Nos. 11-338, 11-347

In The
Supreme Court of the United States

DOUG DECKER, in his official
capacity as Oregon State Forester, et al.,

Petitioners,

v.

NORTHWEST ENVIRONMENTAL
DEFENSE CENTER, et al.,

Respondents.

GEORGIA-PACIFIC WEST, INC., et al.,

Petitioners,

v.

NORTHWEST ENVIRONMENTAL
DEFENSE CENTER, et al.,

Respondents.

**On Writs Of Certiorari To The United States
Court Of Appeals For The Ninth Circuit**

***AMICUS CURIAE* BRIEF OF THE PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS, INSTITUTE FOR FISHERIES RESOURCES, HUMBOLDT FISHERMEN'S MARKETING ASSOCIATION, AND SANTA CRUZ COMMERCIAL FISHERMEN'S ASSOCIATION IN SUPPORT OF THE RESPONDENTS**

ERIC R. GLITZENSTEIN*
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Ave., N.W., Suite 700
Washington, DC 20009-1063
(202) 588-5206
eglitzenstein@meyerglitz.com

**Counsel of Record for Amici Curiae*

GLEN H. SPAIN,
General Counsel
PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS (PCFFA), INSTITUTE FOR FISHERIES RESOURCES
PO Box 11170
Eugene, OR 97440-3370
(541) 689-2000
fish1ifr@aol.com

COCKLE LAW BRIEF PRINTING CO. (800) 225-6964
OR CALL COLLECT (402) 342-2831

TABLE OF CONTENTS

TABLE OF CONTENTS – Continued

TABLE OF AUTHORITIES

Page

FEDERAL STATUTES

LEGISLATIVE HISTORY

FEDERAL REGISTER NOTICES

FEDERAL REPORTS

TABLE OF AUTHORITIES – Continued

TABLE OF AUTHORITIES – Continued

TABLE OF AUTHORITIES – Continued

Page

Page

SCIENTIFIC STUDIES OR REPORTS

TABLE OF AUTHORITIES – Continued

INTERESTS OF *AMICI CURIAE*[1]

Amicus Pacific Coast Federation of Fishermen's Associations (PCFFA) is a U.S. west coast-based commercial fishing industry trade association representing the interests and fishing heritage of approximately 1,200 commercial fishing families, many of whom depend on healthy salmon runs for all or a portion of their livelihoods. *Amici* Humboldt Fishermen's Marketing Association and Santa Cruz Commercial Fishermen's Association are also west coast commercial fishing industry trade associations whose members are economically dependent on ocean commercial salmon harvests for all or part of their livelihoods. *Amicus* Institute for Fisheries Resources is the marine resource protection and conservation affiliate of PCFFA, working to restore valuable west coast salmon fisheries and the aquatic habitats they rely upon. *Amici*'s economic interests are directly affected when excessive sediments from industrial logging roads are allowed to pollute salmon-bearing rivers, destroying key salmon habitat and jeopardizing downriver fishing industry jobs and communities.

---

[1] Pursuant to S.Ct.R. 37.3(a) and 37.6, the undersigned represent that (1) all parties consented to the filing of this brief, (2) no counsel for any party authored this brief in whole or in part, and (3) no person or entity other than the above-named *amici curiae* and their counsel made a monetary contribution to the preparation or submission of this brief.

SUMMARY OF ARGUMENT

One of the principal purposes of the Clean Water Act, 33 U.S.C. §§ 1251-1367 ("CWA") is to ensure that those industries that derive economic benefits from activities that degrade the nation's waters must bear the costs associated with those activities, and cannot, in effect, simply shift those costs to downstream industries and other economic interests dependent on clean water and healthy, functioning ecosystems. The ruling below effectuates that purpose by providing that those who benefit from industrial logging road construction and the use of culverts, ditches, and similar methods for draining polluted stormwater into streams, rivers, lakes and other water ways must mitigate those impacts through compliance with the National Pollutant Discharge Elimination System ("NPDES").

In the absence of such compliance, Respondents and other logging companies will, in contravention of the CWA scheme crafted by Congress, continue to shift the costs of their polluting activities to salmon fisheries and other downstream industries that are in no way responsible for the pollution and derive no benefit from it, but which must nonetheless bear the economic brunt of the ecological harms associated with such pollution.

Salmon populations throughout the Pacific Northwest and, in turn, the fishermen who depend on those populations for their livelihoods, are gravely affected by environmental contaminants that disrupt and impair the complex life cycles of myriad salmonid species. The severe sedimentation and related turbidity associated with channeled culvert discharges from industrial logging roads are major contributors to such impacts in water ways throughout the Pacific Northwest. Accordingly, the ruling below, which merely requires industrial timber companies that deliberately channel stormwater into water ways through culverts, ditches and similar conveyances to comply with the NPDES program, enforces vital protections for valuable salmon fisheries and other downstream economic interests that otherwise must continue to pay a steep price for polluting practices over which they have no control.

ARGUMENT

I. EFFECTIVE REGULATION OF DISCHARGES FROM LOGGING ROADS UNDER THE CWA IS NECESSARY TO ENSURE THAT THE ECONOMIC IMPACTS OF POLLUTION CAUSED BY LOGGING ROADS ARE BORNE BY THOSE RESPONSIBLE FOR THE POLLUTION RATHER THAN OTHER BUSINESSES THAT DEPEND ON UNPOLLUTED WATER BODIES.

The overarching goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. 33 U.S.C. § 1251. In enacting the comprehensive protections mandated by the Act, and particularly the NPDES program at the heart of the Act, Congress recognized that the degradation of the nation's water ways not only threatened the public's health and recreational uses of rivers, streams, lakes, and other water bodies, but also that other national economic interests – particularly those of fishermen and other downstream businesses not responsible for the pollution – would also be greatly benefitted from enhanced regulation. *See*, *e.g.*, *A Legislative History of the Water Pollution Control Act Amendments of 1972*, 93d Cong., 1st Sess. (Comm. Print 1973) ("Leg. Hist.") at 162 (statement of lead Senate Sponsor Muskie) (explaining that urgent action was necessary in view of the "grim realities of lakes, rivers, and bays where all forms of life have been smothered by untreated waste, and oceans which no longer provide us with food").

Accordingly, Congress established a "national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish [and] shellfish" be "achieved by July 1, 1983." 33 U.S.C. § 1251(2); *see also* Leg. Hist. at 189 (statement of Sen. Cooper) (recognizing that protecting fish and shellfish resources "will require a high level of water quality" as well as the "need for a permit system to apply these standards precisely to the sources of discharge of pollutants"); *id*. at 215-16 (statement of Sen. Bayh) (highlighting the protection and restoration of fish and other aquatic resources as a central purpose of the Act); *id*. at 386 (statement of Rep. King) ("There is increasing awareness that the abatement of [water] pollution will . . . enhance supplies of known and potential food products."); *id.* at 409 ("[I]f [businesses] don't have the quality and quantity of water supply they need to operate and produce their product, they are not going to be in business in any case.").

Indeed, "externality prevention" – *i.e.*, the notion that those responsible for the economic impacts caused by pollution should bear the burden of preventing or addressing it, rather than shifting that burden to other businesses – "is one of the purposes of many of our modern environmental laws," including the CWA. Lincoln L. Davies, *Skull Valley Crossroads: Reconciling Native Sovereignty and the Federal Trust*, 68 Md. L. Rev. 290, 359 (2009). This rationale for regulation stems from the "logic of cost-externalization," which "drives human enterprises to pass on potential and actual social costs into the commons of society and the environment." Zygmunt J.B. Plater, *Environmental Law and Three Economies: Navigating a Sprawling Field of Study, Practice and Societal Governance in Which Everything is Connected to Everything Else*, 23 Harv. Envtl. L. Rev. 359, 365 (1999) ("Humans tend to make decisions on relatively short-term horizons, and in insulated self-referential terms. . . . When we are involved in a production activity, we resolutely display an inclination to pass wide the costs, while holding close the benefits and profits. Thus there is a universal tendency of individuals and associations toward cost externalization."); *see also* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 Harv. L. Rev. 1089 (1972).

Accordingly, a central function of the CWA is to ensure that businesses and local governments will "internalize the cost of pollutant disposal, as opposed to allowing them to discharge pollutants and externalize the cost" to other interests that suffer the effects of pollution they had no responsibility for creating. Jonathan Rosenbloom, *New Day at the Pool: State Preemption, Common Pool Resources, and Non-Place Based Municipal Collaboration*, 36 Harv. Envtl. L. Rev. 445, 463 (2012); *see also* Noah D. Hall, *Political Externalities, Federalism, and a Proposal for an Interstate Environmental Impact Assessment Policy*, 32 Harv. Envtl. L. Rev. 49, 53-54 (2008) ("Most environmental laws address harms that cross property boundaries and impact the property of another. . . . Environmental harms that affect persons and property other than the source of the harm are basic examples of an economic externality."). The NPDES program is the principal mechanism under the CWA for internalizing costs associated with water pollution and degradation that adversely affects downstream economic interests. *Id*. at 73.

The use of culverts, ditches, and similar conveyances to channel sediment-laden stormwater off logging roads and into streams and other water bodies – with attendant adverse impacts on the economic interests of *amici* fishermen and other businesses that depend on clean water and healthy ecosystems – is the classic kind of externality the CWA was designed to address. As the Environmental Protection Agency ("EPA") has recently recognized, "[s]tormwater discharges from logging roads, especially improperly constructed or maintained roads, may introduce significant amounts of sediment and other pollutants into surface waters and, consequently, cause a variety of water quality impacts." 77 Fed. Reg. 30473, 30476 (May 23, 2012). Logging roads are a leading source of impairment of rivers, streams, and coastal shorelines, *id.*, and as summarized by EPA, stormwater discharges from such roads

> *can adversely affect the survival of dozens of sensitive aquatic biota (salmon, trout, other native fishes, amphibians and macroinvertebrates) where the species are located. Increased fine sediment deposition in streams and altered streamflows and channel morphology can result in increased adult and juvenile salmonid mortality where present. . . . Potential effects . . . can include increased loading of sediment due to erosion and mass wasting, increased suspended solids and turbidity, increased sediment deposition and bed load, alteration of stream morphology and channel simplification, altered streamflow, pollution from other chemicals associated with forest roads, increased turbidity and sedimentation in water treatment and supply systems, siltation of streambed substrates, impairment of spawning and rearing habitat, and degradation of habitat for salmonids, other fish, invertebrates, and other aquatic organisms*.

Id. (emphasis added).

Impacts of inadequately regulated logging road discharges are felt directly by the *amici* fishermen and other economic interests that play no role in the construction, maintenance, or use of the roads that impair the water ways on which these interests depend. Although Petitioners complain about the costs of complying with the NPDES program, Pet. Br. (No. 11-437) at 46-50, the costs associated with the pollution at issue *should* be borne by those responsible for it rather than those downstream businesses harmed by it.

In any event, the Court should be aware that there are significant economic interests that agree with Respondents on the need for appropriate regulation of logging road culvert sediment stream discharges under the NPDES program. Especially because this case is still at the pleading stage, Respondents' allegations that the use of culverts, ditches and similar conveyances in connection with logging roads contributes directly to declines of populations of salmonids and other species, *see* J.A. Vol. II at 17, have not been fleshed out with the development of a factual record. Accordingly, the information presented in this and other *amicus* briefs supporting Respondents is highly relevant to whether logging roads are associated with the kind of serious degradation of the nation's waters – and injuries to other interests that rely on those waters – that Congress sought to address through the CWA and the NPDES program.

II. SALMON-DEPENDENT ECONOMIES DEPEND ON UNPOLLUTED SALMON RIVER SYSTEMS.

Salmon are an important national food resource and the biological basis of a major west coast fishing industry supporting many thousands of jobs. Salmon, however, cannot live in highly polluted waters, and thus their very existence – and the industries that depend upon them – are in turn dependent upon strong enforcement of the CWA.

Salmonids[2] are an "anadromous" fish species. This means their eggs are laid far inland in cold, freshwater mountain streams after full-grown spawning adult salmonids return from the ocean, which they entered two to five years earlier as juveniles. Those eggs then hatch a few weeks later – *but can only survive if the water is clear and cold enough to support them*. Once they hatch, the emerging juveniles first inhabit their gravel beds until they can grow large enough to gradually migrate downriver to the

---

[2] There are many different species of fish often commonly (and confusingly) referred to as "salmon." Fisheries biologists more precisely call this group of fish "salmonids," which usually refers to any or all of the following fish species in the scientific genus *Oncorhynchus*: chinook or king salmon (*Oncorhynchust shawtscha*); coho or silver salmon (*Oncorhynchus kisutch*); coastal searun cutthroat (*Oncorhynchus clarki clarki*); steelhead (*Oncorhynchus mykiss gairdneri*); chum salmon (*Oncorhynchus keta*); pink salmon (*Oncorhynchus gorbuscha*); and sockeye salmon (*Oncorhynchus nerka*). All have very similar anadromous lifecycles.

saltwater estuary as "smolts." There they biologically adapt to the hostile salt water environment, then migrate out to sea to grow to adulthood – and then return to fresh water to start their amazing lifecycle all over again.

Once these fish enter the ocean, they migrate sometimes thousands of miles north and south along the coastline, eating and growing as they go until reaching maturity and returning to their natal streams to spawn. How they find their way back to the same stream sites where they originally hatched is still a mystery, but is apparently an ability that chemical and sediment pollutants in their natal rivers can easily disrupt.

Some degree of sediment inflows to salmon-bearing river systems is natural, contributing nutrients as well as spawning gravel to river ecosystems. But too much sediment is a very bad thing for young salmonids. *See Amicus* Br. (Nos. 11-338, 11-347) Western Div. American Fisheries Society, *et al.*

As EPA has recently reaffirmed, excess sediment loads destroy a river system's ecological carrying capacity and harm salmonids in a variety of ways. *See* 77 Fed. Reg. 30473, 30476 (May 23, 2012). In particular, fine sediments smother salmonid eggs, and clog the gills of young fish, killing them quickly by suffocation. Excess river sediment also reduces visibility so that young fish have a much harder time seeing and avoiding predators. Increased turbidity from these sediments also slows down in-stream photosynthesis, impoverishing the entire river food chain when young fish most need to feed.[3]

This in turn means far fewer salmon for humans to harvest in later years, when each year's juveniles return as harvestable adults – and that means economic losses and many lost fishing-related coastal jobs.

III. ENVIRONMENT-RELATED DECLINES IN THE ECONOMIC VALUE OF U.S. COMMERCIAL SALMON FISHERIES.

Even though there have been major losses in the productivity of many once-abundant salmon-producing rivers, the U.S. commercial salmon harvest still contributes greatly to the economies of the Pacific Northwest and Alaska, in 2011 landing an estimated 780.1 million pounds of salmon valued at more than $618.3 million in *ex vessel* (*i.e.*, price paid at the dock) value.[4] Once the fish enter the stream of commerce at the processors, they can create several times that

---

[3] *See also* Spence, Brian C., *et al.*, *An ecosystem approach to salmonid conservation*, Report No. TR-4501-96-6057, ManTech Environmental Research Services Corp., Corvallis, OR (Dec. 1996), at 86 & 110. Available at: www.nwr.noaa.gov/Publications/Reference-Documents/ManTech-Report.cfm.

[4] National Marine Fisheries Service ("NMFS"), *Fisheries of the United States 2011* (Aug. 2012), Table at 13. Available at: www.st.nmfs.noaa.gov/st1/fus/fus11/FUS_2011.pdf.

value in "personal income impacts" throughout the stream of commerce.[5]

However, the vast bulk (about 95%) of this 2011 salmon harvest was contributed by the Alaska fishery, largely due to widespread and long-term salmonid population declines in the once primary salmonid-producing regions of northern California, Oregon and Washington. In those "lower-48" Pacific Northwest states, numerous and synergistically acting adverse environmental impacts, mostly human-caused, have disrupted and damaged many ecologically sensitive salmon-producing rivers, already pushing many of that region's once abundant salmonid runs into biological extinction. Many other runs now require protections under the Federal Endangered Species Act, 16 U.S.C. §§ 1531-1544 ("ESA") to prevent extinction. As coastal salmonid numbers declined, so did commercial and recreational harvests – and coastal fishing-based economies.

Finally, in 1991 a landmark scientific salmonid population assessment was published by the American Fisheries Society (AFS), the nation's oldest and most prestigious scientific society of fisheries scientists and fish managers. *That study estimated that more than 100 wild salmonid runs that once occurred*

---

[5] Net economic or "personal income impacts" are generally a multiplier of 2.0 to 4.5 times their initial *ex vessel* (*i.e.*, at the processor, on the docks) wholesale value, depending on the model used.

throughout the Pacific Northwest had already been pushed to extinction, and that about 214 of the remaining wild runs still hanging on were either in danger of extinction or "species of concern" because of their still ongoing declines. In nearly all cases, poor instream habitat due to decreasing water quality was identified as a major factor in those declines.[6]

In earlier studies of the economic value of Pacific Northwest salmonid fisheries, commercial salmon harvests in northern California, as of 1988, generated an estimated $94.723 million in personal income impacts (in 1988 dollars) and supported some 4,000 median wage jobs. Commercial salmonid harvests in Oregon during that same year (1988) also generated an estimated $89.062 million in personal income impacts, supporting an additional 4,450 median wage jobs.[7] Since 1988, however, there have been repeated ocean salmon fishery failures resulting from increasingly widespread fisheries closures necessitated by the accelerating loss of salmon habitat productivity in most of northern California and the Pacific Northwest.

---

[6] Nehlsen, W., J.E. Williams, and J.A. Lichatowich, *Pacific salmon at the crossroads: stocks at risk from California, Oregon, Idaho, and Washington*, FISHERIES 16(2):4-21(1991). Available at: www.tandfonline.com/toc/ufsh20/16/1.

[7] Pacific Rivers Council, *Economic imperative of protecting riverine habitat in the Pacific Northwest*, Research Report No. 5 (Jan. 1992). Available at: www.pcffa.org/PRCReport1992.pdf.

By way of economic comparisons between the two year's reports, between 1988 and 2011, landings of salmon in California in 1988 were recorded at 17.269 million pounds – but at only 1.1 million pounds in 2011, representing a loss of 94% in California landings. In Oregon, the 1988 season harvest landed 17.708 million pounds of salmon – but only 2.4 million pounds were landed in 2011, a loss of 86% in landings. If expressed purely in terms of proportional lost median wage jobs from the 1988 baseline, this would be a job loss of 3,760 jobs in California and of 3,827 jobs in Oregon. These kinds of massive job losses have been *devastating* for the isolated rural coastal communities in which these kinds of fishing industry jobs losses tend to be concentrated.[8]

These 1988-to-2011 salmon landings comparisons demonstrate major salmon fishery economic losses over the last 24 years in both northern California and Oregon ocean commercial salmon fisheries.[9] This

---

[8] Single-year harvest numbers are, of course, only "snapshots" of a dynamic system changing annually. This cursory analysis, however, does demonstrate the long-term salmon productivity trend for northern California and Pacific Northwest salmon-producing rivers over the last several decades, *i.e.*, consistently downward to the point where many of these once abundant salmonid runs are now ESA-listed.

[9] Only in Washington State has the salmon harvest been relatively comparable between those two years of 1988 and 2011. Salmon landings in Washington State in 1988 came in at 35.955 million pounds but at 38.3 million pounds in 2011 – a slight increase. This likely reflects the fact that today so many landings of salmon caught in the Southeast Alaska fishery are coming

(Continued on following page)

in turn reflects the fact that so many California and Oregon salmon populations have been in steep decline over the last several decades due to multiple adverse environmental impacts on their in-stream habitat. While ocean conditions also play a major role in salmon survival rates, ocean conditions during that time frame have been variable but on average normal (and roughly comparable as between 1988 and 2011), while the instream habitat and water quality of most major salmon streams continued to decline nearly everywhere in the Pacific Northwest, as demonstrated by numerous ESA listings for salmonids that followed after 1988.

Since the 1991 AFS paper was published, numerous Pacific Northwest wild salmonid populations have been determined by the National Marine Fisheries Service ("NMFS"), the federal agency with jurisdiction over ESA protections for anadromous species, as being at risk of extinction. Today 28 genetically separate populations of these species have been placed under ESA protection. Three additional populations have been classified as "species of concern," and thus

back to Seattle because of the ease of shipping and processing from that port. Most Washington commercial salmon fishermen now have permits and fish in Southeast Alaska. This would mask reduced productivity from Washington State's own river systems. Additionally, there are many large hatcheries in operation on the Columbia River, which contribute a large number of north-migrating hatchery-origin fish to the Washington State ocean salmon fishery – again likely artificially masking wild salmonid declines in that state.

subject to potential ESA listings at a later date if their numbers do not improve.[10]

Declines of once-important salmon runs in the Pacific Northwest can disrupt and close down economically valuable ocean commercial salmon fisheries in either or both of two ways.[11] One way is when the fish originally expected are simply not there. Another way is that since both strong and weak populations of salmonids can intermingle at sea, "weak stock management" population conservation rules administered under the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801-1891d, for federally managed fisheries often require the weakest stock to become the "limiting factor" on harvest of *all other intermingling stocks*.

Thus whenever *even one* intermingling salmonid stock becomes so depressed that it enters a "zero harvest" regime necessary to prevent even more serious

[10] *See* NMFS, ESA Salmon Listings. Available at: www.nwr.noaa.gov/ESA-Salmon-Listings/upload/1-pgr-8-11.pdf (providing complete and updated list of the ESA listings for various salmonid populations in the Pacific Northwest). *See also* NMFS, Salmonid Range Maps. Available at: www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Maps/Index.cfm (providing range maps of the various ESA-listed salmonid population groups, known as "evolutionarily significant units" or ESUs by NMFS).

[11] Steelhead and searun cutthroat are not commercially harvested species and so are not included in commercial harvest numbers in this section. Hence the term "salmon" here refers only to commercially harvested ocean-going salmonid species such as chinook, coho, sockeye, pinks and chum.

declines, that "weak link" can result in the total early closure of *all nearby* (much more abundant) ocean commercial salmon fisheries. In practice, ocean commercial fisheries that even accidentally might impact weakened salmon stocks are usually shut down *many years before* an ESA listing is imposed, under this "weak stock management" requirement.[12]

Even in some non-salmon ocean fisheries, too high an accidental catch rate (called "bycatch") of nearby non-targeted salmon can still trigger the total or partial closure of otherwise completely unrelated fisheries – even for very different species. For instance, some west coast ocean ground fish harvests are now restricted because of the potential for accidental catch of ESA-listed salmonids that may by chance be migrating through that area at that time. And once a depressed wild salmonid stock becomes ESA-listed, of course, there is *further* need to rigorously protect and avoid even accidentally impacting those ESA-listed fish stocks during regular fishing seasons under the same "weak stock management" principles – as well as under the ESA.

[12] For instance, well before ESA protections became necessary for the depressed Southern Oregon/Northern California Coho (SONCC) population, local ocean salmon fisheries were closed down to protect this very weak stock. California commercial fishing on this stock in northern California and southern Oregon was terminated under the Magnuson-Stevens Act in 1992, but the ESA listing for that SONCC stock was not imposed until 1997. *See* 62 Fed. Reg. 24588-24609 (May 6, 1997). Commercial fishing was thus no longer a significant factor in its declines.

There has been considerable effort to mitigate commercial harvest losses by artificially producing non-ESA listed hatchery-bred salmonids in mitigation hatcheries. But since wild salmon also intermingle freely with hatchery-origin fish within the oceans, closures intended to protect ESA-listed wild stocks will still frequently close down otherwise abundant hatchery-origin fish harvest opportunities throughout much of the Pacific Northwest. In addition, hatcheries are no solution to poor river conditions; indeed, hatchery-origin fish will also die *en mass* in-river, both as juveniles and returning adults, if high sediment and turbidity levels are too extreme.

As a further measure of the economic declines in the fishing industry caused by widespread salmon population declines in northern California and the Pacific Northwest, in 1982 there were 5,964 commercial salmon vessel permits issued in California by its Department of Fish and Game. By 2011, there were only 1,167 such permits outstanding – a decline of 80%. In Oregon, there were 3,646 commercial salmon boat permits issued in 1982, but by 2011 only 1,003 remained – a 72% fleet loss. And in both states today only a fraction of those remaining boats can actually participate in severely depressed commercial ocean salmon fisheries.[13]

[13] Pacific Fishery Management Council, *Review of 2011 ocean salmon fisheries* (2012) at Tables D-4 (California), D-5 (Oregon). Available at: www.pcouncil.org/wp-content/uploads/salsafe_2011.pdf.

IV. WIDESPREAD SEDIMENT POLLUTION IS A MAJOR FACTOR IN POOR RIVER HEALTH IN BOTH OREGON AND NORTHERN CALIFORNIA.

Clean Water Act section 303(d), 33 U.S.C. § 1313(d), requires states to periodically identify waters of the state that do not meet certain minimum water quality standards. California and Oregon have both developed 303(d) "impaired waters" lists for sediment pollution which they keep relatively current. Much of this information can now be accessed online on a state-by-state basis through the EPA's new "**A**ssessment **T**MDL **T**racking **A**nd **I**mplementation **S**ystem (ATTAINS)" database and website.[14]

Coastal Northern California: It is complex to determine the major sources of water pollution in California, in part because this large state contains so many geographic areas, each with its own types of impacts. However, California's 2010 Integrated Report on its 303(d) list of water quality limited streams in that state was approved by EPA on October 11, 2011, and contains the latest official data on California's 303(d)-listed water quality limited streams.

According to that 2010 California 303(d) list, and trying to assess just the impacts of logging road sediments on salmon runs by looking *only* at the California North Coast Regional Water Quality Control

---

[14] *See* EPA, ATTAINS website, www.epa.gov/waters/ir.

Board's jurisdiction,[15] there are an estimated 17,478 stream miles now listed in that coastal forested area under the Clean Water Act as "water quality limited" *specifically* for sediment and/or siltation, much of which has been specifically attributed or traced (at least in part) to local watershed silvicultural operations, including eroding logging roads.[16]

Oregon: As of the 2006 Clean Water Act 303(d) listing information reported for Oregon, EPA's ATTAINS database notes that 12,248.8 stream miles and 88,562.2 acres (138.38 square miles) of Oregon lakes, reservoirs and ponds were 303(d) listed as "water quality impaired" for either sediment or turbidity or both.[17] Not all these areas are heavily logged, but the upper portions of most of these watersheds are generally heavily forested and intensive industrial logging is the most common land use in those areas.

---

[15] The California North Coast Regional Water Quality Control Board's jurisdiction includes the counties of Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity counties. These are areas of the state where most commercial logging and most of its salmon-bearing streams both occur, but little agriculture.

[16] *See* California 303(d) list, www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

[17] *See* EPA, *Oregon Water Quality Assessment Report*, http://ofmpub.epa.gov/waters10/attains_state.control?p_state=OR.

V. LOGGING ROAD SEDIMENT DIRECTLY DAMAGES NORTHWEST SALMON HARVESTS.

In 2009, EPA reported that for all the nation's rivers and streams surveyed to date (about 16%) sediment was the seventh, and closely related turbidity was the tenth, leading source of water quality impairment to rivers and streams nationwide – and if considered together would be the third largest source.[18] In EPA's ATTAINS database, that agency currently lists sedimentation as the "cause of impairment" for 106,057 river and stream miles, and 718,144 acres (1,122.1 square miles) of lakes, reservoirs and ponds nationwide, exclusive of the Great Lakes.[19] The EPA database also identifies "silviculture (forestry)" as the probable source of impairment for at least 19,444 miles of the nation's threatened or impaired streams and 242,583 acres (379.04 square miles) of its lakes, reservoirs and ponds.[20]

A number of scientific studies have found strong negative correlations between logging road density and salmon productivity.[21] In a number of specific

---

[18] EPA, 2009, *National Water Quality Inventory: 2004 Report to Congress*, EPA-841-R-08-001 (Jan. 2009). Available at: http://water.epa.gov/lawsregs/guidance/cwa/305b/2004report_index.cfm.

[19] *See* EPA, *National Causes of Impairment*, http://ofmpub.epa.gov/waters10/attains_nation_cy.control#causes.

[20] 77 Fed. Reg. 30473, 30476 (May 23, 2012).

[21] *See*, *e.g.*, NMFS, *Scientific conclusions of the state review for Oregon coast coho salmon (Oncorhynchus kisutch)* (June 2012),

(Continued on following page)

salmonid ESA listings, the threats to the listed species from excessive sediments coming from industrial logging roads has also been identified as a major factor in their decline. For instance, the ESA listing as "threatened" of Southern Oregon/Northern California (SONCC) coho salmon was based in part on such sediment impacts. That May 6, 1997, "threatened" listing decision noted:

> Forestry has degraded coho salmon habitat through removal and disturbance of natural vegetation, disturbance and compaction of soils, *construction of roads, and installation of culverts*. Timber harvest activities can result in sediment delivered to streams through mass wasting and surface erosion that can elevate the level of fine sediments in spawning gravels and fill the substrate interstices inhabited by invertebrates. . . . The most pervasive cumulative effect of past forest practices on habitats for anadromous salmonids has been an overall reduction of habitat complexity from loss of multiple habitat components. *Habitat complexity has declined principally because of reduced size and frequency of pools due to filling with sediment* and loss of LWD [large woody

---

at 76-78. Available at: www.nwfsc.noaa.gov/assets/25/8714_08132012_121939_SROregonCohoTM118WebFinal.pdf. *See also* Firman, Julie C., *et al., Landscape models of adult coho salmon density examined at four spatial extents*, TRANSACTIONS OF THE AMERICAN FISHERIES SOCIETY, 140:2, 440-455 (2011). Available at: http://dx.doi.org/10.1080/00028487.2011.567854.

> debris]. . . . *As previously mentioned, sedimentation of stream beds has been implicated as a principal cause of declining salmonid populations throughout their range. . . . Several studies have indicated that, in this region, catastrophic erosion and subsequent stream sedimentation (such as during the 1955 and 1964 floods) resulted from areas which had been clearcut or which had roads constructed on unstable soils*" (emphasis added).[22]

In another instance, the most recent ESA relisting of the Oregon Coastal (OC) Coho Salmon population in particular directly implicates intensive local logging practices as a major factor in their decline, explaining that "historical and ongoing timber harvest and road building have reduced stream shade, increased fine sediment levels, reduced levels of instream large wood, and altered watershed hydrology."[23] NMFS also noted in that relisting decision that Oregon's Forest Practices Act, which governs commercial logging practices on all privately and state owned timberlands (which includes most of Oregon's coastal forests), does not adequately prevent these kinds of impacts:

> Although the Oregon Forest Practices Act and the Forest Practice Rules generally have become more protective of riparian and aquatic

---

[22] 62 Fed. Reg. 24588, at 24593 and 24599 (May 6, 1997) (emphasis added, internal citations omitted).

[23] 76 Fed. Reg. 35755, 35766 (June 20, 2011).

> habitats over time, significant concerns remain over their ability to adequately protect water quality and salmon habitat. In particular, disagreements continue over: (1) whether the widths of RMAs [riparian management areas] are sufficient to fully protect riparian functions and stream habitats; (2) whether operations allowed within RMAs will degrade stream habitats; (3) operations on high-risk landslide sites; and (4) watershed-scale effects. Based on the available information, we were unable to conclude that the Oregon Forest Practices Act adequately protects OC coho habitat in all circumstances. On some streams, forestry operations conducted in compliance with this act are likely to reduce stream shade, slow the recruitment of large woody debris, and add fine sediments. Since there are no limitations on cumulative watershed effects, road density on private forest lands, which is high throughout the range of this ESU, is unlikely to decrease."[24]

NMFS has also systematically delineated the many factors pushing ESA-listed salmon runs in the Pacific Northwest (particularly northern California and Oregon) ever closer to extinction, and in its report *Factors Contributing to the Decline of Chinook Salmon*, issued in June 1998, has in particular noted:

[24] *Id.* at 35767.

> Timber harvesting *and associated road building* occur throughout the region on Federal, state, tribal, and private lands. These activities *increase sedimentation and debris flows* and reduce cover and shade resulting in aggradation, embedded spawning gravel, and increased water temperatures (emphasis added).[25]

The 1998 *Factors* report specifically identified logging operation impacts (which includes road building) as a major factor in the declines of 9 out of 15 distinct west coast chinook salmon populations analyzed, including all those in heavily forested coastal areas or within the Northwest's major forested river watersheds.[26] Of those chinook populations analyzed, five of these distinct chinook populations are now ESA-listed.[27]

In an earlier NMFS *Factors for Decline* report from 1996, this time concerning the underlying causes of various *steelhead* ESA-listings, NMFS also

---

[25] NMFS, *Factors contributing to the decline of chinook salmon: an addendum to the 1996 west coast steelhead factors for decline report* (June 1998). Available at: www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Reports-and-Publications/upload/chnk-ffd.pdf.

[26] *Id*. at Table 1, 67-69.

[27] Listed populations are identified as Puget Sound, Lower Columbia River, Upper Willamette River, Snake River Fall-run and Snake River Spring/Summer-run chinook populations. *See* 70 Fed. Reg. 37160 (June 28, 2005).

discussed the role of sediment pollution in those populations' declines:

> In general, effects of sedimentation on salmonids are well documented and include: clogging and abrasion of gills and other respiratory surfaces; adhering to the chorion or eggs; providing conditions conductive to entry and persistence of disease-related organisms; inducing behavioral modifications; entombing different life stages; altering water chemistry by adsorption of chemicals; affecting useable habitat by scouring and filling pools and riffles and changing bedload composition; reducing photosynthetic growth and primary production; and affecting intergravel permeability and dissolved oxygen levels.[28]

Increased water turbidity, which impedes light penetration, also has a major negative impact on salmonid survival rates, and is in turn directly related to increased sediment loads. The 1996 *Factors for Decline* report further explains:

> Increased turbidity decreases photosynthesis of aquatic plants and can clog the respiratory surfaces and feeding mechanisms of aquatic animals. Turbidity results when fine silt,

---

[28] NMFS, *Factors for decline: a supplement to the notice of determination for west coast steelhead under the Endangered Species Act*, National Marine Fisheries Service (NMFS) (August, 1996). Accessed Oct. 12, 2012 at: www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Reports-and-Publications/upload/stlhd-ffd.pdf. Quote from 17.

> part of the overall sediment transport, remains suspended for long periods of time. Turbidity causes light to be scattered and absorbed, reducing light penetration and thus diminishing or even eliminating aquatic plant growth. Loss of aquatic plants leads to the loss of associated snails and aquatic invertebrates [that] serve as a food source for young fish. . . . Sedimentation has also been shown to increase stream temperature. . . .
>
> Accelerated rates of erosion and sedimentation are a consequence of most forest land management activities. *Road networks in many upland areas of the Pacific Northwest are the most important source of management-accelerated sediment delivery to anadromous fish habitats. The sediment contribution to streams from roads is often much greater than that from all other land management activities combined (Gibbon and Salo, 1973)* (emphasis added).[29]

The 1996 *Factors for Decline* report concerning steelhead also specifically identified logging operation impacts (including road building) as a major factor in the declines of 11 out of 15 distinct steelhead

---

[29] *Id*. at 17-19; *see also* Gibbons, Dave R., Salo, Ernest O., *An annotated bibliography of the effects of logging on fish of the western United States and Canada*, GEN. TECH. REP. PNW-GTR-010 (1973), U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station, Portland, OR. Available at: www.treesearch.fs.fed.us/pubs/22556.

populations it analyzed. Today all 11 of those populations are ESA-listed.[30]

Canadian researchers estimated the loss in salmon-related economic values arising from the impacts on coastal forests of "consumptive uses such as logging and resource extraction." The resulting values for habitat ranged from $0.26 to $1.40 per acre of watershed, or $1,491 to $7,914 per mile of spawning stream (converted to 2003 U.S. dollars), which the authors also considered likely to be a very conservative estimate.[31]

In another study on economic losses to salmon fisheries caused by industrial logging and associated road building, researchers also noted significant economic losses from these causes, finding that:

---

[30] Listed steelhead populations include: Upper Columbia River; Snake River Basin; Middle Columbia River; Lower Columbia River; Upper Willamette River; South-Central California Coast; Central California Coast; Northern California; California Central Valley; and Oregon Coast. *See* 72 Fed. Reg. 834 (January 5, 2006). The Puget Sound population, in which logging also plays a role, was subsequently also listed. 72 Fed. Reg. 26722 (May 11, 2007). The Southern California population of steelhead was also listed on January 5, 2006, but urbanization rather than logging impacts were implicated in that run's declines.

[31] Knowler, D.J., B.W. MacGregor, M.J. Bradford, and R.M. Peterman, *Valuing freshwater salmon habitat on the west coast of Canada*, JOURNAL OF ENVIRONMENTAL MANAGEMENT, 69: 261-273 (Nov. 2003). Available at: www.sciencedirect.com/science/article/pii/S0301479703001543.

> [s]ubstantial losses in anadromous fish benefits result from logging on just 21% of the land within the Siuslaw NF. In particular, the Current Direction and the Timber Benchmark alternatives result in [commercial fishing] losses over the 30-year planning period of approximately $1.55 million and $1.67 million, respectively, compared to the Minimum Management (no timber harvesting or road building) alternative. . . . Thus, while improved timber harvesting practices of leaving buffer strips and use of better road design have reduced the extent of fisheries losses, there still are substantial 'unavoidable' losses associated with timber harvesting.[32]

Similarly, other studies assessing the total socioeconomic costs *versus* benefits to society as a whole of improved commercial logging rules (such as requiring larger riparian buffer zones between salmon-bearing streams and logging roads to protect against sediment) make clear that in many cases the increased net economic value to west coast salmon fisheries *far outweighs* the much smaller economic costs to timber owners from mere reductions in riparian zone logging. For instance, one more recent study found:

---

[32] Loomis, J. B., *The bioeconomic effects of timber harvesting on recreational and commercial salmon and steelhead fishing: a case study of the Siuslaw National Forest*, MARINE RESOURCE ECONOMICS, Vol. 5; 43-60, at 56 (1988). Available at: http://agecon search.umn.edu/bitstream/48449/2/8175753.pdf.

> Another useful comparison entails recognizing that salmon habitat acts like financial assets, generating a flow of economic benefits over time. Evidence from the past decade indicates that, if habitat improvements resulting from salmon-related logging restrictions generated one additional fish for the recreational fishery per year per acre for the foreseeable future, the asset value of the habitat would be about $2,800 per acre.
>
> By comparison, the average timber-asset value of state and private lands used for growing timber in Oregon is about $400 per acre in Western Oregon, and the average value of land plus standing timber is about $4,000 per acre. Values are less east of the Cascade.
>
> Thus, if logging restrictions converted one acre of private or state land from producing timber to producing one salmon per year for the recreational fishery, the asset value of the new salmon habitat would be about seven times the forgone timber-asset value of the land, alone.[33]

In short, reducing the net economic "externality" damages to other natural resources (such as valuable

[33] ECONorthwest, *Salmon, timber, and the economy*, ECONorthwest (Dec. 1999), at ii-iii. Available at: http://pacificrivers.org/science-research/resources-publications/salmon-timber-and-the-economy-the-potential-economic-consequences-of-restricting-logging-to-save-oregon2019s-salmon. Numbers in 1999 dollars.

salmon fisheries) from industrial logging, including minimizing widespread sedimentation from its extensive networks of private logging roads, can – and often does – result in many more net economic *gains* to society as a whole than economic *losses*.

VI. MANY OTHER INDUSTRIES ARE ALSO ADVERSELY AFFECTED BY LOGGING ROAD SEDIMENT POLLUTION.

The commercial salmon fishing industry is only one of many industries that are economically damaged by excessive river sediments and accompanying elevated water turbidity. Among those industrial sectors most affected are the following:

Lower River Navigation and Reservoir-Related Economic Costs: Lower watershed debris catch basins, navigable river segments, and reservoirs are natural sinks for sediment to accumulate. Economists have long known that these impacts can cause multiple economic losses:

> Sedimentation of river channels and harbors can cause delays in shipping and even the loss of vessels. . . . Reservoirs make excellent sediment traps. Flow water can carry large loads of sediment in suspension. When a river's flow is checked by a reservoir, the carrying capacity of the river is greatly reduced, and sediment settles out into the storage basin. Without removal and with a continuous inflow of sediment-laden water, the reservoir will eventually fill with sediment. . . .

> A reservoir can provide one or more services such as flood control, drinking water supply, hydroelectric generation, and recreation. The economic costs from sedimentation take three forms: effects on the services provided by the reservoir (such as boating and irrigation), costs of remediation (dredging), and damage to the reservoir structures itself (turbines, pumps). Benefits from reduced sedimentation are the reverse of the above effects.[34]

In looking at upper watershed debris loads and excessive soil erosion from the Los Angeles National Forests, for instance, records of sediment discharge to debris basins were collected for 41 watersheds along the southern flank of the San Gabriel Mountains of Los Angeles County. Major cost savings from reduced annual sediment loads came from decreased costs for Los Angeles County Public Works to clean out these basins. The average cost across all 41 basins for 1969 to 1995 was nearly $12 per cubic yard (in 2000 dollars), with costs ranging from $2.48 to $32 per cubic yard, putting a major strain on city maintenance budgets.[35]

---

[34] Ribaudo, M.O. and D. Hellerstein, *Estimating water quality benefits: theoretical and methodological issues*, USDA TECHNICAL BULLETIN NO. 1808 (1992), at 16-17. Available at: http://ageconsearch.umn.edu/bitstream/33586/1/tb921808.pdf.

[35] Gonzalez-Caban, *et al.*, *Costs and benefits of reducing sediment production from wildfires through prescribed burning: the Kinneloa Fire case study*, 241-52, PROCEEDINGS OF THE SECOND INTERNATIONAL SYMPOSIUM ON FIRE ECONOMICS, PLANNING, AND POLICY: A GLOBAL VIEW, GENERAL TECHNICAL REPORT 208 (2008).

(Continued on following page)

Municipal Water Treatment: The mechanisms by which increased river sedimentation increases costs of water treatment are also well known:

> Rivers and reservoirs provide drinking water to over 112 million U.S. residents. Water treatment processes are affected by the quality of the source water. Conventional treatment can consist of flocculation, sedimentation, filtration, and disinfection. Intake water with low levels of suspended sediment may be treated by direct filtration, which eliminates the need for sedimentation and, sometimes, flocculation. Cost savings from the use of direct filtration include lower capital costs and lower costs associated with lower chemical coagulant doses and decreased sludge production and disposal. Low turbidity levels also simplify the disinfection process, thus making it less costly. . . . The change in water production cost induced by changes in sediment load is a measure of the welfare effects from soil conservation.[36]

Actual instances of high sediment surges driving up municipal water treatment costs abound. For instance, in 1996 the City of Salem, Oregon, had to disrupt supplies of water to its customers because high levels of river sediment later traced to logging

---

Available at: www.fs.fed.us/psw/publications/documents/psw_gtr208en/psw_gtr208en_241-252_gonzalez-caban.pdf.

[36] Ribaudo, M.O. and D. Hellerstein, 1992, *supra*, pg. 20 (internal citations omitted).

roads overwhelmed the capabilities of its water treatment facility. This caused its water users to incur short-run damages totaling $3.4 million to $4.4 million (in 1996 dollars). Installing a water-treatment system capable of handling such high sediment levels in the future was estimated to increase customer costs by about $13-$24 (in 1996 dollars) per capita, per year.[37]

In other examples from Oregon, another water treatment economic costs study has noted:

> [T]he average daily cost of sediment was $75.84, or $20.00 per million gallons of water treated for the City of Corvallis. The 'average annual municipal cost' of turbidity in source water for all communities in the Willamette Valley is $1,015,472. '[A] total average of $4.22 million a year is estimated to be spent on sediment-related road maintenance.' The sum of the annual municipal, road-maintenance, and hydroelectric generating costs of sediment in the Willamette Valley is $5.5 million.[38]

---

[37] Hulse, D., G. Grant, E. Niemi, A. Branscomb, D. Diethelm, R. Ulrich, and E. Whitelaw, *Muddy waters: how floods clarify evolving relationships among landscape processes and resource management decision-making in municipal watersheds*, EPA/NSF Final Project Report GAD#R825822, Department of Landscape Architecture, University of Oregon, Eugene, Oregon (2002). Available at: www.fsl.orst.edu/wpg/pubs/Muddy%20Waters%20full.pdf.

[38] Moore, W.B. and B.A. McCarl, *Off-site costs of soil erosion: a case study in the Willamette Valley*, WESTERN JOURNAL OF AGRICULTURAL ECONOMICS. 12(1):42-49 (1987). Available at: http://ageconsearch.umn.edu/bitstream/32477/1/12010042.pdf.

The Commercial Timber Industry: Within the timber industry itself, it is well recognized that conserving often thin forest topsoils results in better tree growth. Additionally, controlling sediment at any point in a logging road network will prevent sediment buildups that can block hydrologically lower culverts (causing often cascading road blowouts), or trigger flooding washouts on lower portions of other logging roads.

> When soil is eroded from a field, it can be deposited in roadside ditches, which line many rural roadways. Sedimentation in culverts and ditches reduces the capacity and the effectiveness of the structures, increasing the likelihood of road flooding during storms. The costs from ditch sedimentation are the maintenance costs of removing sediment plus the damage from road flooding.[39]

Simply put, preventing logging road erosion *saves the timber industry money*. These economic savings from lowered road maintenance costs alone may well offset (or exceed) any added costs of NPDES permit-required sediment controls.

General Industrial and Societal Costs of Sediment Pollution: There are many additional adverse economic impacts from sediment pollution on

---

[39] Ribaudo, M.O. and D. Hellerstein, 1992, *supra*, pg. 21. While this study referenced primarily agricultural lands, its findings also apply to silviculture.

many industries (and on society as a whole), as many studies have noted.

> Soil erosion and resulting sedimentation can lead to clogged drainage-ways and suspended sediment in rivers. Erosion, sedimentation and/or deposition directly or indirectly increase costs to society in terms of facility maintenance (*e.g.*, ditch cleaning), facility replacement (*e.g.*, building new dams), erosion mitigation (*e.g.*, increased water purification), and/or effect prevention (*e.g.*, sediment settling ponds). In addition, soil erosion processes may influence income by altering production or input requirements. For example, farmers whose lands are inundated by sediment-laden rivers may find an increase in passive fertilization and/or crop acreage damaged by deposition.[40]

Models and data at the U.S. Department of Agriculture have also estimated the value of the economic benefits from 13 categories of reductions in water-driven soil erosion on agricultural lands.[41] These values are also applicable to erosion on non-agricultural lands, to the extent that it results in similar delivery of sediment to streams with similar

---

[40] Moore, W.B. and B.A. McCarl, 1987, *supra*, pg. 1.

[41] Hansen, L. and M. Ribaudo, *Economic measures of soil conservation benefits: regional values for policy assessment*, TECHNICAL BULLETIN 1922 (2008), USDA, Economic Research Service. Accessed October 10, 2012, from: www.ers.usda.gov/Publications/TB1922/TB1922.pdf.

environmental consequences.[42] Those economic values ranged up to $8.81/ton of soil displaced (in 2000 dollars).[43] Soil erosion in the U.S. has also been estimated in another study to occur at the rate of about 30 tons per hectare per year. Multiplied by even small per ton economic loss rates, total national economic losses through soil erosion alone are thus *about $44 billion annually*.[44]

In short, minimizing the harmful effects of soil erosion on the nation's water ways makes excellent economic sense. Initially, society as a whole benefits through reduction of environmental damage costs to valuable economic resources and industries often far downstream. Additionally, in this case the timber industry otherwise generating this erosion may also benefit by lowering its own expenditures on maintenance of logging roads and associated ditches, culverts, and other conveyances for discharging stormwater.

---

[42] Hansen, L. and M. Ribaudo (2008), *id.*, at 5-6.

[43] Hansen, L. and M. Ribaudo (2008), *id.*, Table at 4.

[44] See Pimentel, David, *et al.*, *Environmental and economic costs of soil erosion and conservation benefits*, SCIENCE, 267:1117-1123 (Feb. 24, 1995). Although most of this total U.S. soil erosion derives from agriculture, silviculture in the western U.S. is also a major source. Accessed Oct. 12, 2012, at: www.rachel.org/files/document/Environmental_and_Economic_Costs_of_Soil_Erosi.pdf.

CONCLUSION

Because the regulation of stormwater discharges to water ways from industrial logging road constructed culverts and drainage ditches through the NPDES program is entirely consistent with the overarching CWA objective of ensuring that those who benefit from degrading the nation's water ways cannot shift the costs of their polluting activities to downstream industries and economic interests, the ruling below should be affirmed.

Respectfully submitted,

ERIC R. GLITZENSTEIN*
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Ave., N.W., Suite 700
Washington, DC 20009-1063
(202) 588-5206
eglitzenstein@meyerglitz.com

GLEN H. SPAIN, General Counsel
PACIFIC COAST FEDERATION OF FISHERMEN'S
ASSOCIATIONS (PCFFA), INSTITUTE FOR
FISHERIES RESOURCES
PO Box 11170
Eugene, OR 97440-3370
(541) 689-2000
fish1ifr@aol.com

**Counsel of Record*
for Amici Curiae