No. 04-1527

IN THE
Supreme Court of the United States

S.D. WARREN CO.,
Petitioner,
v.

MAINE DEPARTMENT OF
ENVIRONMENTAL PROTECTION,
Respondent.

**On Writ of Certiorari to the
Maine Supreme Judicial Court**

**BRIEF OF TROUT UNLIMITED,
IZAAK WALTON LEAGUE OF AMERICA,
ATLANTIC SALMON FEDERATION,
FEDERATION OF FLY FISHERS, INC.,
CALIFORNIA TROUT, OREGON TROUT,
WASHINGTON TROUT, AND
AMERICAN SPORTFISHING ASSOCIATION AS
AMICI CURIAE IN SUPPORT OF RESPONDENT**

LEON F. SZEPTYCKI,
General Counsel
CHARLTON H. BONHAM,
Senior Attorney
Trout Unlimited
1300 N. 17th St., Suite 500
Arlington VA 22209
(703) 522-0200

JAMES B. DOUGHERTY
Counsel of Record
709 Third St. SW
Washington, D.C. 20024
(202) 488-1140

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INTERESTS OF AMICI CURIAE

Amici curiae submit this brief in support of respondent Maine Department of Environmental Protection, and ask the Court to affirm *S.D. Warren Co. v. Board of Environmental Protection*, 2005 Me. 27.[1/]

Amici include fish conservation organizations and the sportfishing industry's primary trade association, all of whom have a direct interest in safeguarding the health of waters and fish populations in the United States. *Amici* are filing this brief to highlight the effects of FERC-licensed hydroelectric dams on the health of rivers and fish populations, and the role that section 401 of the Clean Water Act plays in protecting and restoring those valuable natural resources.

Amicus Trout Unlimited ("TU") is a not-for-profit organization whose mission is to preserve, restore and protect North America's trout and salmon fisheries and their watersheds. TU has 145,000 members in the United States organized into more than 450 local chapters. *Amicus* the Atlantic Salmon Federation ("ASF") is an international not-for-profit organization whose mission is to promote the conservation of wild Atlantic salmon. ASF's network of seven regional councils represents more than 150 organizations and 40,000 volunteers. *Amicus* the Federation of Fly Fishers, Inc. ("FFF") is a not-for-profit organization

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[1] Pursuant to Rule 37.6 of this Court, *amici* represent that counsel for *amici* authored this brief in its entirety and that no person or entity other than *amici* and their representatives made any monetary contribution to the preparation or submission of this brief. Counsel for respondent and intervenors have filed letters with the Clerk consenting to the filing of this brief. Counsel for petitioner has consented to the filing of this brief, and a letter reflecting that consent has been submitted to the Clerk.

whose mission is conserving, restoring and educating through fly fishing. FFF has as one of its purposes the protection and enhancement of river ecosystems. FFF has over 400 chapters and 13,000 individual members.

Amici California Trout ("CalTrout"), Oregon Trout, and Washington Trout are not-for-profit conservation organizations dedicated to protecting and restoring populations of resident trout, steelhead, Pacific salmon, and the rivers in which they live, in their respective states. Collectively, these organizations have over 9,000 individual members and more than fifty affiliated angling clubs.

The Izaak Walton League of America ("IWL") is a national conservation organization with 50,000 members. Its mission includes to conserve, maintain, protect and restore the soil, forest, water, and other natural resources of the United States. Members of the Izaak Walton League fish in rivers affected by FERC-licensed hydroelectric dams.

TU, ASF, FFF, CalTrout, Oregon Trout, IWL and Washington Trout have collectively participated in dozens of Federal Energy Regulatory Commission ("FERC") licensing and relicensing[2/] proceedings for hydroelectric dams with the goal of protecting and restoring fish populations and river health. All of these a*mici* have members who fish for trout, salmon, and other fish in rivers affected by FERC-licensed hydroelectric dams.

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[2] *Amici* use the terms "licensing" and "relicensing" in this brief. Licensing generally refers to all FERC proceedings to license hydropower projects, whether new projects or existing projects. Relicensing is the more specific term, referring to proceedings for new licenses for existing facilities, which owners of such facilities must undergo periodically under the Federal Power Act ("FPA").

The American Sportfishing Association ("ASA") is the sportfishing industry's trade association. ASA's members are a variety of entities whose products, services or activities are related to sportfishing, including manufacturers, resource managers, conservation groups, the media, and those involved in the sale and distribution of fishing tackle and other sportfishing products. ASA safeguards and promotes the enduring social, economic, and conservation values of sportfishing and has members in all fifty states. ASA's mission includes ensuring healthy and sustainable fisheries, advocating for the interests of our members and the country's over 44 million anglers, and maintaining and enhancing the growth of the sportfishing industry. The interests of ASA and its members are directly affected by the health of fisheries in rivers below FERC-licensed hydroelectric dams.

SUMMARY OF ARGUMENT

Hydroelectric dams cause profound damage to fish populations and to the health of rivers. Hydroelectric dams have been responsible for the destruction of numerous runs of salmon and other migratory fish species on both coasts, and have impaired populations of resident fish as well. This brief explains the numerous mechanisms by which such dams impair water quality, damage rivers, and ultimately harm fish populations. Many of the adverse effects of hydroelectric dams also cause violations of water quality standards that states establish and administer under section 303 of the Clean Water Act ("CWA" or "the Act"), 33 U.S.C. § 1313.

The certification authority that Congress granted to the states in section 401 of the Act, 33 U.S.C. § 1341, represents the principal means by which states defend the integrity of their waters from the damaging effects of FERC-licensed hydroelectric dams and fulfill their role under the Act to achieve water quality standards in rivers affected by those dams. States have used their section 401 authority in FERC hydroelectric licensings to protect and restore water quality and the health of numerous fish populations around the country for decades.

Petitioner's argument would effectively eliminate section 401 certification authority in FERC hydroelectric relicensings, leaving states with no recourse to address the serious violations of water quality standards caused by FERC-licensed dams. This argument is contrary to the language, structure, and intent of the CWA. Accepting petitioner's argument and reversing the judgment below would also jeopardize the future of many fish populations across the Nation in rivers with FERC-licensed dams.

ARGUMENT

I

HYDROELECTRIC DAMS AND THEIR DISCHARGES DAMAGE THE INTEGRITY OF THE NATION'S WATERS WHILE HARMING NUMEROUS FISH POPULATIONS.

The purposes of this brief are to describe the impact of hydroelectric dams on water quality, fish populations, and rivers, and describe the critical role that section 401 certifications of hydroelectric licenses play in protecting and restoring fish populations. This brief will not discuss the legal reasons why discharges from FERC-licensed hydroelectric dams require certification under section 401.

However, petitioner's argument that the State of Maine's authority under section 401 does not extend to its hydroelectric dams has severe implications for water quality and the health of fish populations in the Nation. The essence of petitioner's argument is that an existing hydroelectric dam does not cause any discharge because it does not add anything new into the river. On the contrary, hydroelectric dams damage water quality and the overall health of the rivers that they dam, and often discharge water that is profoundly different (or new in character) than water that would flow in the river naturally without the dam in place. If accepted, petitioner's argument would also have extremely broad practical ramifications, given that "[FERC] currently regulates over 1,600 hydroelectric projects at over 2,000 dams pursuant to Part I of the Federal Power Act." FERC, *Report On Hydroelectric Licensing Policies, Procedures, & Regulations, Comprehensive Review & Recommendations*

Pursuant to Section 603 of the Energy Act of 2000 at 7 (May 2001) (hereinafter "FERC 603 Report").[3/]

A. Hydroelectric Dams Have Numerous Adverse Effects on Fish Habitat, Water Quality, and the Health of Rivers and Streams.

It is well accepted that hydroelectric dams, including FERC-licensed dams, have done considerable damage to the Nation's rivers and their fish populations. *See, e.g.*, *American Rivers v. FERC*, 372 F.3d 413, 416-17 (D.C. Cir. 2004) ("It is not disputed that hydropower projects have contributed to declining populations of anadromous fish -- namely, salmon and steelhead trout species -- in the Snake River and the Columbia River basin.") (citations omitted); National Research Council Committee on Atlantic Salmon in Maine, *Atlantic Salmon in Maine* 70 (2004) (noting "[d]ams are a major cause of salmon declines worldwide") (hereinafter "*Atlantic Salmon in Maine*"); L. Poff & D. Hart, *How Dams Vary and Why it Matters for the Emerging Science of Dam Removal*, 52 BioScience 659, 659-60 (2002) (hereinafter "*How Dams Vary*"). As petitioner expressly admits, the dams at issue in this case are no exception. *See* Brief for Petitioner at 4.

1. Elimination of River Habitat.

Every hydroelectric dam that creates an impoundment also destroys natural river habitat. *See Atlantic Salmon in Maine* at 70; H. John Heinz Center, *Dam Removal Science and Decisionmaking* 137-38 (2002) (hereinafter "*Dam*

[3] *Available at* <http://www.ferc.gov/legal/maj-ord-reg/land-docs/ortc_final.pdf> (last visited Dec. 28, 2005). A FERC "project" includes all dams, conveyances, facilities, and infrastructure or other features under license.

Removal Science and Decisionmaking"); National Research Council Committee on Protection and Management of Pacific Northwest Anadromous Salmonids, *Upstream: Salmon and Society in the Pacific Northwest* 9-10, 231 (1996) (hereinafter "*Upstream: Salmon and Society in the Pacific Northwest*"). When a dam impounds a river, the river's features such as riffles, swiftly flowing water, rapids, and pools disappear beneath the impoundment's deep, slow-moving water. The water body becomes an artificial lake and ceases to be a natural river. This transforms the ecology of the river by substituting a biological community more tolerant of the new, lake-like conditions than the river's native biological community. *See Dam Removal Science and Decisionmaking* at 137-38; *see also Udall v. FPC*, 387 U.S. 428, 440 (1967) ("The ecology of a river is different from the ecology of a reservoir built behind a dam.") (requiring review of alternatives during licensing decision for new project); California Energy Commission, *Staff Report, California Hydropower System: Energy and Environment, Appendix D, 2003 Environmental Report*, D-15 (Oct. 2003) ("Dams and impoundments, including hydropower and multiuse dams, have led to the loss of 90 percent of the historic salmonid habitat in the Sierra Nevada.").[4/]

2. Blocking Migration.

All dams, including hydroelectric dams, create a migration barrier for fish, which is particularly damaging to fish attempting to migrate upstream from the ocean to spawn in freshwater rivers. *See, e.g., Upstream: Salmon and Society in the Pacific Northwest* at 226 ("Dams have been constructed across the migration routes of most Pacific Northwest salmon runs."). Many dams create completely

[4] *Available at* <http://www.energy.ca.gov/reports/2003-10-30_100-03-018.PDF> (last visited Dec. 15, 2005).

insurmountable barriers to upstream migration: "[t]he effect of dams without fish-passage facilities on salmon is clear: the upstream habitat is lost." *Id*. at 231. Blocked fish passage is one of the most prevalent impacts of hydroelectric dams. *See* FERC, Division of Hydropower Administration and Compliance, Office of Energy Projects, *Evaluation of Mitigation Effectiveness At Hydro Power Projects: Fish Passage* 1 (2004).[5/]

Although the most obvious barrier is for fish migrating upstream, hydroelectric dams also obstruct fish attempting to migrate downstream. The two most common ways for fish to migrate downstream past a hydroelectric dam are (1) with the flow of water moving through turbines and (2) with flows spilling over the top of the dam. Passing through turbines causes an extremely high level of mortality for migrating fish. *National Wildlife Federation v. NMFS*, 422 F.3d 782, 789 (9th Cir. 2005) (describing downstream passage options and concluding " . . . passage through turbines unquestionably causes the highest mortality rate"). Passing over the top of the dam is considered less damaging than passing through a turbine, but if not managed very carefully can also harm fish. *Id*. Even if fish survive passage over a dam or through a turbine, subsequent mortality rates are still high because either route disorients the fish and makes them very vulnerable to predators. *See* California Energy Commission, *Staff Report, Roadmap For PEIR Research on Fish Passage at California Hydropower Facilities* 9 (Sept. 2005) (citing literature).[6/] Passing through a turbine or over a

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[5] *Available at* <http://www.ferc.gov/EventCalendar/Files/20041018094218 -fish-pass-final-report.pdf> (last visited Dec. 15, 2005).

[6] *Available at* <http://www.energy.ca.gov/2005publications/CEC-500-2005-137/CEC-500-2005-137.PDF> (last visited Dec. 15, 2005).

dam is extremely stressful for fish and may produce other adverse effects including descaling, impingement, and bruising. *See Upstream: Salmon and Society in the Pacific Northwest* at 232 (citing literature).

Slow-moving water in impoundments also impedes downstream migration. Species of fish that move downstream when they are juveniles, most notably Atlantic and Pacific salmon that migrate to the ocean, have evolved to do so with natural river currents to conserve energy, and often have adapted to move downstream during periods of high water. The slow water in dammed impoundments requires such fish to expend far greater energy swimming downstream than an undammed river would. *See Atlantic Salmon in Maine* at 70; *Northwest Resource Info. Ctr. v. Northwest Power Planning Council*, 35 F.3d 1371, 1376 (9th Cir. 1994), *cert. denied*, 516 U.S. 806 (1995) ("The river no longer has the strong, swift current needed to carry the smolts rapidly downstream and out to sea.") (quoting H.R. Rep. No. 96-976, pt. I, at 46 (1980), *reprinted in* 1980 U.S.C.C.A.N. 5989, 6044). The trip downstream can double in time because of hydroelectric dams. *Northwest Resource Info. Ctr.*, 35 F.3d at 1376. The extent to which hydroelectric dams obstruct migration is not limited to fish that migrate between freshwater rivers and the ocean – resident trout species are also affected. *See, e.g.*, Peter B. Moyle, *Inland Fishes of California* 51 (2002) ("Even blockage of within-river migrations may create problems.") (noting dams on McCloud River could be the cause of extirpation of bull trout in California) (hereinafter "*Inland Fishes of California*").

3. Alterations in Stream Flow Downstream of Dams.

A hydroelectric dam's essential purpose is to control river flow in order to generate electricity. Hydroelectric dams change water flows in the downstream portion of the river in a variety of ways that harm habitat and fish populations. *See, e.g.*, Jeffery F. Mount, *California Rivers and Streams: The Conflict Between Fluvial Process And Land Use* 329 (1995) (hereinafter "*California Rivers and Streams*") ("The timing of releases may also work against the migratory and spawning habits of anadromous fishes."); University of California, Davis, Center for Water and Wildland Resources, *Status of the Sierra Nevada: Summary of the Sierra Nevada Ecosystem Project Report, Final Report to Congress, Executive Summary* 8 (1996) (concluding that "[d]ams and diversions . . . have profoundly altered streamflow patterns (timing and amount of water) . . . , with significant impacts to aquatic biodiversity").[7/]

Many hydroelectric dams (including the dams involved in the present Presumpscot River case) run the river's water through a power canal or tunnel that bypasses the actual river channel, depriving that portion of the river of the water flows it would naturally receive. The portion of the natural river channel that is bypassed, often called the "bypass reach," can be a few hundred yards or many miles long. *See Alcoa Power Generating Co.*, 110 F.E.R.C. ¶ 61,056 (2005) (relicensing of multi-dam project, one of which created a bypass reach of 9.1 miles). Except during periods of very high flow when water goes over the top of the dam, the bypass reach receives only a fraction of normal flows. *See, e.g.*, *Lower Valley Energy, Inc.*, 92 F.E.R.C. ¶ 62,222, 64,322

[7] *Available at* <http://ceres.ca.gov/snep/pubs/es.html> (last visited Dec. 15, 2005).

(2000) (bypass reach for project on Strawberry Creek in Wyoming largely devoid of water approximately 200 days a year); *S.D. Warren Co.*, 58 F.E.R.C. ¶ 62,006, 63,007-09 (1991) (ordering minimum flows in 6,700 foot bypass reach of the Eel Weir project on the Presumpscot River that had previously received minimal leakage flows from the dam). Low flows in the bypass reach severely limit or destroy the river's ability to serve as habitat for fish and other aquatic life. *See, e.g.*, *New York State Gas & Electric Corp.*, 57 F.E.R.C. ¶ 62,138, 63,205-06 (1996) (project previously had eliminated all flows to .8 mile stretch of river causing an absence of all aquatic life); *Midwest Hydraulic Co.*, 79 F.E.R.C. ¶ 61,101, 64,286 (1997) (relicensing of project that had previously dewatered three miles of river bed).

Many hydroelectric dams alter the timing of the release of stored water to generate electricity when demand and prices are highest and thereby maximize the value of generation. *See How Dams Vary* at 660, 661; R.M. Cushman, *Review of the Effects of Rapidly Varying Flows Downstream from Hydroelectric Facilities*, 5 North American Journal of Fisheries Management 330, 330 (1985) (hereinafter "*Effects of Rapidly Varying Flows*"). This pattern of generation is most commonly referred to as "peaking" generation. It produces extreme fluctuations in flows that are dramatically different from the natural flow patterns to which native aquatic organisms have adapted. *See, e.g.*, *How Dams Vary* at 660; *Dam Removal Science and Decisionmaking* at 107; *Effects of Rapidly Varying Flows* at 330-31.

Peaking generation transforms the river on a daily basis. The river flows at unnaturally low levels while the turbines are off, suddenly surges to unnaturally high levels when the turbines go online, and then quickly recedes again when they are turned off. These rapid and frequent fluctuations impair the ecological health of the river. The documented effects of peaking flows include the following: death and injury to aquatic organisms when they are buffeted by high flows or stranded when flows drop and the river is rapidly dewatered; impairment of rearing habitat for young fish and other species; disruption of the natural life-cycles of many species; and replacement of species specialized to rivers and streams by other species more tolerant of the flow fluctuations. N.L. Poff *et al.*, *The Natural Flow Regime*, 47 BioScience 769, 777 (1997) (citing literature); *Effects of Rapidly Varying Flows* at 331-335 (discussing mechanics of how rapid flow changes affect aquatic life and citing extensive literature).

4. Temperature Changes.

Hydroelectric dams may discharge unnaturally warm or cold water. When a dam creates a shallow impoundment, it unnaturally raises water temperatures in the impoundment because the water slows down and is exposed longer to the sun's warming rays. When a dam converts a river into a deep lake, the water can become "stratified," meaning that the slow moving water near the surface is heated by the sun and becomes unnaturally warm, while deep water becomes unnaturally cold. If the dam discharges water from near the surface, the river downstream will be warmer than it should be naturally; if the dam releases water from deeper in the reservoir, the river will be unnaturally cold. *See Dam Removal Science and Decisionmaking* at 127-28; *How Dams Vary* at 660. In general, the discharge of warmer-than-natural water can impair native cold- and cool-water species, while the discharge of unnaturally cold water can impair native warm-water species. *Id.*; *see also* J. Stanford *et al.*, *The Status of Freshwater Habitats, in* R. Williams (ed.), *Return to the River* 214 (2006).

Unnatural temperature alterations can have a variety of effects on fish. For trout and salmon, increased temperature may adversely influence spawning behavior, delay upstream migration, decrease growth, and indeed cause death. *Inland Fishes of California* at 255; *id*. at 252 ("In some regulated streams, a small change in temperature regime can result in a major change in fish fauna.") (describing effects of FERC-licensed project on the North Fork Feather River). "Thermal alterations potentially affect the survival and growth of virtually *every* stage of the freshwater life cycle." *Upstream: Salmon and Society in the Pacific Northwest* at 192 (emphasis added).

5. Dissolved oxygen and other changes in the chemical composition of the river's water.

A hydroelectric dam can alter the chemical composition of a river's water in a number of ways. For example, "[m]any hydropower projects are unable to meet state water quality standards for [dissolved oxygen]." Mark J. Peterson *et al.*, *Regulatory Approaches for Addressing Dissolved Oxygen Concerns at Hydropower Facilities iv* (2003) (prepared for U.S. Department of Energy).[8/] Hydroelectric dams, especially those with deep impoundments, often discharge water with artificially reduced levels of dissolved oxygen, in part because water deep in a reservoir does not mix and interact with air like water flowing down a river. *See, e.g.*, *Dam Removal Science and Decisionmaking* at 127 (deep water in impoundments may be oxygen-poor and even anaerobic); *How Dams Vary* at 660. The discharge of water with little or no dissolved oxygen has an immediate impact on aquatic organisms, which of course rely on dissolved oxygen in water to breathe. *See, e.g.,* C. Coutant & R.

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[8] *Available at* <http://hydropower.id.doe.gov/turbines/pdfs/doeid-11071.pdf> (last visited Dec. 18, 2005).

Whitney, *Hydroelectric System Development: Effects on Juvenile and Adult Migration*, *in* R. Williams (ed.), *Return to the River* 249, 265 (2006) (noting survival of salmon eggs depends on suitable oxygen content).

Although the preceding discussion sets forth the most prevalent and harmful effects of hydroelectric dams on water quality and fish habitat, such dams cause a variety of other adverse effects, including the trapping of all of a river's sediment, the collection and concentration of nutrient pollution, blooms of plankton and algae, and the production of high concentrations of certain dissolved gasses. *California Rivers and Streams* at 316-20; *Dam Removal Science and Decisionmaking* at 126-30; *Portland General Electric Co.*, 111 F.E.R.C. ¶ 61,450, *slip op.* at 85-97 (2005) (section 401 certification in multi-dam relicensing addressing a variety of water quality problems caused by dams).

B. The Impact of Hydroelectric Dams on Rivers and Fish Can Be Catastrophic.

The damage that hydroelectric dams have done to the Nation's fish populations has not escaped the Court's notice. "The destruction of anadromous fish in our western waters is so notorious that we cannot believe that Congress through the [Federal Power Act] authorized their ultimate demise." *Udall*, 387 U.S. at 437-38 (citations and references omitted). Although healthy fish communities exist below some hydroelectric dams, the overall effect of these dams on native fish populations has been destructive and, in some cases, catastrophic.

The rivers of New England, including the Presumpscot, are good examples. Hundreds of thousands of Atlantic salmon once returned from the ocean to spawn in New

England's rivers from the Connecticut River to the Canadian border and sustained robust recreational and commercial fisheries. *See* U.S. Fish and Wildlife Service & National Marine Fisheries Service, *Biological Report on the Status of Atlantic Salmon* §§ 4.1.1, 4.1.2 (1999).[9/] When the era of dam building began in the 19th century, salmon populations began disappearing from these rivers, until they were a tiny fraction of historic numbers. *Id.*; *see also Atlantic Salmon in Maine* at 71-74 (listing 19 New England rivers where dam building was followed by significant drops in salmon populations). The Presumpscot River shared this fate: before it was dammed, it hosted healthy runs of Atlantic salmon and other anadromous fish, and the building of dams on the river produced a precipitous collapse of those runs. *See Atlantic Salmon in Maine* at 73; *S.D. Warren Co.*, 58 F.E.R.C. ¶ at 63,009.

Hydroelectric dams have also played a leading role in the steep decline of Pacific salmon populations. Salmon populations in the Columbia Basin have been decimated since the extensive damming of the river. Prior to the dam building era, more than six million – and perhaps as many as sixteen million – salmon swam up the Columbia River during their annual migration from the sea. *Upstream: Salmon and Society in the Pacific Northwest* at 90. Current populations in the basin are estimated to be approximately one-eighth of historical abundance. *Id*. The Columbia River federal hydroelectric system causes about eighty percent of the annual loss of salmon from their once historically robust population numbers in the basin. *Northwest Resource Info. Ctr. v. Northwest Power Planning Council*, 35 F.3d 1371, 1376 (9th Cir. 1994). Construction of dams has utterly eliminated salmon from thirty one percent of their historical

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[9] *Available at* <http://library.fws.gov/salmon/index.html> (last visited Dec. 19, 2005).

habitat (measured in stream miles) in the Columbia Basin. *Upstream: Salmon and Society in the Pacific Northwest* at 63.

Farther south, the picture is equally bleak for salmon. On the Klamath River in Oregon and California, FERC-hydroelectric dams have eliminated salmon and steelhead from approximately 600 miles of historical habitat since 1918. John B. Hamilton *et al.*, *Distribution of Anadromous Fishes in the Upper Klamath River Watershed Prior to Hydropower Dams—A Synthesis of the Historical Evidence*, 3 Fisheries 4, at 10-11 (Apr. 2005); *see also Inland Fishes of California* at 50. Hydroelectric dams have also proliferated in California. For example, "[h]ydro projects are installed on *all but one* of the Sierra Nevada's major river systems." California Energy Commission ("CEC"), *Environmental Performance Report of California's Electric Generation Facilities: A Report to the State Legislature* 32 (July 2001) (emphasis added).[10/] In California, the widespread building of hydroelectric dams has caused widespread ecological damage. The CEC has compared the effects of different electrical generation sources upon the state's biological resources and concluded that the effects from hydroelectric power are greater than those from any other source. *Id*. at 31-44 (comparing sources of power generation and discussing substantial impacts of hydropower).

[10] *Available at* <http://www.energy.ca/gpv/reports/2001-11-20_700-01-001.PDF> (last visited Dec. 15, 2005).

II
HYDROELECTRIC DAMS ALSO CAUSE VIOLATIONS OF WATER QUALITY STANDARDS, AND WITHOUT SECTION 401 AUTHORITY OVER FERC-LICENSED DAMS, STATES WILL BE UNABLE TO ADDRESS THESE VIOLATIONS.

The various impacts of hydroelectric dams discussed above not only damage fish populations; they also violate state water quality standards promulgated under section 303 of the CWA. *See* 33 U.S.C. § 1313. Elimination of section 401 authority will make it more difficult or even impossible for states to achieve these standards and to achieve the overall goals of the Act.[11]

Among the explicit goals of the Act is to achieve (by 1983) "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." Clean Water Act section 101, 33 U.S.C. § 1251(a)(2). As the Court discussed in *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 714 (1994) (hereinafter "*Jefferson County PUD*"), one of the primary mechanisms established by the CWA to achieve this goal is the requirement that states promulgate and implement water quality standards applicable to every water body in the state.

The biological, physical, and chemical effects of hydroelectric dams can cause violations of the provisions of most states' water quality standards. As the *Jefferson County PUD* opinion described in detail, state water quality standards are made up of designated uses that specific

[11] Under certain circumstances, Indian Tribes also have section 401 certification authority. *See* Clean Water Act section 518, 33 U.S.C. § 1377(e).

segments of water bodies must support, and criteria (both numeric and narrative) for specific forms of pollution applicable to each designated use. *See Jefferson County PUD*, 511 U.S. at 714. The designated uses usually include requirements that the water be usable for activities such as swimming, fishing, and water supply, and also can include requirements that particular water bodies be usable as habitat for certain categories of fish and other aquatic life. *Id*. at 714, 716. States must strive to achieve full compliance with all aspects of their water quality standards. *See* 33 U.S.C. §1313(d); *Jefferson County PUD,* 511 U.S. at 715.

The Court explicitly held in *Jefferson County PUD* that ensuring compliance with state water quality standards is "a proper function of the § 401 certification," *id*. at 712-13, and that a state's section 401 certification may require compliance with "both the designated uses and the water quality criteria of the state standards." *Id.* at 715; *see also id.* at 716. The Court ultimately held that the state of Washington could use its section 401 authority to ensure compliance with use designations of the Dosewallips River as habitat for salmon and include certification terms requiring the release of specific flows from the dam to protect that designated use. *See id*. at 714-15.

The Court was correct to note that Washington's standards are "typical" in their use designation and criteria. *Jefferson County PUD*, 511 U.S. at 716 ("Washington's Class AA water quality standards are typical in that they contain several open-ended criteria which, like the use designation of the river as a fishery, must be translated into specific limitations for individual projects."). Most states have fisheries-related designations and criteria in their standards, and those aspects of their standards can be violated by the numerous effects of hydroelectric dams discussed in Section I of this brief.[12/] Numeric criteria for specific pollutants do not receive more weight than use designations and criteria, and states must achieve both. *See id*. at 715.

Maine's water quality standards require the state to classify all of its waters into categories reflecting differing levels of designated uses. The state classifies rivers in four classes from Class AA (the highest quality) down to Class C. *See* 38 Me. Rev. Stat. § 465 (2005). All of the classes have designated uses, which for each class includes fishing and "habitat for fish and other aquatic life." *Id*. Each classification also includes an aquatic life standard, which in the case of the two highest categories, requires that "[t]he aquatic life content . . . shall be as naturally occurs." *Id*.

12/ *See, e.g.*, 5 Colo. Code Reg. 1002-31.13(1)(c) (2005) (establishing four aquatic life use designations including two for "waters capable of sustaining a wide variety of [cold/warm] water biota"); Mich. Admin. Code R. 323.1100 (6)-(9) (2005) (designated uses require protection of certain waters as trout fisheries and of others as migratory salmonid habitat); Minn. R. § 7050.0222 (2005) (water's aquatic life and recreation use designation must be "such as to permit the propagation and maintenance of a healthy community of cold water sport or commercial fish and associated aquatic life, and their habitats"); N.H. Admin. Code R. [Env-Ws] 1703.19 (2005) (requiring surface waters to support community of aquatic organisms comparable to that of natural habitats, and that differences with naturally occurring conditions shall be limited); N.J. Admin. Code 7:9B1.12(a)-(g) (establishing six aquatic life use designations, including waters that must be suitable for "maintenance, migration, and propagation of natural and established biota"); Or. Admin. R. 340-041-0002 (2005) (defining uses and referencing specific basin designations where uses include "Core Cold-Water Habitat Use," "Salmon and Steelhead Spawning Use," and "Salmon and Trout Rearing and Migration Use"); 25 Pa. Code § 93.3 (2005) (establishes four aquatic life uses including cold water fishes and migratory fishes); Wis. Admin. Code § N.R. 102.04(3)(a)-(e) (2005) (classification into five different aquatic life uses, including "cold water communities" and "warm water sport fish communities").

Most of the segments of the Presumpscot River that the discharges from petitioner's dams affect are class B waters, for which Maine's standards require that "[a]quatic life in the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community."[13/] *Id*. at § 465(3)(c). The health of indigenous aquatic species found in the Presumpscot River such as eels, salmon, shad, and herring requires fish passage, flows in the bypass reaches, and sufficient water quality. The state's section 401 certification of petitioner's hydroelectric dams addressed all of those issues, and without certification authority the state would have been powerless to ensure compliance with its water quality standards.

When a FERC-licensed hydroelectric dam causes or threatens violations of state water quality standards, a state like Maine has limited options with which to address those violations. Indeed, section 401 is the only tool Congress gave to states in this predicament, and it deliberately designed this authority to be a cornerstone of the CWA's statutory scheme. Accepting petitioner's argument and reversing the ruling below would strip states of one of the primary tools Congress gave them to meet their obligation to achieve water quality standards under the CWA.

[13] A short portion of the river below Dundee (the upstream most dam involved) is class A, and the river below Saccarapa (the downstream-most) is class C. *See* 38 Me. Rev. Stat. Ann. § 467(9).

III
SECTION 401 CERTIFICATION AUTHORITY HAS BEEN FREQUENTLY AND SUCCESSFULLY EMPLOYED BY THE STATES TO PROTECT AND RESTORE WATER QUALITY, FISH POPULATIONS AND RIVER HEALTH.

A. States Have Used Their Section 401 Authority Virtually Since the Clean Water Act's Passage.

Section 401 of the CWA provides that "[a]ny applicant for a Federal license or permit to conduct any activity . . . which may result in any discharge into the navigable waters" must obtain, from the state in which the discharge would occur, a certification that the activity will comply with a variety of provisions of the CWA, including state water quality standards promulgated under section 303 of the Act. 33 U.S.C. § 1341(a). Pursuant to the plain language of this provision, section 401 certifications have been a part of FERC licensings and relicensings of hydroelectric dams since the CWA was passed in 1972.

Review of reported FERC decisions shows that hydroelectric license applicants began seeking, and states began issuing, section 401 certifications of their dams very soon after passage of the CWA.[14/] Over time, application of the authority has become more sophisticated, and some states

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[14] *See, e.g.*, *Georgia Power Co.*, 9 F.E.R.C. ¶ 62,205, 63,238 n.3 (1979); *Indiana & Michigan Electric Co.*, 58 F.P.C. 2,771, 2,772 (1977); *Brown Company*, 59 F.P.C. 395, 396 (1977); *Potomac Edison Co.*, 56 F.P.C. 3,462, 3,463 (1976); *Idaho Power Company*, 53 F.P.C. 1,004, 1,008 (1975); *Nekoosa Edwards Paper Co.*, 52 F.P.C. 1,020, 1,021 (1974); *Sho-Me Power Corp.*, 53 F.P.C. 1999, 2000-01 (1975); *Puget Sound Power and Light Co.*, 53 F.P.C. 1657 (1975).

have included more conditions in their section 401 certifications designed to help assure compliance with specific state water quality standards. *See infra* at note 17 (citing numerous examples of section 401 certifications of FERC hydroelectric licenses). Although a number of court decisions over the last thirty years have fleshed out the precise contours of section 401, courts, FERC, and other agencies have never questioned the basic requirement of a section 401 certification for a FERC hydroelectric license. *See*, *e.g.*, *Jefferson County PUD*, 511 U.S. 700 (defining scope of water quality standards a state may seek to enforce in a section 401 certification); *see also American Rivers v. FERC*, 129 F.2d 99 (2d Cir. 1997) (FERC has no authority to reject certain section 401 certification terms); *City of Fredericksburg v. FERC*, 876 F.2d 1109 (4th Cir. 1989) (FERC cannot issue license for hydroelectric project if state denies certification). Petitioner's argument, if sustained, would reverse thirty years of accepted practice in FERC licensings of hydroelectric dams, and would eliminate a critical piece of a complex, interrelated, and well-honed regulatory scheme.

Contrary to claims by several *amici* on behalf of petitioner that section 401 certification conditions are so onerous that they jeopardize our energy security;[15/] *FERC itself*, after taking into account *not just* 401 certifications but *the entire* relicensing process has determined that relicensing of hydroelectric dams (which occurs once every thirty to fifty

[14] *See* Brief for Edison Electric Institute, The American Forest & Paper Ass'n, The American Public Power Ass'n, The National Hydropower Ass'n, and The Utility Water Act Group as *Amici Curiae* In Support Of Petitioner.

years) has led to negligible reductions in electric generating capacity.[16]

B. Recent Examples Show That States Use Section 401 Certification Authority to Protect and Restore Fish, Water Quality, and River Health.

In numerous FERC hydroelectric relicensings, states have used section 401 authority to require fish passage, changes in flow regime, and other changes in the operation of hydroelectric dams to ensure compliance with water quality standards and to protect and restore fish populations.[17] Many

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[16] *See* FERC 603 Report at 50 (finding that after relicensing "the average annual generation loss, attributed largely to increased flows to protect aquatic resources, was 1.59 percent, while average installed capacity increased 4.06 percent").

[17] *See, e.g.*, *American Rivers v. FERC*, 129 F.3d 99, 103-04 n.3 (2d Cir. 1997) (three licensings for projects in Vermont where the state issued section 401 certifications with conditions relating to fish passage and minimum flows below dams); *Alcoa Power Generating*, 110 F.E.R.C. ¶ 61,056 (2005) (settlement of multi-dam relicensing in which North Carolina issued section 401 certifications requiring minimum flows and periodic high flows in the Little Tennessee River and one of its principal tributaries in order to restore aquatic life and recreational uses); *FPL Energy Maine Hydro, LLC*, 106 F.E.R.C. ¶ 62,021 (2004) (as part of settlement of relicensing of Indian Pond dam on the Kennebec River in Maine, state issued section 401 certification with conditions related to minimum flows, fish habitat restoration, and fishing flows to protect existing use as brook trout and landlocked salmon fishery); *FPL Energy Maine Hydro LLC*, 101 F.E.R.C. ¶ 62,179 (2002) (settlement of licensing of dams on Rapid River in Maine in which Maine issued a section 401 certification designed to protect high quality brook trout and landlocked salmon fishery, and including conditions related to minimum flows, reservoir levels, and other aspects of fish habitat); *Avista Corp.*, 90 F.E.R.C. ¶ 61,167 (2000) (settlement of complex relicensing of large, multi-dam project in which Montana and Idaho issued section 401 certifications implementing the settlement and addressing a variety of fish habitat and water quality issues, including flows, fish passage, gas

of the *amici* who have submitted this brief have participated in relicensings where a state's use of its section 401 authority has protected or enhanced critical fish populations. In some cases, the state issued the certification over the hydroelectric dam owner's objection. In others, the states issued their section 401 certifications as part of comprehensive relicensing settlements, and consistent with terms parties developed collaboratively. *See supra* note 17.

In addition to the relicensings described in note 17, three examples are particularly illustrative. Trout Unlimited and other angling groups were active participants in FERC's relicensing of five dams on the Housatonic River in Connecticut. *See Northeast Generation Services*, 107 F.E.R.C. ¶ 61,305 (2004). In that case, two of the dams (Falls Village and Bulls Bridge) controlled virtually all of the remaining free-flowing sections of the river in Connecticut. *See id*. at 62,419-20. The Falls Village and Bulls Bridge

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saturation, and sediment); *Holyoke Water Power Co.*, 88 F.E.R.C. ¶ 61,186 (1999) (relicensing of Holyoke dam on the Connecticut River in Massachusetts in which the section 401 certification included conditions related to flows below dam, fish passage, and run-of-river operation to promote recovery of anadromous fish); *Central Maine Power*, 82 F.E.R.C. ¶ 61,187 (1998) (section 401 certification of relicensing of project on the Saco River in Maine incorporated comprehensive settlement of fish passage and flows issues for projects on that river, and included conditions related to minimum flows and fish passage in order to promote restoration of salmon, shad, and river herring); *Summit Hydropower*, 81 F.E.R.C. ¶ 62,089 (1997) (section 401 certification of relicensing of a project on the Quinebaug River in Connecticut requiring fish passage, minimum flows below the dam, and run-of-river operation); *Rochester Gas and Electric Corp.*, 81 F.E.R.C. ¶ 62,064 (1997) (section 401 certification of relicensing included 20 conditions, including run-of-river operation, restrictions on impoundment draw-down, and minimum flows); *Kennebec Water Power Company*, 81 F.E.R.C. ¶ 61,254 (1997) (section 401 certification of relicensing of Moosehead project on upper Kennebec River in Maine included conditions related to minimum flows, ramping rates, and flows during salmonid spawning).

hydroelectric dams were peaking dams and released large amounts of water during the day in the summer, which in turn caused a variety of negative biological effects. *See id*.

The dams caused such dramatic biological effects that the state had listed these sections of the river under section 303(d) of the CWA as impaired because they failed to meet aquatic life standards. *See* Connecticut Department of Environmental Protection, *2004 List of Connecticut Waterbodies Not Meeting Water Quality Standards* at B-26, B-27 (2004).[18/] The state issued a section 401 certification for the project that included a variety of conditions for all five dams, among which was the requirement that the Falls Village and Bulls Bridge hydroelectric dams cease peaking generation and be operated as "run-of-river," meaning that flows below the dams would closely resemble flows that would naturally occur in the river. *See Northeast Generation Services*, 107 F.E.R.C. at ¶ 62,441-42. The certification also provided for higher flows in the portions of the river bypassed by the power canals of both dams, in an effort to improve aquatic communities. *See id.* The certification sought to bring these waters into compliance with aquatic life standards and to improve the recreational fishery in the river. FERC had explicitly indicated that, absent the state's section 401 certification, FERC would have allowed continued peaking generation, with some modification, in the new license. *See id.* at 62,422.

On the west coast, several of the *amici* on this brief participated in the relicensing of Pacific Gas & Electric Company's hydroelectric dams on Hat Creek, in northeastern California. *See Pacific Gas & Electric Co.*, 101 F.E.R.C. ¶

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[18] *Available at* <http://www.dep.state.ct.us/wtr/wq/2004_303d_final.pdf> (last visited Dec. 9, 2005).

61,165 (2002). Hat Creek is unquestionably one of the state's most treasured and renowned wild trout recreational fisheries. *See id*. at 61,668 n.22. The project is comprised of two hydroelectric dams that operate in run-of-river mode, like the dams at issue in this case. *See id*. at 61,664.

California had given Hat Creek a use designation of "cold fresh water habitat." *See Water Quality Control Plan (Basin Plan) For The Central Valley Regional Water Quality Control Board, Central Valley Region, 4th ed., The Sacramento River Basin and San Joaquin River Basin* II-5.00 (Sept. 1999) (table of waters and designations, Table II-1).[19] "Cold fresh water habitat" means "uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates." *Id*. at II-2.00.

The state of California issued a section 401 certification for the Hat Creek Project that protects and enhances this vital fishery. Among other things, the certification requires continued run-of-river operation, development of an erosion and sediment control plan, continuous minimum instream flow below the dams, and development of a flow gauging program, fish monitoring program, and herbicide-use plan. *Id*. at 61,664-65. As a package, the section 401 certification requirements ensure protection and enhancement of Hat Creek's fish populations and compliance with the state's designated uses.

In Oregon, the Confederated Tribes of the Warm Springs Reservation and the state of Oregon both issued section 401

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[19] *Available at* <http://www.waterboards.ca.gov/centralvalley/available_documents/basin_plans/SacSJR.pdf> (last visited Dec. 15, 2005).

certifications for a relicensing of three hydroelectric dams on the Deschutes River. *See Portland General Electric Co.*, 111 F.E.R.C. ¶ 61,450 (2005). Both certifications were issued as part of a comprehensive settlement of a very complex relicensing, and were focused on protecting and restoring populations of anadromous salmon and steelhead, and resident trout. The terms and conditions of the state's certification addressed many of the habitat and water quality problems associated with the dams, including elevated water temperature, *id. slip op.* at 85-86; low levels of dissolved oxygen in waters discharged from the dams, *id*. at 87-88; pH of waters discharged from the dams, *id.* at 88-90; ramping rates associated with changes in flows discharged from the dams, *id.* at 92; minimum streamflow levels, *id.* at 93; fish passage, *id.*; and levels of dissolved gases in water discharged from the dams, *id.* at 95. Many of these provisions serve the added purpose of addressing certain water quality impairments, which the state is also required to address pursuant to section 303(d) of the CWA. This certification demonstrates in considerable detail the close link between hydroelectric dam operations, the health of fisheries, and potential violations of state water quality standards. *Id.* at 85-86 (temperature), 87-88 (dissolved oxygen), 89 (pH), and 90-91 (phytoplankton growth).

All three of these examples, as well as the examples listed in note 17, *supra*, illustrate the proper functioning of section 401 in FERC hydroelectric relicensings: helping states achieve a variety of components of their water quality standards, particularly those related to the health of fish populations and the river's biological community generally.

CONCLUSION

In this case the State of Maine used section 401 as Congress intended and as other states have used it around the country for years – namely, to ensure that FERC-licensed hydroelectric dams comply with water quality standards, including fish-related designated uses. Without section 401 certification authority over FERC-licensed dams, states will be unable to meet their obligation under the CWA to achieve compliance with those standards in the thousands of water bodies affected by these dams. If this were to happen, our Nation's fish populations and rivers would suffer greatly.

Respectfully submitted,

LEON F. SZEPTYCKI, General Counsel
CHARLTON H. BONHAM, Senior Attorney
Trout Unlimited
1300 N. 17th St., Suite 500
Arlington VA 22209
(703) 522-0200

JAMES B. DOUGHERTY
Counsel of Record
709 Third St. SW
Washington, D.C. 20024
(202) 488-1140

Counsel for *Amici Curiae*

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