shellfish abundance in the Pacific Northwest.

EPA improperly disregarded these laboratory studies of native oysters, mussels, and abalone based on an invalid assumption that the studies were based on extreme future CO_2 scenarios. WA-000056 (EPA stating that "chemical parameters [were] drastically manipulated"); WA-000060. But EPA admits, and the record shows, that waters along the Pacific Coast already experience CO_2 levels (up to 850-950 µatm) well within the range of CO_2 values in those studies shown to harm shellfish (540-800 ppm). Answer at ¶ 43; WA-000712 (Feely 2012 at 10). EPA therefore cannot rationally defend its rejection of these relevant studies.

The Ninth Circuit has rejected similar agency decisions that contravene evidence in the record. For example, in *Sierra Club*, the Ninth Circuit ordered EPA to designate Imperial Valley as a non-attainment zone because the record showed that it was not meeting air quality standards. *Sierra Club v. EPA*, 346 F.3d at 963. The court rejected EPA's claim exceedances of air quality standards for particulate matter were caused by pollution from Mexico, because EPA's explanation ran counter to the evidence in the record. *Id.* at 962.

As in *Sierra Club*, here the record shows non-attainment of water quality standards, and EPA's rationale for not identifying those waters as impaired is untenable. EPA decided that no data was presented demonstrating impaired health of wild, natural populations in Washington or Oregon. WA-000017; OR2-000290. The record, however, showed harm to wild, natural populations of shellfish, rendering EPA's decision invalid. Moreover, as explained below, EPA arbitrarily added the qualifier "wild, natural," into the standards, allowing it to disregard the well-documented crash of oyster hatcheries in the Pacific Northwest.

b. Oregon's water quality standards do not exclude shellfish in hatcheries.

In approving Oregon's list of impaired waters, EPA arbitrarily rejected evidence that Oregon marine waters had killed oysters in hatcheries. The parties agree that Oregon and Washington shellfish hatcheries experienced a multi-year oyster die-off because the seawater in which they raise larvae was affected by ocean acidification. Answer ¶¶ 61, 69. Seawater that kills oysters in hatcheries does not attain the applicable water quality standards. EPA should have disapproved Oregon and Washington's 303(d) lists based on this evidence of impairment. Instead, the agency irrationally disregarded the oyster crashes because they did not involve "wild, natural populations."

Specifically, Whiskey Creek Hatchery on Netarts Bay, Oregon, and Taylor Shellfish Hatchery on Dabob Bay, Washington, experienced persistent problems rearing oysters beginning around 2005 and 2006, respectively. Answer ¶¶ 61, 69; OR2-001153; OR2-000942-43; OR2-004447. Researchers began investigating low-pH waters as the cause of the oyster collapse, OR2-007615 (Barton 2009); and in 2012 scientists definitively established that the oyster larvae mortalities were caused by ocean acidification. OR2-001521-33 (Barton 2012); OR2-004550-52.

Researchers observed oysters at Whiskey Creek Hatchery in Oregon and determined that water from Netarts Bay used to raise shellfish impaired the growth and production of oyster larvae. OR2-001521 (Barton 2012); OR2-000943 (Feely 2012). "Seawater for larval rearing is drawn directly from the bay through a submerged intake pipe" to raise oysters from broodstock "from sustaining native populations in Willapa Bay, Washington." OR2-001523 (Barton 2012).Whiskey Creek lost almost all of its oyster larvae production, and scientists concluded that acidified seawater was killing the oysters. *Id*.; OR2-001153 (Blue Ribbon Panel).

Despite powerful evidence that seawater from Netarts Bay is killing oysters at Whiskey Creek Hatchery, EPA disregarded this evidence because it is from a hatchery. OR2-000289 ("No data or information was presented demonstrating impaired health of wild, natural populations in Oregon waters, therefore an impairment determination for the aquatic life designated uses cannot be made at this time.").

In making this determination, EPA reads the qualification "wild, natural" into water quality standards where it does not exist, as the water quality standards do not contain an artificial distinction for hatcheries. EPA is in error as a matter of law. Oregon's water quality standards require the protection of aquatic life uses, prohibit conditions deleterious to aquatic life, and prohibit dissolved CO_2 in quantities deleterious to aquatic life and reasonable uses; its antidegradation policy also requires the maintenance and protection of existing water quality, and supports propagation of shellfish. OAR 340-041-0004(6), -0007, -0031; -0220, -0230, -0300, Tables 220A, 230A & 300A; OR1-000533. These protective standards contain no qualifiers limiting them to only "wild, natural populations," and they prohibit the degradation of water quality that could impair existing uses.[3] The oyster deaths demonstrate water quality violations of the aquatic life uses and narrative standards because the oysters are harmed by acidified water directly from the ocean. Furthermore, shellfish-rearing in waters from Netarts Bay is an existing use protected by the antidegradation standard. OAR 340-041-0004(6).

[3] *Existing uses* are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards. 40 C.F.R. § 131.3(e).

It is improper for EPA to interpret Oregon's standards to omit water quality protections for hatchery shellfish and uses. Because EPA's interpretation allows seawater quality to degrade beyond the point that it kills shellfish, it offends Congress's stated goals of the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Water quality standards must be read to avoid an outcome that is inconsistent with the purpose of the statute. *Id.* § 1313(c)(2) ("[S]tandards *shall* . . . enhance the quality of water and serve the purposes of this [Act] . . . taking into consideration their use and value for . . . propagation of fish and wildlife, recreational . . . and other purposes.") (emphasis added)); *see also K Mart Corp. v. Cartier*, 486 U.S. 281, 291-92 (1988) (interpretations of laws and regulations should be read to be consistent with the overall purpose of the statute). Moreover, EPA and states may not use listing methods to constrain the protections of water quality standards, thus allowing weaker water quality protections without following the required procedures. *See, e.g., Fla. Pub. Interest Research Group Citizen Lobby, Inc. v. EPA*, 386 F.3d 1070 (11th Cir. 2004) (holding that Florida violated the Clean Water Act when its Impaired Waters Rule, which provided impaired listing methodologies, effectively changed water quality standards); 33 U.S.C. § 1313(c); *see also* 40 C.F.R. § 131.10(j)(2) (before removing water quality protections for an existing use the state must develop a use attainability assessment).

Furthermore, EPA guidance mandates that in making impairment determinations states must use information about observed effects and other knowledge and data in areas with limited site-specific monitoring. OR2-004902; OR2-002104. In the absence of in-situ monitoring of Netarts Bay, the hatchery study provided the best available science, and EPA should have used it for making an attainment determination. If anything, the hatchery gives oysters an advantage over "larval oysters in the wild by growing them under otherwise ideal conditions," OR2-001529 (Barton 2012), meaning that problems in the hatchery are a strong indication of problems in the same water outside the hatchery. One hatchery owner corroborated changes in natural shellfish populations in Netarts Bay, stating that she "is even more worried about wild creatures that will have to fend for themselves in more acidic seas. In normal years, they have to clear out barnacles and mussels from their intake pipes every three months. They haven't seen any of that growth in

a while." OR2-003099. In dismissing evidence of impaired waters by reading in the requirement of "wild, natural" where it does not exist in Oregon water quality standards, EPA has acted arbitrarily and capriciously and offered an explanation that runs counter to the evidence before it. *See Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43.

2. Washington waters violate the state's water quality standards for pH.

In addition to ignoring impairment to shellfish, EPA acted arbitrarily when it disregarded evidence that Washington waters do not attain pH standards. Monitoring data shows a clear violation of Washington's pH water quality standard in the Strait of Juan de Fuca. WA-000899-900. An evaluation of 24,519 measurements of seawater showed a decline greater than 0.36 pH units between 2000 and 2008. WA-000731 (Wootton 2008); WA-000804-11. Washington standards require that "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*." WAC 173-201A-210(1)(f) (emphasis added). Washington declined to examine the pH data, and EPA dismissed the data as insufficient. EPA's conclusion runs contrary to the evidence before it and should not be given deference because it departs from the agency's own guidance. *Natural Res. Def. Council v. EPA*, 526 F.3d 591, 607-08 (9th Cir. 2008) (holding that inconsistent positions are given less deference, and EPA's inconsistent position on the need for permits for sediment pollution was arbitrary and capricious).

Between 2000 and 2008, pH in the Strait of Juan de Fuca declined in excess of Washington's water quality standards, and it continued to decline between 2008 and 2010. WA-000731 (Wootton at 18849); WA-000825-26. According to the scientists studying this pH decline, their "model includes all variables that are currently suggested to have a large impact on ocean pH, . . . [and] only atmospheric CO_2 exhibits a consistent change that can explain the persistent decline in pH." Wootton at 18850. Contrary to the scientists' conclusion, EPA asserts that "it is unclear whether the pH changes observed over time in the Wootton et al. 2008 study are due to natural or anthropogenic drivers." WA-000015. EPA therefore disregarded the best evidence before it. Moreover, EPA violated its own ocean acidification guidance, which directs it to list impaired waters regardless of the source of impairment:

> EPA reminds States that if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from being listed as impaired. Therefore, if marine pH exceeds the State's criterion, but the source-stressor is unknown (e.g., carbon deposition, nutrient enrichment, industrial discharge, natural background), then EPA expects the segment to be listed.

WA-000731 (EPA 2010 at 9). *See also* WA-001306 (an assessment unit must be placed on 303(d) list if cause of the impairment is unknown).

The best available science—the 2008 study by Wootton—shows that humans have caused the pH to change by more than 0.2 units in the Strait of Juan de Fuca, qualifying this water body as impaired.[4] The only evidence EPA has offered in rebuttal is a misreading of another study. According to EPA, a study by Brown et al. discredits the Wootton study by showing that there may have been natural (i.e., not "human-caused") factors that contributed to the pH decline. WA-000015; WA-001338. But what the EPA labels "natural causes" were actually attributed to human-caused climate change in the Brown study itself. The Brown study concluded that in addition to atmospheric CO_2, "[t]he analyses presented in this report suggest that *climate change* might influence nearshore pH levels through alterations in river discharge." WA-001359 (emphasis added). Although the Brown study concluded that atmospheric CO_2 might not be the only driver of the pH change, the other changes it observed were also human-caused. Regardless of whether the pH decline is primarily attributable to climate change-influenced river discharges as Brown suggests, or ocean acidification as Wootton concludes, EPA must list the waters because they violate Washington's marine pH standard. Neither the state nor EPA can demonstrate that "no pollutants cause or contribute to the impairment," and thus the "segments must be listed." WA-001231 (EPA guidance to states on listing waters impaired by ocean acidification).

To the extent that EPA declined to include this impairment because the intertidal area on Tatoosh Island where sampling occurred is tribal land, this does not excuse EPA's omission of

[4] Furthermore, anthropogenic CO_2 caused 25-49% of the acidification in Puget Sound WA-000731 (Feely 2010) and corrosive waters off the coast of Washington would be 50 meters deeper and would not reach the surface without anthropogenic CO_2. *Id.* (Feely 2008).

state waters that are adjacent to the Makah reservation.[5] While tribal land extends to the low-water mark, WA-001878, the impaired waters do not remain within political boundaries. Indeed, similar chemical conditions extend to the wider Strait of Juan de Fuca:

> pH levels around Tatoosh are not unusual compared to pH measurements made by us and others elsewhere in the wider Strait of Juan de Fuca. . . . This includes boat transects we have run up to 3.4 km offshore spanning 8 km^2 area and water depths to 210 m, and spot samples made at several stations in the western Strait.

WA-000826.

Moreover, with respect to making attainment decisions on ocean acidification, EPA supports a "presumption that the pollutant source (particularly when from atmospheric deposition, such as mercury) is uniformly affecting segments in large geographic areas." WA-000731 (EPA 2010 at 7). Thus, even if the sampling location is unique to the Strait of Juan de Fuca, at minimum that water segment must be listed.

For these reasons, EPA's decision to exclude the Strait of Juan de Fuca from the impaired waters list despite clear evidence of pH decline and aquatic life impairment in excess of Washington standards was arbitrary and capricious. *See NRDC v. EPA*, 526 F.3d at 607-08.

3. EPA failed to consider whether corrosive seawater conditions violate any water quality standards.

EPA had before it evidence that waters off the coast of Washington and Oregon have become corrosive and harmful to shell-building animals. WA-000731 (Feely 2008 at 1491). But the agency failed to consider this evidence in determining whether state water bodies were impaired. EPA therefore ignored an important aspect of the problem, rendering its decision

[5] Washington has listed other waters that are on tribal lands (*see, e.g.*, WA-000097, listings 48917 and 48295 for Sooes River on the Makah Reservation), but only declined the data when it had to do with ocean acidification. WA-000097. Moreover, the Makah Tribe, on whose land the monitoring occurred, potentially wants its waters designated as impaired for ocean acidification. WA-002138 (emailing EPA: "[The Makah] Chairman has authorized me to express our interest in determining whether or not we can include Ocean Acidification on the 303(d) list. . . . We believe that our ability to consult [government to government] would be enhanced by being able to cite Ocean Acidification.").

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arbitrary and capricious. *See Mont. Wilderness Ass'n v. McAllister*, 666 F.3d 549, 561 (9th Cir. 2011).

Along with changes in acidity, carbon dioxide in seawater strips away minerals, such as aragonite, that animals use to build their shells and skeletons. Many animals, including most larval bivalves, build their shells from aragonite. WA-000712 (Blue Ribbon Panel at 11). Therefore, when seawater is undersaturated with respect to aragonite, it becomes corrosive to shell-building animals and their shells start to dissolve. *Id.* (Blue Ribbon Panel at 10). Aragonite undersaturation has been found to dissolve the shells of plankton and reduce the growth and survival of oysters, clams, mussels, urchins. *See, e.g.*,WA-000731 (Fabry 2009; NRC 2010 at 34-36; Feely 2004; Abbasi 2011; Doney 2009; Talmage 2009; Branch 2012); Answer ¶ 70. An evaluation of hundreds of studies on biological impacts reported that ocean acidification reduced the growth, survival, and reproduction across a broad range of organisms. WA-000731 (Kroeker 2010). Indeed, "today's upwelled water is more corrosive to calcifying organisms . . . than would be seen from natural conditions alone." WA-000712 (Blue Ribbon Panel at 11).

The evidence shows that corrosive waters have already arrived in Puget Sound and along the coasts of Washington and Oregon. WA-000800; Answer ¶¶ 60, 70. A survey of the Pacific Coast found corrosive waters—undersaturated with respect to aragonite—along the entire coast from Vancouver Island to Baja Mexico. WA-000731 (Feely 2008 at 1491). Persistent undersaturated waters have been documented off the coast of Oregon. OR2-002882 (Juranek 2009). Many parts of Puget Sound are also corrosive throughout the year, and in 2008 through 2011, data showed that during certain parts of the year "the entire water column from the Strait of Juan de Fuca to the Great Bend was undersaturated with respect to aragonite and corrosive." WA-000712 (Feely 2012 at 9-11, 29, 39), (Moore at 36-37); WA-00731 (Feely 2010 at 444). In the Pacific Northwest, "aragonite-corrosive conditions are rapidly expanding into shallower, more biologically sensitive areas at a rate of about five feet per year." WA-000712 (Blue Ribbon Panel at 11). Finally, modeling of corrosive waters from 1750 to 2050 shows a dramatic

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expansion of aragonite undersaturation. WA-000731 (Gruber 2012 at 1; Hauri 2009 at 66); WA-000735-36.[6]

Since waters are undersaturated with aragonite and therefore harmful to animals that build shells from aragonite, these waters are impaired and must be listed. Corrosive waters in Oregon do not meet aquatic life or wildlife uses, OAR 340-041-0220, -0230, -0300, Tables 220A, 230A & 300A, and they violate the prohibitions on deleterious conditions and quantities of dissolved carbon dioxide, OAR 340-041-0007, -0031. Corrosive waters also violate Washington standards that protect oyster rearing, shellfish harvesting, and wildlife habitat uses. WAC 173-201A-260, -310, -612. Further, corrosive waters contain "deleterious materials concentrations" above those "which have the potential . . . to adversely affect characteristic water uses [or] cause acute or chronic conditions to the most sensitive biota dependent upon those waters." WAC 173-201A-260(2)(a). The growing severity of corrosive waters also violates the antidegradation policies of those states. WAC 173-201A-310; OAR 340-041-0004(6).

Although there are no specific numeric standards for aragonite undersaturation under Washington and Oregon's water quality standards, EPA is not excused from using this information to evaluate whether waters impair uses and "narrative criteria." The Supreme Court has rejected such a narrow approach to water quality standards. In *PUD No.1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 715-16 (1994), the Court affirmed that the Clean Water Act requires not only that numeric criteria be met, but also that open-ended, broad, narrative water quality standards and antidegradation policies be met. The opposite conclusion "leads to an unreasonable interpretation of the Act" because "if a particular criterion, such as turbidity, were missing from the list . . . the State would nonetheless be forced to allow activities inconsistent with the existing or designated uses." *Id.* at 717.

The record contains no evidence that EPA considered aragonite undersaturation in approving the states' lists, indicating that the agency ignored an important aspect of the problem

[6] EPA apparently erroneously believed waters off Washington were not part of the California Current, WA-000035, -000037, and thus improperly excluded these studies.

and should not be granted deference. WA-000011 and OR2-000286. As in *Anacosta Riverkeeper, Inc. v. Jackson*, 798 F. Supp. 2d 210, 239 (D.D.C. 2011), "[i]t is difficult for the court to comprehend how EPA could have . . . exercised its judgment with respect to a narrative criterion that it *never mentions.*" (Emphasis in original). Indeed, when faced with aragonite saturation data for Oregon waters, OR2-002882, EPA concluded that the study contained no data suitable for analysis under Oregon water quality standards. WA-00060; OR2-000310. EPA similarly found "no indication of non-attainment" regarding any standard for surveys showing corrosive waters in Puget Sound and along the West Coast. WA-000056-57, WA-000731 (Feely 2008). Without explanation, EPA essentially ignored all evidence of aragonite undersaturation. EPA thus arbitrarily ignored an important aspect of the problem and offered an explanation for its decision that runs counter to the evidence before it.

* * *

The totality of the 100+ studies, models, observations, surveys, and letters before the agency shows a scientific consensus that ocean acidification is already a problem affecting waters and the growth and survival of shellfish along the Washington and Oregon coasts. WA-000731. An examination of the whole record shows that EPA's head-in-the-sand approach to the severe problem of ocean acidification violates the Clean Water Act and must be rejected as arbitrary and capricious. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(b)(1)(iii), (b)(3), (d)(2). *See Universal Camera Corp. v. NLRB*, 340 U.S. 474, 488 (1951) (entirety of the record must be considered, including evidence that detracts from agency's decision); *Citizens to Preserve Overton Park*, 401 U.S. at 419 (judicial review of agency action must be on the whole record).

B. EPA Violated the Clean Water Act and the APA When it Failed to Consider All Existing and Readily Available Water Quality Data in Approving the States' 303(d) Lists.

In evaluating the states' impaired waters lists, EPA had access to, and knowledge of, databases with water quality monitoring data relevant to ocean acidification, yet EPA failed to evaluate that data against Oregon and Washington's water quality standards. EPA may not ignore data before it, and this court must strike down EPA's approval of these lists as arbitrary

and capricious. *Brower v. Evans*, 257 F.3d at 1067 (agency may not "completely fail[] to address some factor consideration of which was essential to making an informed decision").

The Clean Water Act requires states to consider "all existing and readily available water quality-related data and information" when compiling their impaired waters lists. 40 C.F.R. § 130.7(b)(5). This directive includes, but is not limited to, actively soliciting government agencies and academic institutions for research they may be conducting. *Id.* § 130.7(b)(5)(iii). When a state fails to evaluate all available data, EPA must disapprove the state's list for failing to comply with the directives of the Clean Water Act. 40 C.F.R. § 130.7(d); *See Alaska Ctr. for the Env't*, 762 F. Supp. at 1429 ("Section 303(d) expressly requires the EPA to step into the states' shoes if their TMDL submissions or lists of water quality limited segments are inadequate.").

Courts have confirmed that EPA must use all available data when considering a states' Section 303(d) submission. *See, e.g., Sierra Club v. Hankinson*, 939 F. Supp. 865, 870 (N.D. Ga. 1996) ("The Court is further concerned about Georgia's apparent failure to use 'all existing readily available water quality-related data and information' . . . such as . . . available EPA databases."). Likewise, in other contexts, courts have struck down an agency determination when that agency failed to use data that was required by statute and regulation. *See, e.g., Ctr. for Biological Diversity v. BLM*, 698 F.3d 1101, 1124 (9th Cir. 2012) (holding that the BLM failed to look at data relevant to a finding of jeopardy under the Endangered Species Act); *Sierra Club v. EPA*, 671 F.3d 955, 968 (9th Cir. 2012) (finding that EPA's approval of a State Implementation Plan under the Clean Air Act was arbitrary and capricious for failing to use the most recent available data); *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 46 (finding the highway safety agency acted in an arbitrary and capricious manner when it "apparently gave no consideration" to requiring airbags when modifying a passive restraint standard).

Despite this clear directive, EPA failed to analyze readily available data and information on ocean acidification and pH. Specifically, (1) EPA neglected available pH data in Washington that it obtained and evaluated for Oregon; and (2) EPA failed to evaluate relevant ocean acidification data that it knew about for Oregon and Washington.

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1. EPA analyzed STORET, USGS, and state databases for Oregon but not Washington.

EPA acted inconsistently when it disapproved Oregon's list for failing to evaluate several databases with relevant water quality information, yet later approved Washington's list without requiring a similar analysis. EPA had the capability to examine these databases, as evidenced by its actions with Oregon; its failure to do so for Washington is internally inconsistent with its prior action and is arbitrary and capricious. *See, e.g.*, *Defenders of Wildlife v. EPA*, 420 F.3d 946, 959 (9th Cir. 2005) ("[I]nternally contradictory agency reasoning renders resulting action 'arbitrary and capricious;' such actions are not 'founded on a reasoned evaluation of the relevant factors.'") (citation omitted); *General Chemical Corp. v. United States*, 817 F.2d 844, 857 (D.C. Cir. 1987) (finding agency's analysis arbitrary and capricious because it was "internally inconsistent and inadequately explained").

EPA initially disapproved of Oregon's impaired waters list because Oregon "failed to consider all existing and readily available water quality-related data and information" as required by the Clean Water Act. OR1-00007. EPA found that Oregon did not consider data and information on a number of pollutants and improperly omitted in its analysis several important databases with relevant information. OR1-000008-9. Specifically, Oregon did not consider information from the state's Laboratory Analytical and Storage Retrieval (LASAR) database for a number of pollutants (including pH), requiring EPA to review that data and determine that "additional water quality limited segments that meet the federal listing requirements under 40 C.F.R. 130.7 were omitted from Oregon's list." OR1-000008. Oregon also failed to evaluate the data available via EPA's STORET (Storage and Retrieval) data warehouse and from the U.S. Geological Survey (USGS) water data repository. OR-000009. As with the LASAR data, EPA undertook an independent evaluation of these databases. *Id.* EPA partially disapproved of Oregon's list, performed its own analysis of the data, and added almost a thousand impaired

waters to the state's final Section 303(d) list. OR2-000255. These additions included several pH impaired waters, including a couple of marine water bodies. OR2-000408.[7]

In contrast, Washington's record is devoid of similar pH data from state, EPA, and USGS databases. There are no spreadsheets analyzing such data in EPA's record for Washington in contrast to Oregon. OR2-000408. When Washington submitted its final 303(d) list to EPA, it gave no indication that it considered any of the publically data available via USGS or EPA's STORET or Washington's own water quality database. *See* WA-000153. These databases contain pH data that would inform EPA's consideration of Washington's marine pH standard, which requires that for waters of 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." WAC 173-201A-210(1)(f). EPA's STORET database contains pH data in Washington including from coastal monitoring. The Center even suggested EPA evaluate information from Washington's own water quality data, including: (1) Marine waters data (including data that in some locations extends back more than twenty years with parameters such as pH temperature and salinity); (2) NPDES permitting data; and (3) data from a study of dissolved oxygen for Puget Sound. WA-000813. Despite the availability of these relevant sources, Washington failed to assess information contained in its own databases, the STORET, and USGS databases in order to evaluate potential violations of water quality standards.[8] EPA subsequently approved of Washington's list without considering these readily available sources with respect to Washington's marine pH water quality standard. WA-000011. Nowhere in the decision documents does it indicate that EPA examined these datasets, WA-000011, nor does the agency have a valid explanation for failing to evaluate such pH information.

[7] The pH impaired marine waters were listed for exceedences above the pH standard rather than below, thus these listings were not relevant to ocean acidification.

[8] In contrast, for past listing cycles, Washington has listed freshwaters for pH impairments based on EPA's STORET and USGS data. WA-000097 (*see, e.g.*, listing 5824 for Soleduck River (listing based on "data from STORET database" despite it being "unclear whether the high pH readings are the result of anthropogenic sources or due to natural geothermal activity").

2. EPA failed to consider other databases with relevant information.

EPA also failed to examine other databases with monitoring data on ocean acidification in Washington and Oregon, in violation of its duties under the Clean Water Act. EPA must concede that it was aware of such data.

In 2010, EPA recommended that states evaluate data from various sources for assessments for marine pH and ocean acidification that EPA itself did not obtain and evaluate for Washington and Oregon's lists. WA-000731 (EPA 2010 at 4). Specifically, EPA recommended that states get coastal monitoring information from NOAA's National Estuarine Research Reserve System and National Data Center. *Id.* (EPA 2010 at 7). EPA further recommended that states explore sources such as NOAA's Pacific Marine Environmental Laboratory and Integrated Ocean Observing System that collect data from surveys and buoys on CO_2 in seawater among other important ocean acidification parameters. *Id.* (EPA 2010 at 8-9). The Center also urged EPA to evaluate such data. WA 000745; *see also* WA 000813.

As demonstrated by EPA's recommendation, these data sources provide some of the highest quality ocean acidification monitoring in existence. However, at no point did Washington, Oregon, or EPA examine these datasets. In documents assessing the relevance of scientific articles provided by the Center, Washington fails to mention databases pointed out in Center comments or its own 2010 memo. WA-000051; WA-000087. In the final decision document for Washington, EPA makes no mention of such data, and instead agreed with Washington that "all readily available data meeting the requirements of this policy were analyzed." WA-000017. Oregon stated that there was "no existing and readily available data or information" that showed violations of water quality standards. OR2-000288. However, the record does not reflect an analysis of why Washington, Oregon, or EPA avoided this information. An agency may not simply refuse to examine a potentially relevant factor in makings its final decision. Where, as here, EPA did not evaluate readily available information, its decision must be remanded. *Sierra Club v. Leavitt*, 488 F.3d 904, 912 (11th Cir. 2007) (reversing Florida's decision not to evaluate data over seven years old for the 303(d) list). Even if EPA had an excuse for not using certain data, it was still required to consider it. *Id.*

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In addition, EPA knew of data from individual scientists that would be relevant, yet failed to obtain that data or use it. For example, the study by Feely et al. (2008) indicated that anthropogenic CO_2 had caused corrosive waters to extend over the continental shelf into nearshore waters off Washington and Oregon. WA-000731 (Feely 2008 at 1490). While EPA told Washington that it should "[c]onsider seeking out this data in order to counter it head on," WA-002014; neither Washington nor EPA evaluated the data. Feely's data is nowhere in the record, nor is an explanation for its absence. EPA should not have approved Washington or Oregon's 303(d) list because the states failed to use all "existing and readily available water quality-related data." 40 C.F.R. § 130.7(b)(5).

EPA's failure to evaluate all available and relevant data on ocean acidification flies in the face of the Clean Water Act and its implementing regulations. 40 C.F.R. § 130.7(b)(5) (stating that states must consider "all existing and readily available water quality-related data and information" when compiling its impaired waters lists). Their failure to provide a rationale for not performing an analysis of this data is arbitrary, capricious, and in violation of the APA and Clean Water Act. *See* 5 U.S.C. § 702; 40 C.F.R. § 130.7(b)(5).

REMEDY

Because EPA acted in an arbitrary and capricious manner when approving Oregon and Washington's lists of impaired waters, this court should remand to the agency for a new determination that complies with the requirements of the Clean Water Act.

The normal remedy under the APA for an unlawful agency action, such as EPA's approval of Washington and Oregon's impaired waters lists, is to set aside that action. *See* 5 U.S.C. § 706(2); *Idaho Farm Bureau Fed'n v. Babbitt*, 58 F.3d 1392, 1405 (9th Cir. 1995) (noting that "[o]rdinarily when a regulation is not promulgated in compliance with the APA, the regulation is invalid"). However, vacatur is an inappropriate remedy where the rule in question preserves the environment. *See, e.g., Nat. Res. Defense Council v. U.S. Dept. of Interior*, 275 F. Supp. 2d 1136, 1143-44 (C.D. Fla. 2002) ("The Ninth Circuit [has] expressed special concern for the potentially one-sided and irreversible consequences of environmental damage prompted by vacating defective rules during remand."). In this case, vacatur of an entire Section 303(d) list

could have potential impacts regarding the state's development of TMDLs and issuance of discharge permits under the Clean Water Act, and this court should leave in place the current 303(d) lists while the agency reconsiders its decisions with regards to ocean acidification.

This court has broad latitude to fashion equitable relief when necessary to remedy an established wrong. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 310 (1982); *Alaska Ctr. for the Env't v. Browner*, 20 F.3d 981, 986 (9th Cir. 1994) (finding that "[i]n tailoring the relief granted, the district court correctly recognized that in order to bring about any progress toward achieving the congressional objectives of the Clean Water Act, the EPA would have to be directed to take specific steps"). The Center therefore respectfully requests that this court, upon remand, direct EPA to disapprove Oregon and Washington's impaired waters lists and identify waters impaired by ocean acidification within 30 days of the disapproval, as required by Section 303(d) of the Clean Water Act.

CONCLUSION

The devastating shellfish die-off in the Pacific Northwest shocked and alarmed everyone about the real world danger of ocean acidification. While keenly aware that ocean acidification has damaged water quality, EPA has dodged its duty to address the problem with the Clean Water Act. EPA's assertion that the data was insufficient to identify impaired waters runs counter to the substantial evidence in the record. Studies clearly link ocean acidification in Washington and Oregon to field observations of wild shellfish vanishing, massive mortality at shellfish hatcheries, long-term sampling of waters showing a drastic trend of pH decline, coastal surveys documenting widespread corrosive waters, and lab studies reporting that present levels of ocean acidification cause death and deformity of native shellfish. EPA erred when it discounted this powerful evidence in a move that was inconsistent with its own guidance. EPA further failed to evaluate all readily available water quality information on ocean acidification in violation of its duties.

For the foregoing reasons, this Court must remand EPA's approval of Oregon and Washington's Section 303(d) impaired waters lists for a new determination listing waters impaired by ocean acidification consistent with the requirements of the Clean Water Act.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on June 20, 2014, I electronically filed Plaintiff Center for Biological Diversity's Motion for Summary Judgment and attached declarations with the Clerk of the Court for the United States District Court – Western District of Washington by using the CM/ECF system. Participants in this case 2:13-cv-01866-JLR who are registered CM/ECF users will be served by the CM/ECF system.

/s/ Emily Jeffers

Emily Jeffers

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