

# HIGHLIGHTS IN NORTH AMERICAN LITIGATION DURING THE TWENTIETH CENTURY ON ARTIFICIAL FLUORIDATION OF PUBLIC WATER SUPPLIES

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## I. INTRODUCTION\*\*\*

Fluoride is an ubiquitous substance in our environment. It is naturally present in public water supplies, bound with calcium, iron, magnesium, or other minerals, usually at a level of around 0.2-0.4 ppm. Except incidentally, this article will not address the natural

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\*\*\* The authors wish to express their gratitude to J. William Hirzy, Ph.D., Senior Vice President of the National Treasury Employees Union, Chapter 280, at the National Headquarters of the United States Environmental Protection Agency (EPA) for documentation concerning developments at EPA from 1986 through 1998, and also to Rt. Hon. Edward Baldwin, Earl of Bewdley, for his assistance in securing records of important debates on fluoridation in the British House of Lords.

presence of fluoride in drinking water, which is a distinct question. The focus of this article will be the artificial fluoridation of public water supplies which occurs when the fluoride content of drinking water is artificially adjusted from its natural level to a desired level of 0.9-1.2 ppm. This change is effected by adding sodium silico fluoride, hydrofluosilicic acid, or some such industrial waste product, which releases free fluoride ions into water consumed by human beings.<sup>1</sup>

The theory behind this practice, which now affects about 130 million people in the United States, is that the ingestion of fluoride will harden the surfaces of teeth and make them less susceptible to dental caries. The literature is extensive on whether this practice does or does not reduce tooth decay, and whether it is or is not safe.<sup>2</sup> The standard work, done under auspices of the American Dental Association (ADA) and the United States Public Health Service (USPHS) is the *Newburgh-Kingston Caries-Fluorine Study: Final Report*.<sup>3</sup> Published over forty years ago, it proudly concluded that artificial fluoridation of public water supplies dramatically reduces tooth decay in humans, at no risk to human health.<sup>4</sup> In language tinged with contemporary fanaticism, the *Final Report* announced, "The opposition stems from several sources, chiefly food faddists, cultists, chiropractors, misguided and misinformed persons who are ignorant of the scientific facts on the ingestion of water fluorides, and, strange as it may seem, even among a few uninformed physicians and dentists."<sup>5</sup>

From the beginning, this ostentatious pronouncement has set the tone of ADA and USPHS activists and others promoting this practice

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1. See GEORGE L. WALDBOTT, M.D. ET AL., FLUORIDATION: THE GREAT DILEMMA 47-54, 148-74 (1978) for a detailed discussion of the absorption of fluoride, mainly as free ions, into the soft tissues of the human body. On the other hand, when fluoride is naturally present in public water supplies, it is generally bound with calcium and other minerals and, in such form, it does not readily dissociate and so is more readily excreted. Experiments with trout indicate that fluoride in water so bound tends to be less toxic. See Joseph W. Angelovic et al., *Temperature and Fluorosis in Rainbow Trout*, 33 J. WATER POLLUTION CONTROL FED'N 371 (1961). Hence, the artificial presence of fluoride in drinking water should be considered separately from its natural presence, at least in connection with questions about whether or not fluoride in drinking water produces harmful side effects.

2. The most respected scientific works, published during the twentieth century in support of artificial fluoridation of public water supplies, are WORLD HEALTH ORGANIZATION, *FLUORIDES AND HUMAN HEALTH* (1970), and FRANK J. MCCLURE, U.S. DEP'T OF HEALTH, EDUCATION, AND WELFARE, *WATER FLUORIDATION: THE SEARCH AND THE VICTORY* (1970). The work of WALDBOTT ET AL., *supra* note 1, is a comprehensive and powerful rebuttal. Considerable research has been done since these classic treatises were published.

3. Herman E. Hilleboe et al., *Newburgh-Kingston Caries Fluorine Study: Final Report*, 52 J. AM. DENTAL ASS'N 290 (1956).

4. See *id.* at 313-14, 316-19 (1956).

5. *Id.* at 294.

in the face of growing opposition from eminent scientists and physicians. The ultimate merits of the issues in science and medicine aside, there has always been learned and respectable opposition to artificial fluoridation of public water supplies,<sup>6</sup> and all attempts to deny it can only be characterised as irresponsible.

A few preliminary questions need to be asked. The first is whether the natural or artificial level of fluoride in public water supplies really has any beneficial effect in reducing tooth decay. The main difficulty with the experimental runs at Newburgh and Kingston in New York and elsewhere is that tooth decay is enhanced or diminished by innumerable factors including dietary, socio-economic, environmental, hygienic, and many others. Thus, criticism was voiced, initially in a doctoral dissertation,<sup>7</sup> that there was no control for known and unknown variables and, consequently, the conclusions on the reduction of tooth decay associated with fluoridation were invalid.

Subsequent research, involving vastly more data and sophistication, has entirely upset the Newburgh-Kingston orthodoxy.<sup>8</sup> It has since been persuasively demonstrated that the lowest rates of tooth decay in children occur in areas where the fluoride level is about 0.2-0.4 ppm, which is the normal level in most parts of the world.<sup>9</sup> From all published studies on the question in Europe and North America, it has been shown that, while there is a strong positive relationship between dental mottling and the natural level of fluoride in drinking

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6. See, e.g., *Hearings on H.R. 2341 Before the House Comm. on Interstate and Foreign Commerce*, 83d Cong. 62-86 (1954) (statement of Frederick Exner, M.D.). In his time, George Waldbott, M.D., was the dean of physicians against fluoridation. His pioneering book, *A STRUGGLE WITH TITANS* (1965), is bound to be of great interest to scientific historians in future years. He was a founder of the International Society for Fluoride Research, a learned society of about five hundred scientists who specialize in the field, publishing a quarterly journal entitled *Fluoride*.

7. See Edward S. Groth III, *Two Issues of Science and Public Policy: Air Pollution Control in the San Francisco Bay Area and Fluoridation of Community Water Supplies* 146-462 (1973) (unpublished Ph.D. dissertation, Stanford University) (on file with University Microfilms in Ann Arbor, Michigan).

8. See, e.g., H. Kalsbeek & G.H.W. Verrips, *Dental Caries Prevalence and the Use of Fluorides in Different European Countries*, 69 J. DENTAL RES. 728 (1990); Rudolph Ziegelbecker, *WHO Data on Dental Caries and Natural Water Fluoride Levels*, 26 FLUORIDE 263 (1993) (setting forth impressive analyses of data published by the World Health Organization). Trends now evident in Newburgh and Kingston indicate no significant differences in tooth decay rates between the two cities, although dental mottling is somewhat higher in fluoridated Newburgh. See, e.g., Jayanth V. Kumer et al., *Trends in Dental Fluorosis and Dental Caries Prevalences in Newburgh and Kingston, NY*, 79 AM. J. PUB. HEALTH 565 (1989); Jayanth V. Kumer et al., *Changes in Dental Fluorosis and Dental Caries in Newburgh and Kingston, New York*, 88 AM. J. PUB. HEALTH 1866 (1998); Jayanth V. Kumer et al., *Recommendations for Fluoride Use in Children*, N.Y.S. DENTAL J., Feb. 1998, at 40.

9. See, e.g., Yoshitsugu Imai, *Relationship Between Fluoride Concentration in Drinking Water and Dental Caries in Japan*, 6 FLUORIDE 248 (1973).

water, there is no statistical relationship between the extent of tooth decay and the natural level of fluoride in drinking water.<sup>10</sup> In more recent years, it has been observed that tooth decay rates have decreased as fast in unfluoridated areas as in fluoridated areas.<sup>11</sup> From massive data gathered by the government of the United States, it has been revealed that there is no statistical relationship between rates of tooth decay in children and the extent or duration of artificial fluoridation of public water supplies.<sup>12</sup>

Another question is whether public officials of the United States have been honest in levelling with the American people about the potential harmful effects of artificially releasing fluoride into the environment. In this regard, some attention needs to be given to the seminal work of Dr. Alfred Taylor, a biochemist at the University of Texas. The facts have been written up by reputable scholars<sup>13</sup> and make up an important episode in scientific history.

In the early 1950s, Dr. Taylor undertook a series of preliminary experiments by which it appeared that cancer-prone mice consuming water treated with sodium fluoride had shorter life spans than mice drinking distilled water.<sup>14</sup> Because the mice in both the control and experimental groups ate chow containing measurable fluoride, probably as CaF, as he learned after his initial runs, Dr. Taylor replicated his earlier work, but used chow containing negligible fluoride. He ran twelve experiments using 645 cancer-prone mice. He found that, as measured for statistical significance, cancer-prone mice drinking water containing fluoride, introduced as NaF, had shorter life spans than mice drinking distilled water.<sup>15</sup> In 1954, the results of Dr. Taylor's reruns were published in a refereed journal.<sup>16</sup>

Dr. Taylor's work was published at a politically sensitive time, because the last stages of the much-boasted surveys at Newburgh and Kingston were underway. The obvious meaning of Dr. Taylor's results was that a possible danger to public health had been overlooked, and that widespread fluoridation should be delayed

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10. Rudolph Ziegelbecker, *Natürlicher Fluoridgehalt des Trinkwassers und Karies* [Natural Fluoridation of Drinking Water and Caries], 122 GWF WASSER/ABWASSER 495 (1981), translated in 14 FLUORIDE 123 (1981).

11. John Colquhoun, *Child Dental Health Differences in New Zealand*, 9 COMM. HEALTHSTUD. 85 (1987).

12. John Yiamouyiannis, *Water Fluoridation and Tooth Decay: Results from the 1986-1987 National Survey of U.S. Schoolchildren*, 23 FLUORIDE 55 (1990)

13. See, e.g., WALDBOTT ET AL., *supra* note 1, at 222-25.

14. See *id.* at 222.

15. See *id.* at 222-23.

16. See Alfred Taylor, *Sodium Fluoride in the Drinking Water of Mice*, 60 DENTAL Dig. 170 (1954).

until the situation had been clarified. However, the ADA and the USPHS had already endorsed and begun the drive to promote fluoridation.

The embarrassment, therefore, had to be addressed. In the *Final Report*, reference was made to Dr. Taylor's original tests two years after the positive results of his reruns had been peer-reviewed and published. Then it was said, contrary to the known state of world literature:

The reports by Alfred Taylor, a biochemist at the University of Texas, on the increased incidence of cancer in mice drinking fluoride-treated water have been shown to be unfounded, since the food that he was giving the mice had many times the fluoride content of the drinking water, and the food was supplied both to the control and experimental groups. Subsequent tests did not confirm the differences.<sup>17</sup>

Ever since, USPHS officials have insisted, contrary to known facts, that Dr. Taylor's reruns were never done and never published, and that no work supporting Taylor's results exists or has ever been published. For example, in a standard history of the National Institute of Dental Health, published thirty-five years after Dr. Taylor's work first appeared in a refereed journal, Ruth Roy Harris said, "Alfred Taylor, an investigator with a doctorate in biochemistry, indicated that he would not publish his findings because he was unable to confirm those results in a second experiment."<sup>18</sup> Harris added still another misrepresentation, also contrary to known facts, "A literature search of scientific journals failed to show any publication of this work by Taylor – an indication that it was not subjected to review by his peers."<sup>19</sup> The importance of Dr. Taylor's work is revealed by what USPHS officials have done to conceal it.

After his first study, Dr. Taylor and his wife, also a Ph.D. biochemist, published the results of yet another large-scale study, in which fluoride in water, introduced as NaF, was shown to induce growth in implanted tumors in mice.<sup>20</sup> Dr. Taylor's pioneering work has been confirmed and reconfirmed by a considerable multitude of laboratory studies done by world class scientists, all published in

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17. Hilleboe et al., *supra* note 4, at 313.

18. RUTH ROY HARRIS, DENTAL SCIENCE IN A NEW AGE, HISTORY OF THE NATIONAL INSTITUTE OF DENTAL RESEARCH 112 (1989).

19. *Id.* at 396 n.33.

20. See Alfred Taylor & Nell Carmichael Taylor, *Effect of Sodium Fluoride on Tumor Growth*, 119 PROC. OF SOC'Y FOR EXPERIMENTAL BIOLOGY AND MED. 252 (1965).

peer-reviewed journals.<sup>21</sup> Meanwhile, it has been held in some environmental litigation during the twentieth century that, if laboratory tests indicate the capacity of a certain substance to produce harmful side effects in laboratory animals, the same substance may also be presumed deleterious to man in the environment.<sup>22</sup>

The main inquiry of this article will be whether the several States have constitutional authority to impose artificial fluoridation of public water supplies. The question depends in part on scientific and medical facts. As we shall relate in detail, trial judges over the past twenty years have repeatedly found, after hearing experts, that fluoridation is injurious to public health. We proceed, first, to review the legal fundamentals.

## II. THE NATURE OF POLICE POWER

The first clause of Article I, Section 8 of the United States Constitution states that Congress shall have the power to "provide for the common Defence and general Welfare." James Madison showed that this provision was intended to define the objects of federal spending, not to confer a general legislative authority upon Congress, because, if this clause conferred such a general legislative

21. See, e.g., Irwin H. Herskowitz & Isabel L. Norton, *Increased Incidence of Melanotic Tumors in Two Strains of Drosophila Melanogaster Following Treatment with Sodium Fluoride*, 48 GENETICS 307 (1963); Chong Chang, *Effect of Fluoride on Nucleotides and Ribonucleic Acid in Germinating Corn Seedling Roots* 43 PLANT PHYSIOLOGY 669 (1968); Danuta Jachimczak & Bogumila Skotarczak, *The Effect of Fluorine and Lead Ions on the Chromosomes of Human Leucocytes in Vitro*, 19 GENETICA POLONICA 353 (1978); John Emsley et al., *An Unexpectedly Strong Hydrogen Bond: Ab Initio Calculations and Spectroscopic Studies of Amide-Fluoride Systems*, 103 J. AM. CHEM. SOC'Y 24 (1981); John Emsley et al., *The Uracil-Fluoride Interaction: Ab Initio Calculations including Solvation*, 8 J. CHEMICAL SOC'Y CHEMICAL COMMUN. 476 (1982); A.H. Mohamed & M.E. Chandler, *Cytological Effects of Sodium Fluoride on Mice*, 15 FLUORIDE 110 (1982); Toshio Imai et al., *The Effects of Fluoride on Cell Growth of Two Human Cell Lines and on DNA and Protein Synthesis in HeLa Cells*, 52 ACTA PHARMACOLOGICA ET TOXICOLOGICA 8 (1983); Takeki Tsutsui et al., *Cytotoxicity, Chromosome Aberrations and Unscheduled DNA Synthesis in Cultured Human Diploid Fibroblasts Induced by Sodium Fluoride*, 139 MUTATION RES. 193 (1984); Takeki Tsutsui et al., *Induction of Unscheduled DNA Synthesis in Cultured Human Oral Keratinocytes by Sodium Fluoride*, 140 MUTATION RES. 43 (1984); Takeki Tsutsui et al., *Sodium Fluoride-induced Morphological and Neoplastic Transformation, Chromosome Aberrations, Sister Chromatid Exchanges, and Unscheduled DNA Synthesis in Cultured Syrian Hamster Embryo Cells*, 44 CANCER RES. 938 (1984); Carol A. Jones et al., *Sodium Fluoride Promotes Morphological Transformation of Syrian Hamster Embryo Cells*, 9 CARCINOGENESIS 2279 (1988); Marilyn J. Aardema et al., *Sodium Fluoride-induced Chromosome Aberrations in Different Stages of the Cell Cycle: A Proposed Mechanism*, 223 MUTATION RES. 191 (1989); Takeki Tsutsui et al., *Cytotoxicity and Chromosome Aberrations in Normal Human Oral Keratinocytes Induced by Chemical Carcinogens: Comparison of Inter-Individual Variations*, 5 TOXICOLOGY IN VITRO 353 (1991).

22. See e.g., *Environmental Defense Fund v. Environmental Protection Agency*, 548 F.2d 998, 1006 (D.C. Cir. 1976).

authority, it would render the enumeration of specific legislative powers redundant and pointless.<sup>23</sup>

Madison's observation was important because he showed that, if Congress had a general legislative authority as such, it would be nothing other than a power to provide for the common defense and the general welfare. It would be a power, subject to the limitations inherent and implied in every republican form of government,<sup>24</sup> to enact only laws necessary and proper or, in other words, laws fairly proportioned to and consistent with the common defense and general welfare, in keeping with legal principle and legal tradition.<sup>25</sup> Alexander Hamilton made unmistakably clear that a bill of rights, including all essential privileges and immunities of a free people, is always implied, if not expressed, in every republican form of government.<sup>26</sup> And every republican form of government, as an outgrowth of the American Revolution, necessarily presupposes the essential truths of the Declaration of Independence, which begins, before all else, with a tribute to the "Laws of Nature and Nature's God."<sup>27</sup>

So it was that Justice Samuel Chase of the United States Supreme Court, one of the signers of the Declaration of Independence, thus expounded in a celebrated case the inherent limitations on general legislative authority under any republican form of government:

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23. See THE FEDERALIST NO. 41, at 276-77 (Clinton Rossiter ed., 1961). In reaching this conclusion, Madison applied the rule of construction from the common law that clauses dealing with the same general subject or question should be construed together, if possible, to give every distinct provision some useful purpose and to coalesce into a harmonious whole with the others. See THE FEDERALIST NO. 40, at 260 (Clinton Rossiter ed., 1961). The same idea is advanced in the 7th of the Kentucky Resolutions of 1798, authored by Thomas Jefferson. See 4 DEBATES ON THE FEDERAL CONSTITUTION 542 (Elliot ed., Lippencott & Co., Philadelphia) (2d ed. 1859).

24. James Madison emphasized that the government of the Union, like the government of every State, is a republican form of government which has its origin in the people and features distinctive of the American Revolution. See THE FEDERALIST NO. 39, at 240-42 (Clinton Rossiter ed., 1961). The first mature prototype of such a republican form of government, see the Virginia Bill of Rights and Constitution of 1776, reprinted in 9 Hening's Statutes at Large, at 109-19.

25. See THE FEDERALIST NO. 33, at 203-04 (Alexander Hamilton) (Clinton Rossiter ed., 1961); THE FEDERALIST NO. 44, at 285 (James Madison) (Clinton Rossiter ed., 1961). Both Hamilton and Madison agreed that the eighteenth clause of Article I, Section 8, of the United States Constitution, granting Congress the power to enact necessary and proper laws, would have been implied if it had not been expressed. Also, while it allows implied powers, it also imposes implied limits on powers of just legislation. The standard judicial definition of necessary and proper laws is found in *M'Colloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 421 (1819).

26. See THE FEDERALIST NO. 84, at 512-14 (Clinton Rossiter ed., 1961).

27. THE DECLARATION OF INDEPENDENCE para. 1 (U.S. 1776). Sir William Blackstone gave incomparable exposition to the meaning of natural law as the foundation of constitutional government in 1 COMMENTARIES ON THE LAWS OF ENGLAND 38-43 (1765) [hereinafter BLACKSTONE].

The nature and ends of legislative power will limit the exercise of it. This fundamental principle flows from the very nature of our free Republican governments, that no man should be compelled to do what the laws do not require; nor to refrain from acts which the laws permit. There are acts which the Federal, or State, Legislatures cannot do, without exceeding their authority. There are certain vital principles in our free Republican governments, which will determine and over-rule an apparent and flagrant abuse of legislative power; as to authorize manifest injustice by positive law; or to take away that security for personal liberty, or private property, for the protection whereof the government was established.<sup>28</sup>

There can be no serious dispute as to the nature of the original idea. In view of the transformations accomplished by the American Revolution, general legislative authority was understood to be the power of enacting necessary and proper laws to provide for the common defense and general welfare, in conformity with natural law and legal tradition. And this idea, fully justiciable, was imposed before the Fourteenth Amendment was ever thought of, by the so-called Guarantee Clause in of the United States Constitution, which demands that in and for every State of the Union there shall be a "Republican Form of Government."<sup>29</sup>

The term "police power" later appeared as a term of jurisprudence in antebellum litigation which arose under the Guarantee Clause, used to describe the legislative powers of the several States to enact regulations of domestic life.<sup>30</sup> The Guarantee Clause largely disappeared as a restraint upon the several States as a consequence of misunderstanding the interesting old case of *Luther v. Borden*<sup>31</sup> Many generations of judges and lawyers have been deeply confused about it.

In 1842, there was a civil war between two state governments in Rhode Island, each claiming to be lawful.<sup>32</sup> Both the majority and the dissent agreed that the court could not resolve this question<sup>33</sup>, which was said to be nonjusticiable, because of the enormous practical difficulties involved. Thus began the doctrine of political questions which says that a question is nonjusticiable and so cannot be judicially decided if, in the circumstances, a practical remedy

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28. *Calder v. Bull*, 3 U.S. (3 Dal.) 386, 388 (1798).

29. U.S. CONST. art IV, § 4.

30. See *Thurlow v. Massachusetts*, 46 U.S. (5 How.) 504, 582-83 (1847).

31. 48 U.S. (7 How.) 1 (1849).

32. See *id.* 34-38, 48-57.

33. See *id.* at 39-47, 51-58.

cannot be given by the courts, or if there are no objective legal standards upon which a judicial decision can be made, or if the question is plainly referred by fundamental law to the political organs of government or society.<sup>34</sup> Nothing could ever be so likely to injure the dignity or reputation of the bench than failure of judges to honor these inherent limits to their power.

But there was another important question in the case which most students have overlooked. This question was whether the charter government of Rhode Island, assumed legitimate, could impose martial law during the unrest which appears in retrospect to have been remarkably trivial. This question was decided on the merits.<sup>35</sup> The majority held that the charter government could impose martial law, but there was a strong dissent, mainly based on the Petition of Right.<sup>36</sup>

In any event, there has never been any reason for saying, as has sometimes been held,<sup>37</sup> that any constitutional question arising under the Guarantee Clause is per se nonjusticiable. And a number of courts have occasionally recognized the Guarantee Clause as an appropriate basis of judicial decision,<sup>38</sup> as clearly suggested by Justice Samuel Chase when John Adams was President. During the twentieth century, the Guarantee Clause has been a sleeping giant of the United States Constitution, yet there is no reason why, if the need becomes urgent in future years, the giant cannot be awakened and put to good use.

The Fourteenth Amendment followed the American Civil War and has since been the main basis in the United States Constitution for judicial decisions restraining the exercise of police power by the several States. There are some well-kept secrets about the Fourteenth Amendment, which are highly pertinent to the question of police power, and these may conceivably become more widely understood or even become legal orthodoxy in the twenty-first century.

In the *Slaughter House Cases*,<sup>39</sup> the majority spoke the dark language of police power and upheld a Louisiana statute which required all slaughtering of animals as food for consumption in and around New Orleans to be done in facilities maintained under the

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34. See *Baker v. Carr*, 369 U.S. 186, 208-37(1962).

35. See *Luther v. Borden*, 48 U.S. (7 How.) at 46, 58-88.

36. 3 Car. I, ch. 1 (1628).

37. See, e.g., *Taylor v. Beckham*, 178 U.S. 548, 578-79 (1900); *Pacific States Tel. & Tel. Co. v. Oregon*, 223 U.S. 118, 142-53 (1912).

38. See, e.g., *Harrington v. Plainview*, 6 N.W. 777 (Minn. 1880).

39. 83 U.S. (16 Wall.) 36 (1873).

auspices of a certain corporation.<sup>40</sup> The holding rests mainly on a notoriously unconvincing rationalization to accommodate an unwillingness to face the full impact of the Fourteenth Amendment.

The first well-kept secret about the Fourteenth Amendment is found in the four dissenting votes to the *Slaughter House Cases*, which rest mainly on the very capable and powerful opinions of Justice Stephen Field<sup>41</sup> and Justice Joseph Bradley.<sup>42</sup> Section 1 of the Fourteenth Amendment restrains the several States from abridging the privileges and immunities of citizens of the United States. Most certainly these dissenters were right in maintaining that this clause serves to incorporate all guarantees of civil liberty found in the United States Constitution as further restraints on the several States, including the First through Ninth Amendments.<sup>43</sup> And in light of legal tradition, they were right in maintaining that the Fourteenth Amendment, by incorporating the Ninth Amendment, imposes the old Statute of Monopolies<sup>44</sup> upon the several States.

Another well-kept secret about the Fourteenth Amendment, which may be unpleasant to some people yet ever so true, is that the article was never lawfully adopted,<sup>45</sup> mainly because it was proposed by a Congress which unlawfully excluded representatives and senators from ten States for having had the temerity of holding views not to the liking of an impassioned and factious majority.<sup>46</sup> Moreover, adoption was unlawful because ratification by those ten States, essential to adoption, was coerced by keeping them under martial law until they ratified,<sup>47</sup> contrary to principles already known and adjudicated to be unconstitutional.<sup>48</sup> Because time is a

40. See *id.* at 58-82.

41. See *id.* at 83-111.

42. See *id.* at 111-24.

43. It is impossible to attribute any other cogent meaning to this clause in light of *Corfield v. Coryell*, 6 F. Cas. 546 (C.C.E.D. Pa. 1823) (No. 3230), and *Barron v. Baltimore*, 32 U.S. (7 Pet.) 243 (1833).

44. See 21 Jac., ch. 3 (1623). The Statute of Monopolies expressly ordained that monopolies granted by the Crown were "contrary to the ancient and fundamental laws of the realm, and are utterly void." *Id.* at § 1. The statute created an express proviso allowing patents of invention for terms of four to fourteen years. See *id.* at § 6. Royal grants of monopoly had previously been declared unlawful in the *Case of Monopolies*, 11 Coke 84a (K.B. 1603).

45. This unhappy truth has been subject to protest from the most respectable quarters. See, e.g., *Dyett v. Turner*, 439 P.2d 266 (Utah 1968).

46. Such exclusion was unconstitutional for reasons then clearly understood and long since judicially settled. See, e.g., *Powell v. McCormick*, 395 U.S. 486 (1969).

47. The Reconstruction Act was passed over a veto based on constitutional grounds. See 14 Stat. 428 (1867). The unanswerable veto message of President Andrew Johnson is reprinted in, 1 DOCUMENTS OF AMERICAN HISTORY 481-85 (Henry Steele Commager ed., 9th ed. 1973).

48. Although the Reconstruction Act imposed martial law under circumstances disallowed in *Ex Parte Milligan*, 71 U.S. (4 Wall.) 2 (1866), the constitutional infraction was allowed by

wonderful solvent of truth, we may anticipate that in the twenty-first century the Fourteenth Amendment may well be stricken from the United States Constitution.

The final well-kept secret about the Fourteenth Amendment is this: if and when it is finally acknowledged that the Fourteenth Amendment was never lawfully adopted, we shall not be deprived of means, under the fundamental law of the Union, to restrain the several States from acts of invidious discrimination or other forms of injustice. The reason is that everything worthwhile so far done in the name of the Fourteenth Amendment, and much more besides, can also be done upon a more enlightened view of the American Revolution, in the name of the Guarantee Clause.<sup>49</sup> *E pluribus unum. Annuit coeptis novus ordo seclorum.*

### III. NATURAL LAW JURISPRUDENCE

Between now and the hopeful future of clearer vision, we can use principles common both to the Guarantee Clause or the Fourteenth Amendment as a constitutional restraint on the "police power" of the several States, and we may be guided by judicial decisions rendered under either provision. And for this purpose, especially as it relates to artificial fluoridation of public water supplies, it is important to understand what has been done right, what has been done wrong, and why there has consequently been both progress and deterioration in American jurisprudence.

We first need to understand what has been done wrong and learn from it. With this objective in mind, we need to pay attention to Justice Hugo Black. During his tenure on the United States Supreme Court, Justice Black managed to sow more confusion, yet with important kernels of truth and distinguished erudition, than almost any judicial figure in the world during the twentieth century. His mistakes have pronounced characteristics which are particularly instructive when viewed in retrospect.

His trademark position, stated in his famous dissent in *Adamson v. California*,<sup>50</sup> was that the Fourteenth Amendment incorporates the

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systematic evasion of the question by the judiciary. See generally *Texas v. White*, 74 U.S. (7 Wall.) 700 (1869); *Georgia v. Stanton*, 73 U.S. (6 Wall.) 50 (1868); *Ex Parte McCordle*, 73 U.S. (6 Wall.) 318 (1868); *Ex Parte Yerger*, 75 U.S. (8 Wall.) 85 (1868); *Mississippi v. Johnson*, 71 U.S. (4 Wall.) 475 (1867).

49. The possibilities for this development have already been considered in two articles by Arthur E. Bonfield, *Baker v. Carr: New Light on the Constitutional Guarantee of Republican Government*, 50 CAL. L. REV. 245 (1962) and *The Guarantee Clause of Article IV, Section 4: A Study in Constitutional Desuetude* 46 MINN. L. REV. 513 (1962).

50. 332 U.S. 46, 68-123 (1947).

Federal Bill of Rights, including the First through Eighth Amendments.<sup>51</sup> But, if the Fourteenth Amendment incorporates the Federal Bill of Rights, it necessarily also incorporates the Ninth Amendment which says that the enumeration of certain rights "shall not be construed to deny or disparage others retained by the people."<sup>52</sup> Why no mention of the Ninth Amendment?

Throughout his dissent, Justice Black fairly radiated hostility against the ancient and venerable idea of natural law,<sup>53</sup> which he plainly did not understand either as a force shaping legal tradition or as a category of jurisprudence.<sup>54</sup> He acted as if the Ninth Amendment did not exist, because this article of fundamental law, construed in light of constitutional history, cannot possibly exclude those "certain unalienable Rights" with which all human beings are "endowed by their Creator" under the "Laws of Nature and Nature's God."<sup>55</sup>

Justice Black carried his hostility to natural law even further in his majority opinion in *Ferguson v. Skrupa*.<sup>56</sup> At issue in that case was a Kansas statute prohibiting any person from engaging in the business of debt adjusting, except as incident to the authorized practice of law.<sup>57</sup> At the time, there was a venerable precedent which held that, under the 14th Amendment, no State has constitutional authority to prohibit a useful business which is not inherently immoral or dangerous to public welfare.<sup>58</sup> Black flippantly overruled this old

51. The historical evidence supporting this thesis is found in the appendix to Justice Black's opinion. See *id.* at 92-123.

52. This provision was intended to meet the objection of Alexander Hamilton in THE FEDERALIST NO. 84, at 513-14 (Clinton Rossiter ed., 1961), that an enumeration of rights was dangerous, because it might be used as a false pretext to claim power for seizing rights not mentioned. See the observations of James Madison in the United States House of Representatives on June 8, 1789, recorded in 1 ANNALS OF CONGRESS 439-40 (Gales & Seaton 1834).

53. See *Adamson v. California*, 332 U.S. at 79-80, 91.

54. Justice Black was plainly not aware of such distinguished works on natural law as HEINRICH A. ROMMEN, *DIE EWIGE WIEDERKEHR DES NATÜRRECHTS* (1936), translated as THE NATURAL LAW (Thomas R. Hanley trans., 1955). Hanley's introduction movingly relates how Rommen as a lawyer in Nazi Germany discovered the reality of natural law and was led to reject legal positivism in resisting Hitler's violations of human rights. See *id.* at xi-xxxviii.

55. THE DECLARATION OF INDEPENDENCE para. 1, 2 (U.S. 1776). This language obviously corresponds to those "certain inherent rights" which are mentioned in the first article of the Virginia Bill of Rights of 1776, reprinted in 9 Hening's Statutes at Large, at 109.

56. 372 U.S. 726 (1963).

57. See *id.* at 727.

58. See *Adams v. Tanner*, 244 U.S. 590 (1917). As with many other cases like it, this case turned on the clause of the Fourteenth Amendment which forbids any State from denying life, liberty, or property without due process of law. The clause is ultimately traceable to the 39th Article of the Magna Carta of King John. It was probably added to the Fourteenth Amendment to cure the unfortunate holding of the majority in *Satterlee v. Matthewson*, 27 U.S. (2 Pet.) 380

case with the remark, "Whether the legislature takes for its textbook Adam Smith, Herbert Spencer, Lord Keynes, or some other is no concern of ours."<sup>59</sup>

Black's attitude was founded upon one of the most unfortunate falsehoods ever to pollute American jurisprudence. He assumed, out of ignorance, that cases like *Lochner v. New York*,<sup>60</sup> were founded on political prejudice, not legal standards. In *Lochner*, the court held that a law limiting the right of bakers to contract for their hours of work was unconstitutional.<sup>61</sup> No reason was even suggested on the record why bakers should not enjoy such discretion, or why they needed the protection of the law, as might have been true if, say, it had been shown that the bakers are typically in an uneven bargaining position in dealing with their employers. If such a showing had been at least attempted, as might well have been easily done, the statute would certainly have been upheld.<sup>62</sup>

It is true that the freedom to contract, cited as the justification for holding the statute unconstitutional, came from natural law jurisprudence. But the theory was not woven out of thin air. It came from venerable and historic roots, ultimately the decision of Lord Mansfield in *Sommersett's Case*<sup>63</sup> which held that, because slavery runs against natural law, it could be sustained only by acts of Parliament, and all statutes allowing it had to be strictly construed so as to make a slave free the moment he set foot on the free soil of England.<sup>64</sup>

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(1829), and drew inspiration from cases such as *University of North Carolina v. Fox* 5 N.C. (1 Mur.) 83 (1805).

59. 372 U.S. at 732. This remark echoed of the thoughtless satyrm of Oliver Wendell Holmes in *Lochner v. New York*, 198 U.S. 45, 75 (1905) ("The Fourteenth Amendment does not enact Mr. Herbert Spencer's Social Statics"). Under this theory, we should be equally indifferent as to whether the legislature of a State were to take guidance from Maximilien de Robespierre, Vladimir Lenin, Adolf Hitler, Joseph Stalin, Mao Tse Tung, or Pol Pot.

60. 198 U.S. 45 (1905).

61. See *id.* at 64-65.

62. Pope Leo XIII issued the encyclical *Rerum Novarum* (1891), which was one of the greatest statements on natural law in history. He expounded rights of labor and the duty of governments to enact legislation protecting labor from unjust exploitation. It was on this basis that legislation protecting labor from unjust exploitation was repeatedly approved as constitutional in natural law jurisprudence, whenever a plausible justification of legislative judgment was made to appear on the record. See, e.g., *Bunting v. Oregon*, 243 U.S. 426 (1917); *Muller v. Oregon*, 208 U.S. 412 (1908); *Holden v. Hardy*, 169 U.S. 366 (1898).

63. 20 How. St. Tr. 1, 82 (K.B. 1771).

64. This principle originated in the policy of the common law which favored liberty, and thus nudged villeinage into extinction. See, e.g., *Pigg v. Caley*, Noy 27 (K.B. 1618). Strict construction of laws allowing slavery was adopted by judges of the old South, and many slaves were freed because of it. See, e.g., *Murray v. M'Carty*, 16 Va. (2 Mun.) 393 (1811). It was also applied by the circuit court of Missouri in granting Dred Scott and his family their freedom, and was the main basis of the dissent of Justice Benjamin Curtis in *Dred Scott v. Sandford*, 60 U.S. (19 How.) 391, 602-603 (1857).

This idea was, of course, adopted and expanded by the Thirteenth Amendment. It follows, by legal inference, that nobody in the United States may be denied a liberal right to earn a livelihood or to engage in business as he or she sees fit. Thus, it has been held under the Fourteenth Amendment that, unless a statute limiting the right of a citizen to contract freely can be plausibly justified, it is unconstitutional.<sup>65</sup> The idea does not embrace irresponsible freedom and it does not outlaw legislation to prevent unjust exploitation of labor or activity harmful to the public good. The right is confirmed by natural law and legal tradition and is suited to the circumstances of a free people. There has always been just cause to apply this notion with judicious caution,<sup>66</sup> but there never has been any reason to reject or overrule it altogether.<sup>67</sup>

Black took his extremism to the *ne plus ultra* in his bitter dissent in *Griswold v. Connecticut*.<sup>68</sup> Complaining that natural law is mysterious and uncertain and that the Ninth Amendment has only nominal but no substantive meaning, Black insisted that even a statute intruding into the sexual intimacy of husband and wife, disallowing them to be instructed by their physician on artificial methods of birth control, could not be struck down as unconstitutional.<sup>69</sup> Fortunately, his fellow justices had no trouble in understanding privacy as a liberty protected by fundamental law, and they declared the statute unconstitutional.<sup>70</sup>

65. See *Allgeyer v. Louisiana*, 165 U.S. 578 (1897).

66. So as to avoid unfortunate decisions like *Coppage v. Kansas*, 236 U.S. 1 (1915), which was simply a mistake. No apology can be offered for it in any school of thought.

67. *Nebbia v. New York*, 291 U.S. 502 (1934), is sometimes cited as the beginning of the end of natural law jurisprudence in the field of economic regulation, but the case is better understood as a just extension of *Munn v. Illinois*, 94 U.S. 113 (1877), in light of pressing economic circumstances not existing at the time of *Fairmont Creamery Co. v. Minnesota*, 274 U.S. 1 (1926). Likewise, *West Coast Hotel Co. v. Parrish*, 300 U.S. 379 (1937), is often cited as the definitive end of natural law jurisprudence in the field of economic regulation. Yet in *Parrish*, the majority disregarded the intended meaning of the Nineteenth Amendment as expounded in *Adkins v. Children's Hospital of the District of Columbia*, 261 U.S. 525, 552-53 (1923), and later revived in *Frontiero v. Richardson*, 411 U.S. 677, 686-88 (1977). *Parrish* allowed a kind of sex discrimination which would never be allowed today and may be considered virtually overruled.

68. 381 U.S. 479, 507-27 (1965).

69. See *id.* at 523-25.

70. See *id.* at 484-86 (penumbras of the Bill of Rights), 498-99 (the Ninth Amendment), 500-04 (due process of law under the Fourteenth Amendment). By acknowledging a constitutional right of privacy on the basis of natural law jurisprudence, the Court in no way committed itself to *Roe v. Wade*, 410 U.S. 113 (1973), which did not rest on natural law jurisprudence but rather overthrew the traditional protection of the unborn by both the common law and the civil law. See e.g., *Thulluson v. Woodford*, 4 Ves. Jr. 227, 321-22 (Ch. 1799); *Montreal Tramways v. Leveille*, [1933] 4 D. L. R. 337, 340-41 (Can.). Nor did the Court contradict the moral teaching of Pope Paul VI against artificial birth control in the encyclical *HUMANE VITAE* (1968). Natural

If Hugo Black condemned natural law because he did not understand it, the founding fathers of the United States did understand it, and they built a new constitutional order upon it. They knew that natural law is a timeless moral and physical order which enforces itself and can be discovered by natural reason.<sup>71</sup> They knew that it constrains governments no less than markets. They knew that, if its lofty commands were disobeyed, there would be misfortunes in public affairs, requiring the accommodations of temporal law. They knew, therefore, that natural law was elaborated and given objective form by legal tradition.

The dissenters in the *Slaughter House Cases* rested their erudite opinions on the facts of history. They did not make things up to suit their political fancies but relied instead on legal custom acknowledged by the King's Bench and an organic statute of the English Parliament. In light of long experience, it became clear in the past, as it is impossible to deny today, that, by the wonderful operation of unseen but undeniable forces of nature, the practice of monopoly creates painful economic congestions. So it was that legal tradition accommodated and expressed the reality of natural law.

Likewise, if the statute in *Griswold* had not been left to fade in desuetude, but had been actively enforced, Connecticut would have faced political upheaval or revolution. Hence, the reality of natural law, which, fortunately, did not produce unhappy consequences, but only because prosecutors had the good sense not to file accusations, and the statute was eventually found unconstitutional. In this way temporal law honored privacy as an unenumerated constitutional immunity which had always existed by natural law. After transitions and adjustments, legal tradition will mature into a sturdier and sounder landmark which can be used with greater wisdom and confidence in future years.

#### IV. HEALTH FREEDOM

One of the most distinguished civil liberties decisions of the twentieth century, never overruled and often cited,<sup>72</sup> rests on the

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law jurisprudence actually restrains temporal law from attempting to prohibit some activities, especially those of a private nature, which, right or wrong, are not proper subjects for public regulation. See, e.g., THOMAS AQUINAS, *SUMMA THEOLOGICA*, Ia IIae, q. 93, art. 3, ad 3, translated in, *BASIC WRITINGS OF SAINT THOMAS AQUINAS*, 766 (Anton Pegis ed. 1945).

71. For abundant references to natural law, see the opening passages of THE DECLARATION OF INDEPENDENCE (U.S. 1776) and the corresponding language of Sir William Blackstone, *supra* note 27, at 38-43.

72. See, e.g., *Griswold v. Connecticut*, 381 U.S. at 481-82, 495, 502.

opinion of Justice James McReynolds in *Meyer v. Nebraska*.<sup>73</sup> Citing the duty of government to promote education, founded on the Northwest Ordinance, McReynolds struck down as unconstitutional under the Fourteenth Amendment a law prohibiting the teaching of German to children in the primary grades of public schools in Nebraska. His general formula is particularly worthy of notice:

While this court has not attempted to define with exactness the liberty thus guaranteed, the term has received much consideration, and some of the included things have been definitively stated. Without doubt, it denotes not merely freedom from bodily restraint, but also the right of the individual to contract, to engage in any of the common occupations in life, to acquire useful knowledge, to marry, to establish a home and bring up children, to worship God according to the dictates of conscience, and, generally, to enjoy privileges long recognized at common law as essential to the orderly pursuit of happiness by free men.<sup>74</sup>

It is noteworthy that Sir William Blackstone mentioned the "preservation of man's health from such practices as may prejudice or annoy it" not as a legislative power, but as among "absolute rights of individuals,"<sup>75</sup> -- in other words, as among "those privileges long recognized at common law as essential to the orderly pursuit of happiness by free men."<sup>76</sup>

Therefore, it is clear enough that there are natural rights protected by fundamental law, even if not constitutionally enumerated. As there are such natural rights to marry and have children, to seek knowledge, to enjoy personal privacy, and to earn a livelihood by honest work of choice, subject only to such regulation as may be reasonably needed to protect the rights of others and the common good, so too there is a domain of personal freedom, which limits the "police power" of a State in regulating health. It is an area given some but not full judicial development in the twentieth century.

Two classic cases stand out like beacons, the first being *Jacobson v. Massachusetts*,<sup>77</sup> in which a citizen challenged a statute compelling small pox vaccinations to counteract a pending epidemic of deadly disease. The act of the legislature was upheld under the Fourteenth Amendment. The holding is understandable, because the statute addressed a public danger, and failure to comply might have tangibly

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73. 261 U.S. 390 (1923).

74. See *id.* at 399-400.

75. BLACKSTONE, *supra* note 27, at 134.

76. 261 U.S. at 400.

77. 197 U.S. 11 (1905).

increased the chances that an offender might become a carrier of disease which thereby could infect others. Public emergency has always justified intrusions, even upon incomplete knowledge, which normal situations will not.

Of much interest in this case is the discussion of the fact that, while the general belief of the legislature on the need for smallpox vaccinations was supported by respectable medical authority, there was nevertheless responsible dissent within the medical profession over the efficacy and in some degree even of the safety of this particular measure. In *Jacobson*, the court reasoned, "The possibility that the belief [favoring smallpox vaccinations] may be wrong, and that science may yet show it to be wrong is not conclusive; for the legislature has the right to pass laws which, according to [reasonable belief] are adapted to prevent the spread of contagious diseases."<sup>78</sup>

No less of interest is an exception to the general principle of the judgment. The court plainly said that the statute could never be interpreted to compel a vaccination where it could be shown "with reasonable certainty" that application of the statute to an objecting citizen "would seriously impair his health or probably cause his death."<sup>79</sup> This observation was added as an essential feature of the *ratio decidendi* to avoid misinterpretation.

The court did not define what exactly it meant in saying that a statutory regulation of public health may not be extended to situations in which serious impairment of personal health is shown with "reasonable certainty." But this characteristic phrase has long been a term of art in the law of damages. It has long been used to describe the legal standard of proving an injury in civil proceedings: while damages may not be based on speculation or guess, it will be enough to show the approximate degree of harm by fair preponderance of the evidence adduced in a judicial hearing.<sup>80</sup> And, in such

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78. *Id.* at 35. Language has been substituted in brackets for the phrase "the common belief of the people" in the opinion, because the obvious intent of the court was that the belief of the legislature acting on behalf of the people must at least be reasonable in view of available knowledge and evidence. The court said, "if a statute purporting to have been enacted to protect the public health, the public morals, or the public safety, has no real or substantial relation to those objects," then it is the duty of the judiciary to intervene and declare such statute unconstitutional. *Id.* at 31.

79. *Id.* at 39.

80. See, e.g., *Bigelow v. RKO Radio Pictures Inc.*, 327 U.S. 251 (1946); *Story Parchment Co. v. Paterson Parchment Paper Co.*, 282 U.S. 555 (1930); *Eastman Kodak Co. v. Southern Photo Material Co.*, 273 U.S. 359 (1927).

case, injury may be proved by the opinions of experts who can demonstrate that they are well informed on the subject investigated.<sup>81</sup>

The other outstanding case on generic principles of health freedom is *Toronto v. Forest Hill*,<sup>82</sup> in which the majority opinion was written by Justice Ivan Rand, who was probably the most eminent jurist on the Supreme Court of Canada, in any event one of the finest natural law judges in the world, during the twentieth century.<sup>83</sup> This case arose under the British North America Act of 1867, before it was possible, except on a very limited basis,<sup>84</sup> for the judiciary of Canada to strike down acts of the dominion Parliament or of the provincial Legislatures as unconstitutional and thus null and void.<sup>85</sup> The judiciary of Canada was then obliged to protect civil liberties by strict construction of statutes, as far as possible, so as to avoid collision with natural law and legal tradition.<sup>86</sup> It was by using such conservative yet effective principles that Justice Rand became distinguished as a civil libertarian on the bench.

81. See, e.g., *Julian Petroleum Corp. v. Courtney Petroleum Co.*, 22 F.2d 360, 362 (9th Cir. 1927).

82. [1957] 9 D.L.R. 2d 113 (Can.).

83. See, e.g., Michael Schneiderman, *The Positivism of Hugo Black v. The Natural Law of Ivan Rand: A Study in Contrasting Judicial Philosophies*, 33 SASKATCHEWAN LAW REV. 267 (1968). Another great natural law jurist in Canada during the twentieth century was Chief Judge Jules Deschenes of the Superior Court of Quebec. See, e.g., *Nissan Auto. Co. v. Pelletier*, 77 D.L.R. 3d 646 (Que. 1976).

84. Mainly where statutes were enacted contrary to the organic provisions of the British North America Act of 1867, as held by the British Privy Council in *In re Initiative and Referendum Act* [1919] App.Cas. 935, and the Supreme Court of Canada in *Saumer v. Quebec*, [1953] 4 D.L.R. 641 (Can.).

85. The situation has since changed beginning with the Canadian Bill of Rights of 1960, an organic statute of the dominion Parliament, which unlike the English Bill of Rights of 1689, was more than a venerable guide for the interpretation of statutes. In *Queen v. Drybones* [1970] 9 D.L.R. 3d 473 (Can.), the Canadian Bill of Rights of 1960 was held to be a statutory directive to restrain federal laws from operation. Later came the Canadian Charter of Rights and Freedoms consisting of sections 1 through 35 of the Constitution Act of 1982, which restrains the federal and provincial governments, and cannot be repealed by legislative act. Even so, section 33 of the Constitution Act of 1982 concedes to legislative power the prerogative of making statutes operable for five-year intervals, notwithstanding important provisions of the Canadian Charter. The Constitution Act of 1982 is part of the Canada Act of 1982, an organic statute of the British Parliament which renounced the last vestiges of imperial control over Canada.

86. Lord Coke held in *Dr. Bonham's Case*, 8 Coke 114a (C.P. 1610), that the courts of common law could declare acts of Parliament null and void. This doctrine was overthrown on the weight of the principle that the Commons, Lords, and King in Parliament are omnipotent and sovereign, and that, therefore, the judiciary cannot declare an act of Parliament null and void. Even so, the judges can and must construe acts in keeping with the principle that the King can do no wrong, and thus that all acts of Parliament must be construed, if possible, in keeping with natural law and legal tradition. The judges should do so, even if they must read statutes *quoad hoc* or contrary to their literal meaning in unusual situations. See, e.g., BLACKSTONE, *supra* note 27, at 91, 160, 246.

In *Forest Hill*, a provincial law allowed municipal corporations to treat public water supplies so as to make the vended water “pure and wholesome.”<sup>87</sup> Justice Rand construed this statute strictly, so as to disallow fluoridation. He protested,

But it is not to promote the ordinary use of water as a physical requisite for the body that fluoridation is proposed. That process has a distinct and different purpose; it is not a means to an end of wholesome water for water’s function but to an end of a special health purpose for which water supply is made use of as a means.<sup>88</sup>

Similar language appears in the concurring opinion of Justice Cartwright, regarding the municipal by-law to initiate fluoridation then in question:

In pith and substance the by-law relates not to the provision of a water supply but to the compulsory preventative medication of the inhabitants of the area. In my opinion, the words of the statutory provisions on which the appellant relies do not confer upon the council the power to make by-laws in relation to matters of this sort.<sup>89</sup>

*Jacobson* and *Forest Hill* expound complementary principles of natural law jurisprudence, and thereby supply a cogent idea of health freedom which is inherent in the respected constitutional formulation expressed in *Meyer v. Nebraska*.<sup>90</sup>

Under the Guarantee Clause, the Ninth Amendment, and the Fourteenth Amendment, understood in light of natural law and legal tradition, “police power” to regulate public health includes discretion to compel submission of citizens to medical intervention, but only if three necessary conditions are met. First, legislative judgment underlying the statute may discount responsible professional dissent, yet must at least rest upon reasonable medical or scientific evidence. Second, it must be fairly justified by grave cause or public emergency, such as the need to prevent the spread of a contagious disease. Third, the intervention prescribed cannot be imposed upon protesting citizens who are able to prove, by a fair preponderance of

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87. *Forest Hill*, 9 D.L.R. 2d at 114-15.

88. *Id.* at 118. The same distinction appears in the Safe Drinking Water Act, 42 U.S.C. § 300g-1(b)(11), which states, “No national primary drinking water regulation may require the addition of any substance for preventative health care purposes unrelated to contamination of drinking water.” This provision was intended by Congress to prohibit the use of the Safe Drinking Water Act as a means of imposing artificial fluoridation of public water supplies throughout the United States.

89. *Id.* at 124.

90. 261 U.S. 390 (1923).

the evidence, a tangible danger of serious injury to their health. But the legislative power cannot otherwise impose compulsory medication on protesting citizens. This much is the ideal of natural law jurisprudence which is inseparable from the intended meaning of the United States Constitution.

## V. THE KEY DECISIONS SUSTAINING FLUORIDATION

It is not our purpose to provide a general review of all judicial decisions that have touched upon the constitutionality of imposing fluoridation on the general public.<sup>91</sup> Suffice it to say that the great majority of cases sustain it, we think wrongly, but there can be no doubt about the clear trend of American jurisprudence.

Our objective here is to note highly important developments in the last twenty-five years, which strenuous efforts have been made to camouflage behind smiling propaganda orchestrated by the ADA and the USPHS to promote fluoridation, as if all were well. In fact an end to this episode of public health malpractice is foreseeable. If we consider scientific and legal revolutions of the past, say from the discovery of the true cause of puerperal fever by Dr. Ignaz Semmelweiss until his eventual posthumous vindication, or in the development of freedom of the press from the founding of the Star Chamber to the adoption of the First Amendment, we should not be astonished to see the passing of considerable time in the rise and fall of fluoridation, and not a little confusion along the way.

Among all others, the most distinguished judgment sustaining the constitutionality of mandatory fluoridation of public water supplies has always been, and still is *Paduano v. City of New York*,<sup>92</sup> which arose upon a suit brought in 1965 to enjoin the practice in New York City.<sup>93</sup> At that time the clear weight of available medical and scientific evidence, then respectable but long since shown to be unfounded,<sup>94</sup> suggested that fluoridation was effective in reducing tooth decay in children.<sup>95</sup> Evidence of potential danger then

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91. A recent article reviewing many such cases is by Douglas Balog, *Fluoridation of Public Water Systems: Valid Exercise of State Police Power of Constitutional Violation?*, 14 PACE ENVTL. L. REV. 645 (1997).

92. 257 N.Y.S. 2d 531 (S.Ct. N.Y. County 1965), *aff'd* 24 App. Div. 2d 437, 260 N.Y.S. 2d 831 (1965), *aff'd* 17 N. Y. 2d 875, 271 N. Y. S. 2d 305 (1966), *cert. denied* 385 U.S. 1026 (1967).

93. *See id.* at 533.

94. *See* Kalsbeek & Verrips, *supra* note 8; Ziegelbecker, *supra* note 10; Kumer, *supra* note 8; Imai, *supra* note 9; Colquhoun, *supra* note 11; Yiamouyiannis, *supra* note 12, and accompanying text.

95. *See, e.g.*, Hilliboe et al., *supra* note 4, at 314-24.

existed,<sup>96</sup> but it was little known, in an undeveloped state, and effectively concealed by ADA-USPHS disinformation.<sup>97</sup> Most physicians and dentists then believed that fluoridation was beneficial and safe. It is fair to say that most available evidence -- at least what could be easily orchestrated into a courtroom appearance of the most available evidence -- then suggested that fluoridation was beneficial and safe.

True enough, then available evidence suggested the need for caution among the wise. But there were not many in those days who had good credentials, independent means, leisure time for deep study, the persuasiveness to expose the slick sales pitches of ADA-USPHS spokesmen, the capacity to survive assaults on their careers and reputations mounted by fluoridation promoters,<sup>98</sup> -- and wisdom besides.

It is wrong to justify fluoridation by reference to *Jacobson*, because fluoridation, unlike small pox vaccinations, does not address a contagious disease, but it is at least understandable that the Supreme Court of New York should have cited it as persuasive legal authority.<sup>99</sup> The court said:

The question of the desirability of fluoridation is immaterial. In the face of the overwhelming precedents previously cited, and in accordance with general principles of stare decisis, this court sitting at Special Term, feels constrained to deny plaintiffs' application for a temporary injunction and to grant defendants' motion for a dismissal of the complaint. *Until the scientific evidence as to the deleterious effects of fluoridation reaches beyond the purely speculative state now existing*, decisional law mandates the holding that the controversy should remain within the realm of the legislative and executive branches of government. While the courts do not have a right to impose fluoridation upon anyone, judicial restraint requires us to adhere to the uniform decisions holding that the executive and legislative branches of government do -- *at least until some proof is adduced that fluoridation has harmful side effects* and therefore is not in the interests of the community.<sup>100</sup>

The court obviously had in mind the qualifying dictum in *Jacobson* that a public health regulation, obliging a citizen to accept a

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96. See Taylor, *supra* note 16, and accompanying text.

97. See, e.g., Hilleboe et al., *supra* note 4; HARRIS, *supra* note 18, and accompanying text.

98. Literally volumes could be written on the notorious and ruthless tactics of fluoridation promoters seeking to silence all credible opposition. A sober and factual introduction to this subject of political intrigue can be found in WALDBOTT, ET AL., *supra* note 1, at 258-352.

99. *Paduano v. New York*, 257 N.Y.S. 2d 531, 539 (S. Ct. N.Y. County 1965).

100. *Id.* at 542 (emphasis added).

medical remedy, cannot be extended to a situation in which it is shown with reasonable certainty, or by a fair preponderance of the evidence exceeding speculation or guess, that the remedy will impose a danger of serious injury to the personal health of protesting citizens. Note clearly what the court did not say, should not have said, and, in light of its reliance on *Jacobson*, cannot be interpreted to have said: -- that such danger or injury must be proven by evidence so powerful as to eliminate all reasonable controversy on the subject. Such a burden of proof is legally impossible on any question of public health, nor does it comport with public justice or safety, nor does it have any legitimate basis in legal authority.

Another key judgment sustaining imposed fluoridation merits passing notice because it concerns legal ideals of the type suggested by the natural law jurisprudence of Ivan Rand. In *State Board of Health v. Brainerd*,<sup>101</sup> a mandatory fluoridation law was applied to a community which protested as a whole body politic in a special referendum<sup>102</sup> by a vote of 9 to 1 against implementing the law, and by a vote of 5 to 1 authorizing the city fathers to sit as a convention which met and declared the statute unconstitutional.

The state board of health sued the municipal government which pleaded the express and formal protest of the residents and voters of the city, the want of a public emergency occasioned by a pending epidemic of contagious disease, the existence of a responsible medical and scientific controversy over the effectiveness and safety of fluoridation, the availability of fluoride to persons desiring it by less intrusive means, and, therefore, the invasion of a natural right of the people, protected by fundamental law under these circumstances, to enjoy freedom of choice in maintaining personal health.<sup>103</sup> The Minnesota Supreme Court upheld the constitutionality of the mandatory fluoridation law, and sustained the writ of mandamus ordering city officers to implement the statute.<sup>104</sup> But there was a compelling dissent that speaks to the future.<sup>105</sup>

If it can be established "with reasonable certainty" that fluoridation is dangerous to human health, and has caused massive injury to

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101. 241 N.W.2d 624, 626 (Minn. 1976), *appeal dismissed* 429 U.S. 803 (1976).

102. See *State Board of Health v. City of Brainerd*, No. 38183, Respondents' Answer, part VII, plea in avoidance, filed Oct. 31, 1974 (Crow Wing County District Court, Minn.). Judge John Alexander Jameson expressed his warm approbation of such citizen assemblies in his classic *TREATISE ON CONSTITUTIONAL CONVENTIONS* 4-5 (4th ed. 1887, reprint 1972).

103. See *City of Brainerd*, Respondent's Answer, part VIII, plea in avoidance and demurrer, filed Oct. 31, 1974.

104. See *Brainerd*, 241 N.W.2d at 629-34.

105. See *id.* at 634-35.

the health of the American people, two very important legal consequences should ultimately follow: (1) the standard of unconstitutionality set forth in *Jacobson* and *Paduano* will have been met, and fluoridation will be unlawful throughout the United States; and (2) the wisdom of a broader constitutional principle of health freedom, envisioned by the majority in *Forest Hill* and the dissent in *Brainerd*, will then be evident, and its eventual judicial recognition as a blessing of liberty may be anticipated for our children, grandchildren, and great grandchildren.

#### VI. THE EPIDEMIOLOGICAL EVIDENCE

The question now to be addressed is whether, in keeping with *Jacobson* and *Paduano*, it can be proved with "reasonable certainty" in judicial proceedings that fluoridation is dangerous to public health by causing cancer and other ailments in man. In assessing trends in human cancer, we have two main sources of information which can be used as evidence.

Laboratory studies enable us to view a disease at the molecular and cellular levels, and to consider reactions in living plants, insects and animals. The advantage of laboratory studies is that precise experimental conditions can be designed and implemented to control for known and unknown variables, which is critical in the identification of causal operations in the empirical sciences.<sup>106</sup> Whatever legitimate doubt may once have been voiced on the subject, it is now abundantly clear that a significant body of laboratory research reveals carcinogenic potential in fluoride artificially introduced in water at 1.0 ppm.<sup>107</sup>

The disadvantage of laboratory studies is that some caution is required in extrapolating results to human beings, and here is where epidemiology comes into the picture. Epidemiology is the branch of medicine which studies the diseases of man in his actual environment. If the controls in epidemiological surveys are not as precise, the results are more pertinent to human experience. Therefore, both laboratory studies and epidemiological surveys can profitably be considered together, and, when parallels between them become

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106. Sir Francis Bacon expounded this demand of inductive logic in the third, fourteenth, nineteenth, twenty-second, eighty-second, and ninety-ninth aphorisms in Book I of *Novum Organum*. The meaning of these aphorisms is discussed in 3 COPELSTON, A HISTORY OF PHILOSOPHY, pt. II, 112-22 (1963) [hereinafter COPELSTON].

107. See, e.g., Taylor, *supra* note 16; Taylor & Taylor, *supra* note 20; sources cited *supra* note 21.

striking, causal relationships between agents in the environment and human disease can be more readily identified and explained.

Hence the question: Has the carcinogenic potential of fluoride observed in laboratory studies been reflected in human experience? The answer, based on very extensive epidemiological data, is certainly in the affirmative.<sup>108</sup> This fact removes the speculative character of objections previously expressed by physicians and other learned persons when the world first hailed fluoride as a wonder of modern science.

The leader in gathering pertinent epidemiological data and organizing it in a usable form was Dr. Dean Burk, who retired in 1974 as the head of the cytochemistry section of the National Cancer Institute (NCI) of the United States.<sup>109</sup> In his time, he was one of the most famous cancer research scientists in the world. He was well read, highly cultured, disarmingly humble, and had a delicious sense of humor. But standing out above every other trait was his ability to view a problem of empirical observation with clear insight and to give reality, as he put in conversation with those who knew him, "the simplest rational expression."<sup>110</sup>

The epidemiological work here in question was done under the direction of Dr. Burk from his retirement until his death in 1988. As with so much of his work before his retirement, he was years ahead of his time.

On December 16, 1975, Congressman James Delaney of New York inserted into the *Congressional Record* data gathered and

108. The most important versions of the epidemiological data here in question, including reference to related laboratory studies, and conventional adjustments for age, race, and sex, are the following: Dean Burk & John Yiamouyiannis, *Fluoridation and Cancer: Age Dependence of Cancer Mortality Related to Artificial Fluoridation*, 10 FLUORIDE 123 (1977) [hereinafter Burk & Yiamouyiannis]; Dean Burk and J. R. Graham, *Lord Jauncey and Justice Flaherty: Opposing Views of the Fluoridation-Cancer Link*, 17 FLUORIDE 63 (1984) [hereinafter Burk & Graham]; Pierre Morin et al., *Les fluorures versus le cancer et les maladies congénitales: l'image globale*, GOUVERNEMENT DU QUEBEC, MINISTÈRE DES AFFAIRES SOCIALES (1984); Pierre Morin et al., *Fluorides, Water Fluoridation, Cancer, and Genetic Diseases*, 12 SCI. & PUB. POL'Y 36 (1985); Rudolf Ziegelbecker, *Zur Frage eines Zusammenhanges zwischen Trinkwasserfluoridierung, Krebs, und Leberzirrhose*, 218 GWF WASSER/ABWASSER 111 (1987); Dean Burk et al., *A Current Restatement and Continuing Reappraisal Concerning Demographic Variables in American Time-Trend Studies on Water Fluoridation and Human Cancer*, 61 PROC. PA. ACAD. OF SCI 138 (1988) [hereinafter Burk, Graham, & Morin].

109. See WHO'S WHO IN THE WORLD 1974-1975 161 (2d ed., Marquis Who's Who, Inc., 1975); *National Cancer Program (Part 2), Hearings Before the Subcomm. of the Comm. on Government Operations*, 95th Cong. 471 (1977) [hereinafter *National Cancer Program*].

110. Dr. Burk's capacity to view and characterize phenomenal reality is illustrated in his trademark paper, Dean Burk & Hans Lineweaver, *The Determination of Enzyme Dissociation Constants*, 56 J. AM. CHEM. SOC'Y 658 (1934), which has been one of the most often cited and discussed papers in biochemistry during the twentieth century..

organized under the direction of Dr. Burk, showing a striking association between fluoridation and cancer.<sup>111</sup> It is important to appreciate the basic data, because it was the principal and decisive focus of the judicial hearings that followed.<sup>112</sup>

The year-by-year average observed cancer death rates of ten large central cities of the United States, which served as the control group and remained unfluoridated from 1940 through 1968, were compared for the years 1940 through 1968 with the year-by-year average observed cancer death rates of ten large central cities of the United States which served as the experimental group and remained unfluoridated from 1940 through 1951, but fluoridated between 1952 and 1956, and remained fluoridated through 1968 and thereafter.<sup>113</sup> The experiment came to an end in 1968 because fluoridation was introduced in the control cities step-by-step from and after 1969. The necessary data are available for all years except for 1951 and 1952.

The central cities in question are all very large, comparable in size, and spread out across the whole country. In the control group were: Los Angeles, Boston, New Orleans, Seattle, Cincinnati, Atlanta, Kansas City (Missouri), Columbus (Ohio), Newark, and Portland.<sup>114</sup> In the experimental group were: Chicago, Philadelphia, Baltimore, Cleveland, Washington D.C., Milwaukee, St. Louis, San Francisco, Pittsburgh, and Buffalo.<sup>115</sup>

Roughly speaking, the comparison is between about seven million people in the ten control cities and about eleven million people in the ten experimental cities over about thirty years.<sup>116</sup> There has hardly ever been a published epidemiological study using so much data, arranged in such powerful experimental design.

The basic data can be expressed as unweighted averages (giving each city equal weight, regardless of size) and as weighted averages (giving each city weight according to size). All cancer death rates here discussed are expressed as so many cancer deaths per 100,000 persons.

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111. See 121 CONG. REC. 40773-75 (1975).

112. The technical particulars of the selection, derivation, and arrangement of the basic data are precisely described in the method section of Burk & Yiamouyiannis, *supra* note 108, at 103-05, and Burk, Graham, & Morin, *supra* note 108, at 138-39.

113. See Burk & Yiamouyiannis, *supra* note 108, at 104; Burk, Graham, & Morin, *supra* note 108, at 138.

114. See Burk & Yiamouyiannis, *supra* note 108, at 104; Burk, Graham, & Morin, *supra* note 108, at 138.

115. See Burk & Yiamouyiannis, *supra* note 108, at 104; Burk, Graham, & Morin, *supra* note 108, at 138.

116. See Burk, Graham, & Morin, *supra* note 108, at 139.

The basic data are given in detail in the appendix of this article.<sup>117</sup> For the sake of convenience an observed or crude cancer death rate for all sites in an entire population will be designated as CDRo. It does not matter in this case whether unweighted or weighted averages are used. The pattern is numerically and visibly the same, and the differences emerging from mathematical analysis of the figures for the two types of averages are trivial. Either way the possibility of chance occurrence is far less than 1 in 1000. The weighted averages will be used here because weighted averages have been used by all critics of Dr. Burk's work, and Dr. Burk frequently used weighted averages himself.

The data are arranged in standard experimental design, comparing like with like along a base line from 1940-50 in which cancer death rates grew equally, then continuing the comparison after fluoridation was introduced in the experimental cities. It was after fluoridation began that there was a pronounced acceleration in cancer mortality in the experimental group (+F) as compared with the control group (-F). The resulting association between fluoridation and cancer can be conveniently quantified by linear regression<sup>118</sup> analysis for the data for 1940-50, also for 1953-68 then extending the resulting lines to achieve values for 1950 and 1970:<sup>119</sup>

	1940	1950	1950	1970
CDRo(+F)	154.2	181.8	186.3	222.6
CDRo(-F)	153.5	181.3	183.6	188.8

The size of the association between fluoridation and cancer can be expressed as follows:  $[(222.6-188.8) - (186.3-183.6)] + [(154.2-153.5) - (181.8-181.3)]$  or 31.3 excess cancer deaths per 100,000 persons

117. The figures and tables set forth in the appendix are taken from Burk, Graham, & Morin, *supra* note 108, at 139-40. The basic data can be recapitulated by any informed and impartial investigator drawing from census figures and vital statistics published by the government of the United States.

118. Linear regression is a standard technique in statistics for characterization of a field of points on a two-dimensional graph as a straight line. This line is so drawn that the sum of the squares of the distances of the several points to the line is the lowest possible number. Such line is assumed in the product moment formula for the linear correlation coefficient, designated "r" to express the degree of association between the two axes. By use of related operations, a statistical confidence level, represented by the coefficient "P" can be derived. P determines the extent to which an observed association may or may not have occurred by chance. The subject is discussed in standard textbooks. See, e.g., SIR AUSTIN BRADFORD-HILL, A SHORT TEXTBOOK OF MEDICAL STATISTICS 161-67, 173-80 (10th ed. 1977); MURRAY SPIEGEL, THEORY AND PROBLEMS OF STATISTICS 218-20, 226-28, 244-45, 253-54 (1961).

119. See Burk & Graham, *supra* note 108, at 65; Burk, Graham, & Morin, *supra* note 108, at 142-43.

exposed within fifteen to twenty years after fluoridation began in the experimental group of cities. If this figure is multiplied against 130 million Americans who have been drinking fluoridated water over the past fifteen to twenty years or more, an excess of over 40,000 cancer deaths in the United States every year is attributable to fluoridation.

Not long after the foregoing figures were first called to the public's attention, Dr. Burk was called to testify before Congress on April 6, 1976. And testify he did:

Oliver Wendell Holmes Sr., M.D., of Civil War medical fame, and professor of anatomy at Harvard University, in 1843 and 1855 described then prevailing treatment of puerperal fever in lying-in hospitals as criminal manslaughter. It was only manslaughter, however, not murder because the physicians of that day did not have, and could not have had a sufficiently knowledgeable idea of the bacteriological basis of the doctor-nurse-patient transmission of the disease until the work of Pastuer and Lister decades later.

The scientific and medical status of artificial fluoridation or public water supplies has now advanced to the stage of the possibility of socially imposed mass murder on an unexpectedly large scale involving tens of thousands of cancer deaths of Americans annually.<sup>120</sup>

The shock resulting from this firm statement by a world-renowned cancer research scientist evoked an emergency response from the USPHS. Needless to say, the USPHS did not admit that they had exposed the American people to an environmental hazard which produced "tens of thousands of cancer deaths of Americans annually." As night follows day, they claimed that Dr. Burk had failed to take elementary precautions.<sup>121</sup>

Their pretext was that he and his associates had not adjusted the basic data for age, race and sex, and that, when such adjustments were done, there was no association between fluoridation and cancer.<sup>122</sup> Their claim essentially was that, among 18 million people in twenty large cities over thirty years, it so happened that the

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120. *Departments of Labor and Health, Education, and Welfare Appropriations for 1977 (Part 7), Hearings Before a Subcomm. of the Comm. on Appropriations, 94th Cong. 1063-64 (1976)* (statement of Dr. Burk).

121. This protest first appeared in a letter of February 6, 1976, from Dr. Ronald Frederickson, Director of the National Institutes of Health, to Congressman James Delaney of New York. This letter has not been officially published, but the particulars are set forth in the prepared statement of Dr. Arthur Upton, Director of the NCI, to Congress on October 12, 1977. See *National Cancer Program, supra* note 109 at 104-20.

122. See *id.* at 98-103 (statement of Dr. Guy Newell, Deputy Director of NCI).

experimental cities grew older faster just as they were fluoridated, and that this aging occurred precisely to the extent necessary to create the shocking appearance of an association between fluoridation and cancer.<sup>123</sup> This association, they held, was merely an illusion deceiving the ignorant. It sounds far-fetched. It was worse than far-fetched.

It is obligatory to note that Dr. Burk and those working with him adjusted for demographic variables on numerous occasions.<sup>124</sup> Beyond his published scholarship, he repeatedly gave detailed testimony on these questions in public hearings<sup>125</sup> and courts of justice.<sup>126</sup> But his view was that the basic data are best not adjusted in this particular case, because the base line established by the data for 1940 through 1950 already controls for all known and unknown variables.<sup>127</sup>

Cancer incidence and mortality are influenced by countless demographic, environmental, dietary, socio-economic, and other factors, some tending to increase, others tending the decrease the extent of the disease. It is known, for example, that older people tend to experience more cancer than younger people, yet good diet and environment can significantly offset the effects of age. Adjustments for age in particular, and perhaps also for race and sex, may be important in comparing two populations at one point in time, because such adjustments may serve as a control for such demographic variables.<sup>128</sup> Yet a very different situation emerges when, as

123. See *id.* at 80-83 (statement of Dr. Robert Hoover, NCI).

124. Dr. Burk's interest in such adjustments first surfaced at the meeting of the American Society of Biological Chemists in San Francisco on June 6-10, 1976, where he joined Dr. John Yiamouyiannis in a paper setting forth partial adjustments of the basic data for age and race by the direct method. See Dean Burk & John Yiamouyiannis, *Fluoridation of Public Water Supplies and Cancer Death Rates*, 35 FED. PROC. AM. SOC. BIOL. CHEM. 1707, (1976). Dr. Burk's more advanced adjustments of the basic data for demographic variables absorbed twelve years of his life's work and included, among others, articles published by the International Society of Fluoride Research and the Pennsylvania Academy of Science. See Burk & Yiamouyiannis, *supra* note 108; Burk & Graham, *supra* note 108; Burk, Graham, & Morin, *supra* note 108. He was the major inspiration of these several articles. His matured views are best expressed in the last, published in 1988 not long before his death.

125. For example, see his formal statement to a hearing panel of the EPA on June 17, 1985, including nineteen tables outlining multiple adjustments by the indirect method for age, race and sex, reprinted in NATIONAL FLUORIDATION NEWS, Vol. XXXI, no. 4 (1985).

126. See *Safe Water Found. of Tex. v. City of Houston*, No. 80-52271, Trial Transcript, Jan. 13-14, 1982, at 48-105 (151st Jud. Dist., Tex.)

127. See *id.* at 46-48, 105-07.

128. See, e.g., Burk & Graham, *supra* note 108, at 65; Burk, Graham, & Morin, *supra* note 108, at 139-40.

in the case of the basic data here in question, there is a comparison of trends over time, including a long base line.<sup>129</sup>

There are established principles of inductive logic which are associated historically with William of Ockham<sup>130</sup> and Sir Isaac Newton.<sup>131</sup> They are used in the empirical sciences for the discovery or identification of causes in nature. Given a strong trend or association observed in nature, take the simplest and most fitting explanation as the cause, unless and until the contrary be shown. Likewise, attribute like causes to like effects, unless and until the contrary be shown. Finally, where cause and effect in certain circumstances are fairly ascertained by proper experiment, such cause and effect may be generalized throughout the universe, unless and until the contrary be shown.

Given these principles of natural reason, and given what is known about fluoride, including especially its demonstrated carcinogenic potential,<sup>132</sup> the simplest and most fitting explanation of the basic data is that all cancer-influencing factors counterbalanced each other during the long base line period before 1950; that all these factors continued to counterbalance each other after 1950 except for the one factor known to be new, viz., fluoridation; and that, therefore, the entire observed association between fluoridation and cancer in the basic data, i.e., 31.3 excess CDs/100,000 after 15-20 years of exposure, is attributable to fluoridation as the cause.<sup>133</sup> We can then generalize by saying that artificial fluoridation of public water supplies causes an immense amount of cancer in the United States, "involving tens of thousands of cancer deaths of Americans annually."

Adjustments for age, race, and sex are here meant to account for demographic factors which have already been addressed by the base line. Such adjustments will therefore tend to control more than once

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129. See, e.g., Burk & Graham, *supra* note 108, at 65; Burk, Graham, & Morin, *supra* note 108, at 140.

130. Ockham's emphasis on the simplest explanation as the best explanation, often called "Ockham's razor," grew out of his philosophical treatment of universals, relations, causation, and motion. See COPLESTON, *supra* note 106, pt. I, at 69-71, 80-81, 83-88.

131. At the beginning of the third book of his *PHILOSOPHIAE NATURALIS PRINCIPIA MATHEMATICA*, Sir Isaac Newton laid down his "rules of reasoning in natural philosophy" for the identification of causes in phenomenal reality, including the simplicity principle, sometimes called "Ockham's Razor." See 5 COPLESTON, *A HISTORY OF PHILOSOPHY*, pt. I, 162-64 (1964).

132. See generally Taylor, *supra* note 16; Taylor & Taylor, *supra* note 20; sources cited *supra* note 21.

133. See Burk & Graham, *supra* note 108, at 65; Burk, Graham, & Morin, *supra* note 108, at 139-40.

for the same factors and so, in this context, will tend to understate reality. Changes in the demographic composition of the control and experimental cities have in some degree been counteracted by other factors, and the adjusted figures will not reflect this counteracting effect. So again, adjustments will tend to understate reality.

Dr. Burk respected conventional opinion, but he did not adore it. And since conventional opinion demands adjustments for age, race, and sex, not because he thought they clarified the meaning of the basic data, he cheerfully went along. It is ironic that the scientist who thought these adjustments least useful did more than all others to assure that they were properly done. His guiding principle in dealing with the subject was that, if adjustments were to be executed, they should rest upon standard methods, and be carried out as comprehensively and thoroughly as possible, otherwise not at all.

It is no less ironic that the attack against his epidemiological work was spearheaded by the National Cancer Institute which he had served with such distinction before his retirement. The confrontation initially developed in hearings on September 21 and October 12, 1977, in Congress.<sup>134</sup>

In these hearings, the National Cancer Institute came forth with its objections in a definitive, 17-page document.<sup>135</sup> It was presented under the signature of the director Dr. Arthur Upton, and introduced in committee by the deputy director Dr. Guy Newell. This "Upton Statement" was then and still is the official position of the government of the United States. It is reputed to be the irrefutable answer to the thesis of Dr. Burk and his colleagues. The scientific debate since then has turned upon the Upton Statement, which lays down a characteristic adjustment of the basic data for age, race, and sex by the indirect method, an orthodox procedure for this purpose.<sup>136</sup>

In this procedure, we ordinarily compare two populations at a certain point in time in terms of the ratio of the observed cancer death rate (which we have called CDR<sub>o</sub>) to the "index" or "expected" cancer death rate (which we shall call CDR<sub>e</sub>) of each population.

In deriving an "expected" CDR, we ascertain from census figures the number of persons in each demographic category of the observed populations. In addressing Dr. Burk's basic data, the staff at NCI

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134. The key contributions of historic significance on both sides are reprinted in *National Cancer Program*, *supra* note 109, at 3-60, 75-83, 98-140, 181-212, 219-30, 305-18 (1977).

135. *See id.* at 104-20.

136. *See* BRADFORD-HILL, *supra* note 118, at 190-96.

used forty such categories, viz., age groups 0-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, and 85+, each divided into white male, white female, nonwhite male, and nonwhite female.

We must then select a "standard population," drawn from census figures and vital statistics for a certain territory and year: this standard population really consists of a set of known cancer death rates for each category in the population. The choice of this standard population requires some judgment. The staff at NCI selected the United States in 1950,<sup>137</sup> which is not, in our view, an unreasonable choice, because it represents a fair estimate of what cancer experience should be, category by category, in the absence of anything tending to make cancer deaths higher or lower than usual.

For each population compared, the number of persons in each category is multiplied by the corresponding rate in the standard population. Expected cancer deaths so determined are added up, then divided by the total population, and reduced to a common denominator of 100,000. The resulting "expected" CDR will be what may be anticipated for the population in view of its demographic composition.

The fraction CDR<sub>o</sub>/CDR<sub>e</sub> is called a standardized mortality ratio or SMR. If based on good judgment, it will indicate the extent to which the observed cancer death rate of a given population is higher or lower than what should be expected under normal circumstances in view of its demographic structure.

The Upton Statement sets forth an adjustment of the basic data expressed in weighted averages. The SMRs are as follows:<sup>138</sup>

	1950	1970	Change
CDR <sub>o</sub> /CDR <sub>e</sub>	1.23	1.24	+.01
CDR <sub>o</sub> /CDR <sub>e</sub>	1.15	1.17	+.02

Using these figures, the NCI asked Congress to believe that, relative to what may be expected in light of the age structure of the two groups of cities observed, cancer mortality actually grew 1% faster in the unfluoridated cities than in the fluoridated cities.<sup>139</sup>

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137. See *National Cancer Program*, *supra* note 109, at 112, 224.

138. See *National Cancer Program*, *supra* note 109, at 118.

139. See *id.* at 81, 112.

Dr. Burk and his colleagues had a remarkable answer:<sup>140</sup> The available and pertinent data for the years after 1950, were 1953-1968. Without the trends in these years, nobody would suspect that there is a causal relationship between fluoridation and cancer. In its adjustment, the NCI considered 1950 before fluoridation began in the experimental cities, and 1970 after fluoridation had already been initiated in the control cities, and did not consider the years 1953-1968 which were the whole basis of concern. In other words, the NCI simply derived their CDRo values from data reported for 1950 and 1970, and ignored all else, as if 1953-1968 were unimportant.

Having omitted all available and pertinent data in their adjustment, it is not surprising that the NCI came up with the wrong answer. In the same hearings before Congress, it was demonstrated by a colleague of Dr. Burk that, if the adjustment proposed by the NCI is undertaken using all available and pertinent data after 1950, there emerges an impressive association between fluoridation and age-race-sex adjusted cancer mortality.<sup>141</sup>

Dr. Burk developed even more comprehensive adjustments. In doing so, he considered the years before and after 1950, because the

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140. See *id.* at 64-65. See also Burk & Graham, *supra* note 108, at 67-68; Burk, Graham, & Morin, *supra* note 108, at 142-43.

141. Dr. John Yiamouyiannis executed an adjustment of the basic data, using weighted averages and US-1950 as the standard population, exactly as stipulated in the Upton Statement. He adjusted only for the years after 1950, deriving CDRo values for 1950 and 1970, by linear regression analysis of the CDRo data for 1950 and 1953-1969, and showed an association in terms of CDRo/CDRe = +.042, and in terms of CDRo-CDRe = 12.4 cancer deaths per 100,00 persons exposed within after fifteen to twenty years after the introduction of fluoridation in the experimental cities. See *National Cancer Program*, *supra* note 109, at 64-65. The main objection to this technique came from Dr. David Newell of the Royal Statistical Society in defense of the Upton Statement. He claimed that, because populations between census years and thus denominators in intercensal CDRs must be estimated by linear interpolation, they are not reliable data, and therefore not suitable for linear regression analysis. See *Aitkenhead v. Borough of West View*, No. GD-4585, Trial Transcript, May 8, 1978, at 72, 72A, 73-76 (Allegheny County Court of Common Pleas, Pa.). This criticism was exploded by none other than Dr. Guy Newell, Deputy Director of the NCI, who supervised preparation of the Upton Statement and introduced it before Congress. Later speaking as a professor of epidemiology at the University of Texas, he stated emphatically that use of linear interpolation to derive denominators in intercensal CDRs is "accepted procedure" in modern applied epidemiology, and, therefore, perfectly reliable. See *Safe Water Found. of Texas v. City of Houston*, No. 80-52271, Trial Transcript, Jan. 26, 1982, at 1648-54 (151st Jud. Dist., Tex.). The correctness of undertaking a linear regression analysis of intercensal CDRs in which the denominators were estimated by linear interpolation was further confirmed by Dr. Hubert Arnold, professor of statistics at the University of California, Davis. See *National Cancer Program*, *supra* note 109, at 580. The propriety and necessity of such use of interpolated data, based on fundamental principles of inductive logic, is discussed in Burk & Graham, *supra* note 108, at 68-69, and Burk, Graham, & Morin, *supra* note 108, at 143-44.

observed CDRs portray a change in trends after 1950 and a change from trends before 1950.<sup>142</sup> The data representing 1953-1968 were important, but they were especially important in view of what happened in 1940-1950. The need to consider the years before and after 1950 became clearer from the fact that there were demographic fluctuations before and after 1950: it appeared that these fluctuations both before and after 1950 could materially influence the size the association adjusted for age, race, and sex.

Dr. Burk derived CDR<sub>o</sub> values for 1940 and 1950 by linear regression analysis of the data for 1940-1950, and for 1950 and 1970 by linear regression analysis of the data for 1953-1968.<sup>143</sup> He derived CDR<sub>e</sub> values, using US-1950 as the standard population, exactly as stipulated in the Upton statement.<sup>144</sup> He used the SMR or CDR<sub>o</sub>/CDR<sub>e</sub>, and also the difference between observed and expected CDRs, i.e., CDR<sub>o</sub>-CDR<sub>e</sub>, which is also used by conventional epidemiologists.<sup>145</sup> His results can be summarized as follows:<sup>146</sup>

Cities	1940	1950	1950	1970
CDR <sub>o</sub> (+F)	154.2	181.8	186.3	222.6
CDR <sub>e</sub> (+F)	128.1	146.9	146.9	174.7
CDR <sub>o</sub> /CDR <sub>e</sub> (+F)	1.204	1.238	1.268	1.274
CDR <sub>o</sub> -CDR <sub>e</sub> (+F)	26.1	34.9	39.4	47.9
CDR <sub>o</sub> (-F)	153.5	181.3	183.6	188.8
CDR <sub>e</sub> (-F)	140.3	155.5	155.5	166.0
CDR <sub>o</sub> /CDR <sub>e</sub> (-F)	1.094	1.166	1.181	1.137
CDR <sub>o</sub> -CDR <sub>e</sub> (-F)	13.2	25.8	28.1	22.8

These figures can be transformed into coefficients which reflect an association between fluoridation and CDRs adjusted for age, race, and sex, as it developed from 1940 to 1970:

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142. On the importance of adjusting both for the period before fluoridation was begun in the experimental cities and the period after, then reaching a combined result, see Burk & Graham, *supra* note 108, at 67, and Burk, Graham, & Morin, *supra* note 108, at 142-43.

143. See Burk & Graham, *supra* note 108, at 67; Burk, Graham, & Morin, *supra* note 108, at 142.

144. The particulars of the NCI adjustments are laid out more clearly in the paper of the Royal Statistical Society defending the Upton Statement. See *National Cancer Program*, *supra* note 109, at 224-29.

145. See *id.* at 227-28 (Royal Statistical Society).

146. See Burk & Graham, *supra* note 108, at 67-68. Dr. Burk preferred another similar adjustment based on the indirect method, using weighted averages, and US-1940 as the standard population, then combining the impact of changes both before and after 1950 in "time independent" terms. This adjustment yields the conclusion that 69.2% of the observed association between fluoridation and cancer, as reflected in the basic data, cannot be explained by demographic differences. See Burk, Graham, & Morin, *supra* note 108, at 142-43.

The change in CDRo/CDRe =  $[(1.274-1.137) - (1.268-1.181)] + [(1.204-1.094) - (1.238-1.166)] = +.088$ . This coefficient means that, relative to what might be expected in light of the demographic structure of the two populations here in question, adjusted cancer mortality grew about 9% faster in the fluoridated cities.

In terms of CDRo-CDRe, fluoridation is associated with  $[(47.9-22.8) - (39.4-28.1)] + [(26.1-13.2) - (34.9-25.8)] = 17.6$  excess cancer deaths per 100,000 persons exposed after 15-20 years. This adjusted figure, multiplied against 130 million Americans now drinking fluoridated water 15-20 years, works out to something on the order of 23,000 excess cancer deaths every year in the United States.

Whether adjusted or unadjusted figures are preferred, the size of the human casualty is so large and tragic that it is almost indecent to quibble over the numbers. Over twenty years have passed, and the casualty has mounted, since the NCI represented to Congress, on the basis of demographic adjustments which left out all available and pertinent data, that there is no association between fluoridation and cancer.

#### VII. THE JUDICIAL FINDINGS CONDEMNING FLUORIDATION

In the wake of the hearings in Congress just discussed, litigation seeking to resist or restrain further implementation of fluoridation began in several places in the United States. In Ohio it had recently been held that fluoridation was a constitutional exercise of police power.<sup>147</sup>

But in light of the recent publication of the basic data gathered under the direction of Dean Burk, opportunities for a new judicial hearing vastly improved. When such a hearing was sought, the Ohio Supreme Court commented:

A more difficult question is raised by the claim that fluoride is a carcinogen based on statistics that the cancer death rate has increased in certain cities with fluoridated water, while remaining the same in certain other cities which do not fluoridate. The evidence for this claim has not been tested by litigation and is disputed by other authorities. This evidence has also been submitted to federal agencies and to the Congress. If scientifically proved, these claims could raise legitimate questions as to the constitutionality of fluoridation as a public health measure, and, since these claims are based upon very recent studies, the purposes underlying

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147. See *City of Canton v. Whitman*, 337 N.E.2d 766 (Ohio 1975); *City of Cincinnati v. Whitman*, 337 N.E. 2d 773 (Ohio 1975).

the principle of *res judicata* would probably not be served by barring litigation to determine the validity of these claims.<sup>148</sup>

Reading this statement side by side with *Jacobson v. Massachusetts*,<sup>149</sup> and *Paduano v. City of New York*<sup>150</sup>, a suit before the judiciary attacking the constitutionality of mandatory fluoridation should succeed if it could be established by a fair preponderance of the evidence that the measure causes or contributes to the cause of cancer in man. But the court held that the judiciary had no original jurisdiction to consider the question, ostensibly because, in Ohio, the power to find the facts was vested by statute in an administrative agency.<sup>151</sup> The holding seems to have been created post hoc to avoid a touchy question.

It would have been easy for the court to rely on respectable authority to the effect that, where a constitutional question is fairly raised, and the outcome depends on facts, especially where personal rights are involved, exhaustion of administrative remedies is not necessary, and the judiciary can take jurisdiction to hear the evidence and decide the controversy on the merits.<sup>152</sup> No further headway was made in Ohio because the plaintiffs too well understood that impartial consideration by the administrative agency, where fluoridation was institutional policy, was as hopeless as an unbiased attitude by the NCI and other institutes in the USPHS.

#### A. *The Pittsburgh Case*

However, it was not necessary to wait very long for the opportunity to be fairly heard on the new evidence in Pittsburgh in the case of *Aitkended v. Borough of West View*.<sup>153</sup> The case was assigned to Judge John Flaherty who has since become the Chief Justice of Pennsylvania. The suit rested on a theory of nuisance, and went to hearing on a motion for a preliminary injunction. Expert witnesses from the National Cancer Institute, the National Academy of Sciences, the Royal Statistical Society, and the Royal College of

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148. *City of Cincinnati ex rel. Crotty v. City of Cincinnati*, 361 N.E.2d 1340, 1341-42 (Ohio 1977).

149. See 197 U.S. 11, 39 (1905).

150. 257 N.Y.S.2d 531, 542 (N.Y. Sup. Ct. 1965)

151. See 361 N.E.2d at 1342.

152. See, e.g., *United States v. Sisson*, 297 F. Supp. 902, 906 (D. Mass. 1969) *appeal dismissed*, 399 U.S. 267 (1970); *Bare v. Gorton*, 526 P.2d 379, 383-84 (Wash. 1974). This exception to the rule on exhaustion of administrative remedies is ultimately rooted in the "constitutional fact" doctrine in *Ng Fung Ho v. White*, 259 U.S. 276, 282-83 (1922) and *Ohio Valley Water Co. v. Ben Avon Borough*, 253 U.S. 287, 289 (1920).

153. No. GD-4585-78 (Allegheny County Court of Common Pleas, Pa.).

Physicians appeared to oppose the testimony of Dr. Burk and his colleagues, as had occurred in Congress.<sup>154</sup> After many sessions, followed by extensive summations on both sides, Judge Flaherty made his findings on November 16, 1978. He first described the main evidence by stating:

Over the course of five months, the court held periodic hearings which consisted of extensive expert testimony from as far away as England. At issue was the most recent time trend study of Dr. Burk and Dr. Yiamouyiannis, which compared the cancer mortality of 10 cities which fluoridated their water systems with 10 cities which did not fluoridate over a period of 28 years from 1940 to 1968. The study concluded that there was a significant increase in cancer mortality in the fluoridated cities.<sup>155</sup>

He defined the sole issue of fact as "whether fluoride may be a carcinogen."<sup>156</sup> He then found that "[p]oint by point, every criticism made of the Burk-Yiamouyiannis study was met and explained by the plaintiffs. Often, the point was turned around against defendants. In short, this court was compellingly convinced of the evidence in favor of plaintiffs."<sup>157</sup>

Judge Flaherty entered a preliminary injunction. Since the facts of the case had been fully tried, a motion was prepared for an amended complaint to attack the constitutionality of imposed fluoridation, and for a permanent injunction, based on danger to public health. The motion was about to be filed when raw power showed itself with lightning speed and impressive clout to limit the political damage.<sup>158</sup> The Chief Judge of the Commonwealth Court of Penn-

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154. The most critical dispute in the trial was whether the basic data (set forth in the appendix of this article) should be adjusted for age, race, and sex by the methods proposed by Dr. Dean Burk or Dr. John Yiamouyiannis in *National Cancer Program*, *supra* note 109, at 18-40, 61-72, or by the method proposed in the Upton Statement, *id.* at 104-20, 220-30. The defense of the Upton Statement collapsed when Dr. David Newell of the RSS conceded that he used data only for 1950 and 1970, and considered nothing in between "for the main and simple reason" that he was sent his data from the NCI. See *Aitkenhead v. Borough of West View*, No. GD-4585-78, Trial Transcript, May 9, 1978, at 72-72A, 75-6 (Allegheny County Court of Common Pleas, Pa.). Dr. Marvin Schneiderman of NCI admitted that such intermediate data should be used, but could give no specific alternative to linear regression analysis of intercensal CDRs between 1950 and 1970. See *id.* Trial Transcript, May 9, 1978, at 47-56.

155. See No. GD-4585-78, Opinion, Nov. 16, 1978, at 6.

156. *Id.* at 6.

157. *Id.* at 9.

158. The odd appellate history of the cause is summarized in *Aitkenhead v. West View*, 442 A.2d 364 (Pa. Commw. Ct. 1982), and *Aitkenhead v. West View*, 397 A.2d 878, 878-79 (Pa. Commw. Ct. 1979)

sylvania quickly stayed the preliminary injunction, ignoring the facts judicially found, as if public safety were not an issue.<sup>159</sup>

An administrative agency, which favored fluoridation as institutional policy, quickly and summarily entered “findings” which parroted USPHS propaganda.<sup>160</sup> Another administrative agency, which had a similar institutional policy, then entered an “order” which purported to deny the Borough of West View “permission” to obey Judge Flaherty’s injunction.<sup>161</sup> Events thus took bizarre turns to save a sacred cow.

Jurisdiction to enter the findings supporting the preliminary decree of November 16, 1978, was sustained on appeal shortly before Judge Flaherty was elevated to the Supreme Court of Pennsylvania.<sup>162</sup> The Commonwealth Court then held that the cause could go no further before the judiciary under the pretext that exclusive jurisdiction belonged to the administrative agency.<sup>163</sup> That was the end of the case, for all understood the notorious bias of the administrative agency which was not about to admit that it had promoted the dumping of carcinogenic agents into the environment. The appellate decisions left the findings of Judge Flaherty untouched, but departed widely from the traditional rule that, once a court of equity takes jurisdiction over the subject matter of a suit, such jurisdiction continues until the final decree, even though a basis for legal or administrative jurisdiction might later appear.<sup>164</sup>

As the USPHS tried to press-release its way out of the crisis in the United States, the findings of Judge Flaherty became highly influential abroad. In the British House of Lords, the Earl of Yarborough accurately summed up the meaning of the case:

Already this evening examples have been quoted of what occurred in America. What I read was rather different from the picture painted this evening. It was my understanding—if the case quoted was the case in Allegheny [County] in Pennsylvania—that it was found proven that fluoride was a danger to health. I know that

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159. See 397 A. 2d at 879-80.

160. See *Aitkenhead v. Borough of West View*, No. GD-4585-78, Exhibit C (Pa. Dept. of Health, Dec. 21, 1978), Plaintiffs’ Motion to Dismiss Preliminary Objections, Feb. 21, 1979 (Allegheny County Court of Common Pleas, Pa.).

161. See *id.* Exhibit A (Pa. Dept. of Env. Res., Jan. 8, 1979), Plaintiffs’ Motion to Dismiss Preliminary Objections, Feb. 21, 1979. See also *id.* Order Dismissing Preliminary Objections, May 25, 1979.

162. See *Aitkenhead*, 397 A.2d at 880.

163. See *Aitkenhead*, 442 A.2d at 366.

164. The rule can be traced to Lord Eldon in *Eyre v. Everett*, 2 Russ. 381 (Ch. 1826), and *Adley v. Whitstable*, 17 Ves. Jr. 316 (Ch. 1810). See also *Gulbenkian v. Gulbenkian*, 147 F.2d 173, 176 (2d Cir. 1945); *Rosen v. Mayer*, 113 N.E. 217 (Mass. 1916).

there was some legal wrangle about jurisdiction but I thought, on the facts presented by a number of experts, that that was the finding and that the facts had not been challenged but merely the jurisdiction of the court.<sup>165</sup>

So important was the meaning of this case that it also attracted the attention of an investigative commission of the Environment Ministry of Quebec, chaired by Dr. Benoît Bundock who had been the principal medical officer for special projects in the Canadian Ministry of Health. The commission had been diligently studying world literature on fluoridation for over a year when Judge Flaherty returned his findings. They obtained the entire record of the proceedings in Pittsburgh.

Dr. Bundock and his colleagues returned a comprehensive report on November 30, 1979, acknowledging the laboratory studies of Dr. Taylor and the basic data of Dr. Burk, specifically concurred with the findings of Judge Flaherty, and recommended executive suspension of all efforts to enforce the mandatory fluoridation law of Quebec.<sup>166</sup> This recommendation was accepted, and the moratorium has now continued almost twenty years through no less than six governments both pequist and liberal. So well regarded is this report that a standard ecology textbook, widely used in the secondary schools of Quebec, forthrightly acknowledges that fluoride in drinking water, as introduced through artificial fluoridation of public water supplies, is an environmental pollutant which causes cancer in man.<sup>167</sup>

### B. *The Alton Case*

One important early case sustaining the constitutionality of imposed fluoridation on sweeping notions of police power came out of the Illinois Supreme Court.<sup>168</sup> Some years later a suit was brought to enjoin fluoridation on allegations of new evidence not previously considered. The complaint was dismissed on demurer, but the Appellate Court of Illinois held that, taking the facts alleged as true, *res judicata* did not bar the suit, because *res judicata* cannot bar

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165. 402 PARL. DEB. H.L. (5th ser.) 1446-50 (1979). Another important contribution on the same occasion, including learned discussion on the epidemiological work of Dr. Dean Burk, came from the Deputy Speaker, Lord Douglas of Barloch. *See id.* at 1461-68. See also the recent and informed speeches by the Earl Baldwin of Bewdley in 593 PARL. DEB. H. L. (5th ser.) 1394-99, 1427-29 (1998).

166. *See* Jean-Benoît Bundock et al., *Les fluorures, la fluoruration, et la qualité de l'environnement*, MINISTÈRE DE L'ENVIRONNEMENT, GOUVERNEMENT DU QUÉBEC, at 1-2, 103-04, 107-08, 116-17, 197-200 (1979).

167. *See* JACQUES VIEL ET PAUL DARVEAU, *POUR UNE PENSÉE ÉCOLOGIQUE* 35 (1984).

168. *See* *Schuringa v. City of Chicago*, 198 N.E.2d 326 (Ill. 1964).

reconsideration of an issue on the basis of evidence which did not exist when the judgment was initially entered.<sup>169</sup> The remand occurred in 1972, and the case floundered in legal horseplay in the circuit court until a trial was forced eight years later in Alton, where Lincoln and Douglas had debated the Dred Scott case before the Civil War.

*Illinois Pure Water Committee v. Director of Public Health*<sup>170</sup> was tried from April through June 1980 before Judge Ronald Niemann. It was a case of uncommon ferocity with endless dilatory motions and preposterous contentions by the State, causing the trial to move at a snail's pace.

Judge Niemann endured the experience with almost inhuman patience. He had a highly skeptical attitude about the testimony offered on behalf of the plaintiffs and he reacted to the large numbers generated by the basic data with astonishment and disbelief. He discounted much of what he heard, but at length was satisfied that the plaintiffs had at least made a prima facie case of danger to public safety.<sup>171</sup>

Judge Niemann turned to the State and asked it to account for the association between fluoridation and cancer reflected by the basic data.<sup>172</sup> It should be kept in mind that Chicago is the home of the ADA which has at its command every expert in the world to support fluoridation as a public health measure. Even so, no world class scientists appeared to defend fluoridation as in the hearings before Congress and the trial in Pittsburgh.<sup>173</sup>

A state-hired epidemiologist went so far as to claim that the basic data were invalid because the data linking fluoridation with cancer had been selected and organized to meet the requirements of experimental design. In other words, he condemned the comparison of like with like before introducing fluoridation in the experimental cities, then observing the subsequent difference in cancer mortality between the two groups invalidated the data. Instead, he said, it was

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169. See *Illinois Pure Water Comm. v. Yoder*, 286 N.E.2d 155, 157-58 (Ill. App. Ct. 1972).

170. See No. 68-E-128 (Madison County Circuit Court, Ill.). The full record of the proceedings is not available to us, but the final decree entered by Judge Nieman on February 24, 1982, is fairly detailed in describing the procedural history and the scientific evidence presented on both sides. Moreover, the summations of the evidence and the legal arguments on both sides, only slightly abridged, have been conveniently and accurately published by the National Health Action Committee in 2 HEALTH ACTION, NO. 11-12 (1981) [hereinafter HEALTH ACTION].

171. See *Illinois Pure Water Comm'n v. Dir. of Pub. Health*, No. 68-E-128, Final Decree, Feb. 24, 1982, at 9-10, 20-1, 29 (Madison County Circuit Court, Ill.).

172. See *id.* at 10, 29, 33.

173. See *id.* at 10.

statistically necessary to select fluoridated and unfluoridated cities of the country at random,<sup>174</sup> which, of course, would have assured no control for known and unknown variables.

The same epidemiologist spoke of the need for adjustments for age, race, and sex, yet the plaintiffs' case in chief was full of detailed demographic adjustments of the basic data by the direct and indirect methods.<sup>175</sup> A large box of original data, rows of government publications, and a thick bundle of sheets of calculations were brought into the courtroom for inspection. The same epidemiologist made generalized claims that his adjustments wiped away any association between fluoridation and cancer, yet he conspicuously offered no specific figures or documented calculations in support of his projections.<sup>176</sup>

"What causes cancer?" asked the attorney general of Illinois in his summation, "Apparently, nobody knows."<sup>177</sup> Judge Niemann pondered the case for almost two years. On February 24, 1982, he entered judgment. He thus stated the law:

The presumption of the validity of legislation is overcome when the plaintiff makes a prima facie case. The traditional concept of burden of proof resting on the plaintiff, once met, shifts to the government to justify its intrusion into the life and health of the individual. When the State is involved, the traditional view is that the 'King can do no wrong.' Although the King must constantly act for his subjects, certainly he has been wrong a time or two.<sup>178</sup>

Judge Niemann specifically found, "[This legislation] exposes the public to the risk, uncertain in its scope, of unhealthy side effects of artificial fluoridation of public water supplies, is unreasonable, and [is] a violation of the due process clause of the Illinois Constitution of 1970."<sup>179</sup> He added with disappointment, "This record is barren of any credible and reputable scientific epidemiological studies and/or analysis of statistical data which would support the Illinois Legislature's determination that fluoridation of public water supplies is both a safe and effective means of promoting public health."<sup>180</sup>

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174. See HEALTH ACTION, *supra* note 170, 16-19 (Plaintiffs' Summation), and 53-54 (Defendant's Summation).

175. See *id.* at 20-26 (Plaintiffs' Summation).

176. See *id.* at 56-58 (Defendant's Summation).

177. *Id.* at 62 (Defendant's conclusion in final argument).

178. Illinois Pure Water Comm. v. Director of Pub. Health, No. 68-E-128, Final Decree, Feb. 24, 1982, at 29 (Madison County Circuit Court, Ill.).

179. *Id.* at 32.

180. *Id.* at 33.

Accordingly, Judge Niemann entered a permanent injunction enjoining the State and its subdivisions from further implementation of fluoridation in Illinois.<sup>181</sup>

A direct appeal was immediately taken to the Illinois Supreme Court. Like lightning, the injunction was stayed without any consideration of the evidence, as if power, and not public health, were the name of the game.<sup>182</sup> As night follows day, the Illinois Supreme Court reversed the judgment of the circuit court citing broad notions of police power.<sup>183</sup> Particularly offensive about the opinion were numerous petty and vindictive comments made against the plaintiffs' witnesses,<sup>184</sup> harmful to the dignity of the bench.

There was also dissimulation regarding the record, as may be illustrated. Judge Niemann had specifically found that the statute was "unreasonable," and therefore unconstitutional, because a prima facie case had been made that fluoridation exposes the population to a tangible risk, albeit uncertain in extent, of unhealthy side effects, and that no "credible and reputable" evidence had been given to justify the intrusion.<sup>185</sup> Yet the Illinois Supreme Court attempted to characterize Judge Niemann's position to be "not that the risk was so great that fluoridation was unreasonable, but that the question was shown to be debatable. Under these circumstances the plaintiffs have failed to show an unreasonable exercise of the police power."<sup>186</sup>

### C. *The Houston Case*

A third case arose in the Lone Star State, entitled *Safe Water Foundation of Texas v. City of Houston*.<sup>187</sup> The case brought to trial in January 1982, before Judge Anthony Farris. The petition prayed for a declaratory judgment that a recently enacted city ordinance imposing fluoridation in Houston was unconstitutional, and it sought an injunction prohibiting implementation of the ordinance within the municipality.<sup>188</sup>

The trial before Judge Farris moved at an energetic pace, not atypical of judicial proceedings in Texas. It was distinguished by polished testimony on both sides. The best available witnesses from

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181. See *id.* at 44.

182. See *Illinois Pure Water Comm. v. Director of Pub. Health*, 470 N.E.2d 988-89 (Ill. 1984).

183. See *id.* at 991-92.

184. See *id.* at 989-90.

185. See *id.* No. 68-E-128, Final Decree, Feb. 24, 1982, at 29, 32, 33.

186. 470 N.E.2d at 992.

187. No. 80-52271 (151st Jud. Dist., Tex.).

188. See *id.* at Second Amended Petition, Dec. 3, 1980, at 6-8.

several universities defended fluoridation. Cross-examination was crisp and businesslike. The rules of evidence were somewhat relaxed<sup>189</sup> so as to permit practical inclusion of more information in less time. The bench firmly managed the proceedings. The trial was efficient, ample, rigorous, and thorough.

Whereas in Pittsburgh and Alton the issue was reduced to whether or not fluoridation induces cancer in man, in Houston a larger range of evidence was considered. These issues included, aside from cancer, whether fluoridation induces genetic damage,<sup>190</sup> intolerant reactions,<sup>191</sup> and chronic toxicity,<sup>192</sup> not to mention other disputed points

Counsel and witnesses for the plaintiffs conceded that a rational controversy exists over the effectiveness and safety of fluoridation.<sup>193</sup> It was so stipulated, because a good measure of knowledge is awareness of both sides of the question. There were a few fanatical pro-fluoridation witnesses who made fabulous claims of Newburgh-Kingston orthodoxy, but they did not do well. Pro-fluoridation witnesses who displayed broader understanding were more appreciated.

At the conclusion of the trial, plaintiffs argued that they proved serious injury to the public health by a fair preponderance of the evidence, and that for this reason they were entitled to an injunction.<sup>194</sup> On the other side, counsel argued that there was a reason-

189. See *id.* Trial Transcript, Jan. 14, 1982, at 280-287. Relying on *Urquhart v. Barnes*, 335 S.W.2d 666, 669 (Tex. Civ. App. 1960), Judge Farris held that learned treatises could be marked, introduced and received to prove their existence and the basis of the opinion offered. This ruling was made during the testimony of Doctor Albert Burgstahler, one of the foremost scholars in the world on fluoride and fluoridation. The impact of Judge Farris' ruling was to promote an excellent record for this kind of case, as illustrated by Dr. Burgstahler's testimony on direct examination. See No. 80-52271, Trial Transcript, Jan. 14-15, 1982, at 276-429.

190. See, e.g., No. 80-52271, Trial Transcript, Jan. 18, 1992, at 539-59 (testimony of Dr. Pierre Morin). Dr. Morin testified on the laboratory studies of fluoride and mutagenesis noted by Dyson Rose and John Maurier in *Environmental Fluoride*, NAT'L RES. COUNCIL OF CANADA PUBL. NO. 16081 69-70 (1977), as confirmed by epidemiological data linking fluoride in drinking water and mongoloid births. See Ionel Rapaport, *Les opacifications du cristallin mongolisme et cataracte sénile*, 2 REV. ANTHROP. (Paris) 133 (1954); Ionel Rapaport *Contribution à l'étude du mongolisme. Rôle pathogénique du fluor*, 140 BULL. ACAD. NAT'L. MED. (Paris) 529 (1956).

191. See, e.g., No. 80-52271, Trial Transcript, Jan. 19, 1982, at 579-96 (testimony of John Lee, M.D., on the work of Dr. George L. Waldbott in *Fluoridation: A Clinician's Experience*, 73 SO. MED. J. 301 (1980), and his own clinical experience.).

192. See No. 80-52271, Trial Transcript, Jan. 19, 1992, at 609-14 (testimony of Dr. Lee on the strong association between the fluoride content of public water supplies and dental fluorosis, described by Rudolf Ziegelbecker, *Natürlicher Fluoridgehalt des Trinkwassers und Karies*, 122 GWF WASSER/ABWASSER 495 (1981)).

193. See No. 80-52271, Plaintiffs' Summation, Feb. 4, 1982, at 4.

194. See *id.* Plaintiffs' Summation, Feb. 4, 1982, at 4, 25.

able debate, and that for this reason the City was entitled to a judgment of dismissal.<sup>195</sup>

On February 22, 1982, Judge Farris denied the plaintiff's motion for permanent injunction, holding that the plaintiffs "had the burden to introduce overwhelming evidence in this case. Plaintiffs had to prove that no rational relationship exists between fluoridation of city surface water and the public health. Plaintiffs had to prove that no controversial facts exist."<sup>196</sup>

The plaintiffs immediately made a motion for new trial or amended order.<sup>197</sup> The argument on the motion, heard on April 19, 1982, centered on the burden of proof necessary to prevail. Judge Farris stated from the bench that the plaintiffs had proven harm by a fair preponderance of the evidence.<sup>198</sup> "If this were your run-of-the-mill litigation asking for injunctive relief," he said, "plaintiffs would have prevailed, but this is not the run-of-the-mill case."<sup>199</sup>

The question was one of burden of proof, a pure question of law. It was agreed by the court and counsel that "[t]hat is why we have appellate courts."<sup>200</sup> Counsel for the plaintiffs then asked for findings based on a fair preponderance of the evidence to prepare the record for appeal.<sup>201</sup> The court acceded to the suggestion, asking for proposals from both sides.<sup>202</sup> On May 24, 1982, Judge Farris entered his findings which were about as comprehensive and desirable as any judicial findings have been in environmental law.<sup>203</sup> The court found:

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195. See *id.* Defendant's Summation, Feb. 4, 1982, at 12-13.

196. See *id.* Opinion, Feb. 22, 1982, at 8. Judge Farris relied on *City of Houston v. Johnny Frank's Auto Parts Co.*, 480 S.W.2d 774 (Tex. Civ. App. 1972), which rests squarely of *Ferguson v. Skrupa*, 372 U.S. 726 (1963).

197. See No. 80-52271, Plaintiffs' Amended Motion for New Trial, Etc., April 14, 1982, at 1 (stating that, while the evidence at trial "did not eliminate the existence of a rational controversy, and was not intended or claimed to do so, the preponderance of the said evidence tended to show" that fluoridation causes or contributes to the cause of "cancer, genetic damage, intolerant reactions, and chronic toxicity, including dental mottling in man.").

198. See *id.* Hearing Transcript, Apr. 19, 1982, at 11.

199. See *id.* at 10.

200. See *id.* at 12.

201. See *id.* at 12-13.

202. See *id.* at 13-14.

203. The findings of Judge Farris, based on a fair preponderance of the evidence, are similar to the findings of Judge Miles Lord in *United States v. Reserve Mining Co.*, 380 F. Supp 11, 15-17 (D. Minn. 1974), and *United States v. Reserve Mining Co.*, 417 F. Supp 789 (D. Minn. 1976), affirmed 543 F. 2d 1210 (8th Cir. 1976). The dumping of taconite tailings was terminated on the principle that, where substantial evidence shows harm to human health, a question of public health should be judicially determined by resolving doubt against the introduction of foreign material into environment.

[That] the artificial fluoridation of public water supplies, such as is contemplated by [Houston] City Ordinance No. 80-2530 may cause or contribute to the cause of cancer, genetic damage, intolerant reactions, and chronic toxicity, including dental mottling, in man; that the said artificial fluoridation may aggravate malnutrition and existing illnesses in man; and that the value of said artificial fluoridation is in some doubt as to the reduction of tooth decay in man.<sup>204</sup>

This assessment of the facts, based on a fair preponderance of the evidence, was a reasonable and impartial picture of scientific reality as it was then understood.

If the municipal government of Houston had acted rationally in the face of these findings of fact, effectively a declaratory judgment on the weight of the evidence, the city council would have noted the danger, repealed the ordinance in the public interest, and perhaps established an investigative commission as had occurred in Quebec. But a city councilwoman, smiling broadly as cameras flashed, started the machinery which injected into public drinking water a substance judicially found, after an intensive and disciplined trial of the facts, to be carcinogenic and mutagenic.<sup>205</sup>

An appeal was taken, based mainly on a venerable old case decided by the Texas Supreme Court which held that, where exercise of police power rests on assumed facts, those facts may be judicially examined and, if upon such inquiry it fairly appears that the means chosen are disproportionate to the end desired, the ordinance should be declared unconstitutional.<sup>206</sup> This principle is typical of the best natural law jurisprudence which prevailed earlier in the twentieth century. Given the findings of Judge Farris, fluoridation was unconstitutional under this principle, because endangering the public with cancer and other ailments cannot be justified by a dubious possibility of reducing tooth decay. The Texas Court of Appeals expressly found that a fair preponderance of the evidence showed "the injection of fluoride into the City's water system would be harmful,"<sup>207</sup> but, with the full support of higher tribunals, held that such proof of harm was not enough to arrest an exercise of police power.<sup>208</sup>

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204. See No. 80-52271, Findings of Fact, May 24, 1982, at 1-2.

205. See *id.* at 1-2.

206. See *Houston & T.C.Ry. v. City of Dallas*, 84 S.W. 648, 653-54 (Tex. 1905).

207. *Safe Water Found. of Tex. v. City of Houston*, 661 S.W.2d 190, 192 (Tex. App. 1983), *writ ref'd n.r.e.* (Tex. 1984), *appeal dismissed* 469 U.S. 801 (1984).

208. See *id.* at 192-93.

Therefore, it is evident that, at least for the time being, we are saddled with Hugo Black's positivist and anti-libertarian doctrines, and some years must pass before our judiciary sees the need for a change of course. Years must pass as surely as years had to pass from the death of Sir John Elliot following his arrest in 1630 for a speech in Parliament, and the grand day in 1667 when the House of Lords reversed the judgment of the King's Bench which denied Sir John release on a writ of habeas corpus.<sup>209</sup> Meanwhile, the findings of Judge Flaherty, Judge Niemann, and Judge Farris have since been quoted to legislative bodies from Montreal to Honolulu and from London to Canberra. Not always, but occasionally legislators have listened.

There has been other interesting political fallout from these judicial findings. On August 9-10, 1983, a strategic conference of pro-fluoridation activists, most of them deeply involved in ADA and USPHS politics, took place at the University of Michigan.<sup>210</sup>

The proceedings began with a presentation by a special counsel of the American Dental Association.<sup>211</sup> The gentleman was introduced as a member of the rules committee of the Illinois Supreme Court, so it is clear that he was a powerful insider.<sup>212</sup> He told the audience that it was he who had secured the stay of the injunction from the Illinois Supreme Court issued by Judge Niemann.<sup>213</sup>

Counsel did not clearly inform his listeners that, from 1978 through 1982, three American judges in courts of superior jurisdiction had fully heard evidence on both sides: the first of these judges, by then a supreme court justice of eminent standing, entered findings undisturbed on appeal, saying he was compellingly convinced of the danger of cancer; the second entered findings of no credible or reputable evidence to redeem fluoridation; and the third had entered comprehensive findings based on a preponderance of the evidence, expressly sustained on appeal, condemning fluoridation as posing a tangible danger of cancer and a good many other human diseases, while expressing doubt even of its capacity to reduce tooth decay.

Another speaker at the University of Michigan announced a significant change of litigation policy to perpetuate and expand

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209. See, e.g., HENRY HALLAM, CONSTITUTIONAL HISTORY OF ENGLAND 299-300 (Garland Pub. 1978) (1846).

210. The proceedings were recorded verbatim in FLUORIDATION: LITIGATION & CHANGING PUBLIC POLICY, (Michael W. Easley et al. eds. 1983) [hereinafter CHANGING PUBLIC POLICY].

211. See *id.* at 3-11.

212. See *id.* at 3.

213. See *id.* at 5-6; see also Illinois Pure Water Comm., Inc. v. Director of Pub. Health, 470 N.E.2d. 988, 989 (Ill. 1984).

fluoridation in future years. Whereas in earlier years it had been standard practice to invite trials, as had occurred in a number of earlier fluoridation cases, a new policy, following the trials in Pittsburgh, Alton, and Houston, was announced: "By avoiding a trial on the merits of fluoridation, we prevent the subjection of what we feel is a purely scientific issue to scrutiny by a judge who is likely not to have proper scientific training with which to make an objective ruling."<sup>214</sup> To recapitulate this interesting phase of legal and scientific history, in the trials in Pittsburgh, Alton, and Houston, one trial judge after another heard the evidence and found that fluoridation appears to be injurious to human health. Therefore, the new ADA-USPHS policy is to avoid, by all means, a trial on the merits.

This policy has been remarkably successful for over fifteen years. No case has ever gotten to trial. No pro-fluoridation witness has been cross-examined in court. Sales pitches continue before legislative bodies with a fair degree of success in the sense that mandatory or imposed fluoridation has considerably expanded. In legislative committees, witnesses usually cannot be effectively held to account for what they say.

We understand that the judicial process is far from perfect. But, now, the "purely scientific issue" mentioned at the University of Michigan -- and fluoridation is a purely scientific issue until legally imposed -- is tried in legislative proceedings by frantic political lobbying, maneuvers, ambushes, speechifying, applause, horse-trading, buttonholing, demagoguery, infighting, and posturing.

#### VIII. THE COMING END OF FLUORIDATION

One of the results of the hearings in Congress on September 21 and October 12, 1977, was a suggestion that the National Toxicology Program (NTP) should investigate fluoride.<sup>215</sup> Over twelve years, the NTP sputtered. At last some news was leaked to the press. On December 28, 1989, the *Medical Tribune* reported on the front page:

Fluoride appears to have caused bone cancer in rodents in a recently completed National Toxicology Program study, and the chemical is now at risk of being classified as a carcinogen, according to internal documents and statements obtained by the *Medical Tribune* from the Environmental Protection Agency.<sup>216</sup>

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214. CHANGING PUBLIC POLICY, *supra* note 210, at 84.

215. See *National Cancer Program*, *supra* note 109, at 319.

216. Joel Griffiths, *Fluoride Linked to Bone Cancer in Fed Study*, 30 MED TRIB., DEC. 28, 1989, 1,

Press fanfare erupted, and the main feature of this media blitz was the impression that there had been a discovery of something entirely new and previously unknown, as if the work of Alfred Taylor, Dean Burk and many others had never been done. Soon, however, the public was assured that all is well.<sup>217</sup>

The "official" evaluation, while leaving much to be desired, gives a very different impression. The authors conceded that, although the numbers were small, the data gathered by the NTP study reveal a statistically significant dose-response trend of osteosarcomas of bone in male rats.<sup>218</sup> Additionally, the authors cited no less than eleven studies published in good journals, showing that fluoride is capable of inducing genetic mutation in mammalian cells and fruit flies, aggravating chromosomal aberrations in animal systems, and causing morphological transformations in Syrian hamster ovary cells.<sup>219</sup>

The article concludes with the sedate comment that "it would appear prudent to re-examine previous animal studies and human epidemiological studies, and perform further studies as needed to evaluate more fully any possible association between exposure to fluorides and the occurrence of osteocarcomas of bone."<sup>220</sup> We join this recommendation, adding that meanwhile artificial fluoridation of public water supplies ought to be halted across the country pending such review of the evidence, as was recommended by Dr. Bundock and his colleagues in Quebec, and that nobody having any direct or indirect interest in the conclusions ought to participate.

The recommendation for reevaluation has not been fulfilled. There are interesting reasons why.

On May 1, 1990, the acting Director of the Criteria and Standards Division, Office of Drinking Water in the United States Environmental Protection Agency, received a memorandum from Dr. William Marcus, Senior Scientific Advisor in the Criteria and Standards Division.<sup>221</sup> Dr. Marcus reviewed the NTP study and

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217. See e.g., *Additive approved, Federal study says fluoride no threat*, PITTSBURGH POST-GAZETTE, Feb. 20, 1991, at 1-2.

218. See John Bucher et al., *Results and Conclusions of the National Toxicology Program's Rodent Carcinogenicity Studies with Sodium Fluoride* 48 INT. JOUR. CANCER 733, 734-35 (1991).

219. See *id.* at 736.

220. *Id.*

221. Dr. Marcus' historic memorandum of May 1, 1990, is a matter of public record. See *Marcus v. Environmental Protection Agency*, No. 92-TSC-5, Complainant's Exhibit 56, mentioned in the Recommended Decision and Order, Dec. 3, 1992, at 5 (U.S. Dep't Labor).

pointed to results suggesting carcinogenic potential of fluoride.<sup>222</sup> He also cited the most recent published version of the epidemiological data gathered and adjusted under the direction of Dr. Burk.<sup>223</sup> Dr. Marcus urgently recommended an independent review by the EPA.<sup>224</sup>

To put it mildly, Dr. Marcus' memorandum did not inspire a warm and friendly response from the management of the EPA. In due course, Dr. Marcus sent his document to the Administrator of the EPA and to his union representative who in turn released it to the press. The public reaction was rather agitated, causing a bureaucrat from the "health effects branch" within the agency to approach Dr. Marcus' supervisor with the suggestion that he memorandum sent "the wrong message to the public."<sup>225</sup> Shortly thereafter, Dr. Marcus was accused of "violent and aberrant behavior" and discharged.<sup>226</sup>

On December 3, 1992, following extended hearings, an administrative law judge found that Dr. Marcus had been fired on false pretexts because of his warnings against artificial fluoridation of public water supplies.<sup>227</sup> The ALJ ordered Dr. Marcus reinstated with back salary, money damages, and attorney's fees,<sup>228</sup> and, on February 7, 1994, the Secretary of Labor affirmed the reinstatement as ordered.

The simple and blunt meaning of this episode is impossible to misunderstand. The scientists, lawyers, and engineers at the national headquarters of the EPA have since used their union for protection against their administrators who, as the case of Dr. Marcus demonstrates, have a political agenda not necessarily in the public interest, and certainly not in the interest of the professionals at EPA who desire the independence required to act honestly for the general welfare.

Under the protection of their union they have made plain that their administrators may set policy, but that they as professionals refuse to conceal the errors of policy set. The subject of fluoridation has come to their attention. On July 2, 1997, the union members, at a

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222. *See id.* at 1-3.

223. *See id.* at 3.

224. *See id.* at 4.

225. *Id.*, Recommended Decision and Order, Dec. 3, 1992, at 5.

226. *See id.* at 6-9.

227. *See id.* at 25-28.

228. *See id.* at 30-31.

duly called meeting,<sup>229</sup> voted unanimously in support of a resolution that read:

Our members review of evidence over the last eleven years, including animal and human epidemiology studies, indicate a causal link between fluoride/fluoridation and cancer, genetic damage, neurological impairment, and bone pathology. Of particular concern are recent epidemiology studies linking fluoride exposures to lower I.Q. in children. As professionals who are charged with assessing the safety of drinking water, we conclude that the health and welfare of the public are not served by the addition of this substance to the public water supply.<sup>230</sup>

If artificial fluoridation of public water supplies causes cancer in man, as the published laboratory studies and epidemiological surveys indicate, and as judicial findings confirm, then nobody should be surprised to see that it produces a host of other human ailments. Who should be surprised to learn that dumping a carcinogen and mutagen in public drinking water has not only been accompanied by devastating increases in cancer mortality, but may also reduce human intelligence?

The end of fluoridation will take time, but not because time is necessary to develop essential scientific information. We already

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229. At the time of this resolution, scientists, lawyers, and engineers at the national headquarters of EPA were organized in the National Federation of Federal Employees, Local 2050. These professional people are now organized as the National Treasury Employees Union, Chapter 280.

230. This resolution has been released to the press by the professional union at the national headquarters of EPA, but, not surprisingly, the government of the United States has not seen fit to publish the document. We are indebted to Dr. J. William Hirzy at EPA for our copy. Aside from the material cited in this article, the evidence considered in support of this resolution included, on the question of cancer, PERRY COHN, NEW JERSEY DEPARTMENT OF HEALTH, A BRIEF REPORT ON THE ASSOCIATION OF DRINKING WATER FLUORIDATION AND THE INCIDENCE OF OSTEOSARCOMA AMONG WHITE MALES (1992). This epidemiological survey is particularly important because its finding with respect to human males parallels the NTP study which suggests that sodium fluoride induces osteosarcomas in male rats. To the same effect, is John Yiamouyiannis, *Fluoridation and Cancer: The Biology and Epidemiology of Bone and Oral Cancer Related to Fluoridation*, 26 FLUORIDE 83 (1993). Also considered in support of the resolution of July 2, 1997, on the question of bone pathology was Lawrence Riggs et al., *Effect of Fluoride Treatment on the Fracture Rate in Postmenopausal Women with Osteoporosis*, 322 NEW ENG. J. MED. 802 (1990). Taken into account on the question of neurological impairment was Phyllis J. Mullenix et al., *Neurotoxicity of Sodium Fluoride in Rats*, 17 NEUROT. & TERAT. 169 (1995). Since published to the same effect is Julie Varner et al., *Chronic Administration of Aluminum Fluoride or Sodium Fluoride to Rats in Drinking Water: Alterations in Neuronal and Cerebrovascular Integrity*, BRAIN RES. 784 (1998) 284-98. The epidemiological studies on fluoride exposure and the I.Q.'s of children were done in China. They are abstracted in English as X. S. Li et. al., *Effect of Fluoride Exposure on Intelligence in Children*, 28 FLUORIDE 189 (1995), and L.B. Zhao et. al., *Effect of a High Fluoride Water Supply on Children's Intelligence*, 29 FLUORIDE 190 (1996).

know enough to appreciate the enormity of the risk. We knew enough many years ago.

But the end will finally arrive, because, as Aristotle said at the beginning of the *Metaphysics*, all men by nature desire to know.<sup>231</sup> Ignorance cannot be perpetuated forever. The necessary legal and scientific reforms will come in the twenty-first century. Our descendants will look back on us, and they will be amazed.

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231. See BASIC WORKS OF ARISTOTLE 689 (W.D. Ross trans., Richard McKeon ed. 1941).

## APPENDIX

TABLE 1. The Basic Data in Unweighted Averages for 1940-1950 and 1953-1968.

Year	CDRo Control Cities (-F)	CDRo Experimental Cities (+F)
1940	158.4	155.5
1941	152.4	155.2
1942	153.9	157.2
1943	159.2	161.6
1944	162.5	162.3
1945	165.6	168.4
1946	168.5	171.6
1947	174.5	172.6
1948	178.0	173.2
1949	179.5	179.4
1950	178.9	179.6
1953	188.2	191.3
1954	185.6	194.1
1955	189.5	196.3
1956	189.1	203.6
1957	188.4	207.1
1958	188.6	203.5
1959	193.0	204.7
1960	191.1	207.0
1961	190.4	209.3
1962	190.2	207.2
1963	189.4	210.9
1964	190.3	212.6
1965	194.3	218.6
1966	193.4	224.8
1967	198.8	224.4
1968	199.4	226.4

FIGURE 1. The Basic Data in Unweighted Averages for 1940-1950 and 1953-1968.<sup>a</sup>

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<sup>a</sup> The vertical axis represents observed cancer death rates per 100,000 (CDRo). The horizontal axis represents years. The white diamonds represent the control (-F) cities. The black diamonds represent the experimental (+F) cities. The vertical lines touching the horizontal axis at 1952 and 1956 represent the period during which fluoridation was started in the experimental cities.

TABLE 2. The Basic Data in Weighted Averages for 1940-1950 and 1953-1968.

Year	CDRo Control Cities (-F)	CDRo Experimental Cities (+F)
1940	159.9	155.6
1941	154.5	156.3
1942	154.7	158.3
1943	159.8	162.4
1944	163.2	164.2
1945	167.0	168.9
1946	169.9	171.8
1947	175.0	173.9
1948	177.8	174.3
1949	180.4	181.1
1950	179.0	180.8
1953	185.9	190.2
1954	182.6	192.3
1955	186.1	193.9
1956	187.6	201.6
1957	185.2	204.5
1958	184.3	199.7
1959	188.8	201.0
1960	185.0	205.8
1961	185.7	206.0
1962	183.8	204.6
1963	184.8	208.6
1964	184.8	208.7
1965	187.0	212.5
1966	188.2	218.5
1967	190.1	218.4
1968	191.1	219.7

FIGURE 2. The Basic Data in Weighted Averages for 1940-1950 and 1953-1968.<sup>b</sup>

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<sup>b</sup> The vertical axis represents observed cancer death rates per 100,000 (CDRo). The horizontal axis represents years. The white diamonds represent the control (-F) cities. The black diamonds represent the experimental (+F) cities. The vertical lines touching the horizontal axis at 1952 and 1956 represent the period during which fluoridation was started in the experimental cities.

# MEASURING JUSTICE FOR NATURE: ISSUES IN EVALUATING AND LITIGATING NATURAL RESOURCES DAMAGES

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## I. INTRODUCTION

Shortly after midnight on a chilly March 24, 1989, the oil tanker Exxon Valdez ran aground on Bligh Reef in Prince William Sound, Alaska.<sup>[1]</sup> The damaged vessel immediately began gushing crude oil into the Sound, and over the next two days an estimated 11,000,000 gallons of crude oil were discharged into the sensitive marine environment before emergency crews could stop the release.<sup>[2]</sup>

The oil spill spread across Prince William Sound and the Gulf of Alaska, contaminating approximately 1,100 miles of shoreline<sup>[3]</sup> along Prince William Sound, the Kenai Peninsula, the lower Cook Inlet, the Kodiak Archipelago, and the Alaska Peninsula.<sup>[4]</sup> Damaged areas included several coastal communities, the Chugash National Forest, four national wildlife refuges, three national parks, five Alaskan State parks, four Alaskan Critical Habitat Areas, and an Alaskan Game Sanctuary.<sup>[5]</sup> The oil slick killed over 350,000 shore nesting birds<sup>[6]</sup> and several thousand marine mammals, mostly sea otters, and posed a threat to salmon and herring fisheries in the area.<sup>[7]</sup>

Over the next few years, Exxon spent approximately \$2 billion in remediation costs, \$5 billion in civil litigation punitive damages, \$287 million in compensatory damages to commercial fishermen, \$20 million in an out-of-court settlement to Alaska natives, and \$125 million in criminal fines and restitution payments to state and federal agencies.<sup>[8]</sup> However, simply cleaning up the spill and compensating injured parties was insufficient to remedy the environmental harms. During the cleanup, an extensive study program was conducted to assess the damage to the natural resources resulting from the disaster above and beyond the damage addressed by the remedial actions.<sup>[9]</sup> This assessment focused on the immediate injury to the environment, the long-term alteration of species populations, the sublethal or latent effects of the spill, the ecosystem-wide effects, and degradation of habitat.<sup>[10]</sup> Based on this assessment, Exxon entered into a settlement agreement with federal and state governments to pay \$900 million for the costs of restoring and replacing damaged natural resources.<sup>[11]</sup> The agreement provided for up to \$100 million in additional funding for future restoration if needed.<sup>[12]</sup>

Three federal and three state trustees were designated for administering the restoration funds.<sup>[13]</sup> All funds were designated to restore, replace, enhance, or acquire the equivalent of natural resources injured, as well as reduced or lost services provided by these resources as a result of the spill.<sup>[14]</sup> As of the winter of 1997, the trustees had implemented several general restoration projects in damaged areas and acquired approximately 485,000 acres as replacement for damaged resources, mostly for enhancing the recovery of injured wildlife populations through additions to existing wildlife refuges.<sup>[15]</sup> The natural resources of Prince William Sound have yet to fully recover, and the trust continues to monitor and research the implementation of the restoration program.<sup>[16]</sup>

The Exxon Valdez disaster highlights many of the issues that arise when natural resource damages are included in an assessment of environmental harm. Compared to the costs of investigation or remediation, natural resource damages are not readily accounted for and measured. Therefore, determining suitable methods for measuring the value of natural resources and the extent of recoverable damages are controversial subjects.

The purpose of this paper is to discuss what natural resources are for the purpose of defining their value, to outline the methods for valuing damages to natural resources and the services they provide, and to review the legal framework for litigating natural resource damages with a discussion of causes of action under the common law and under federal natural resource protection statutes. The paper concludes with a summary of shortcomings in the current legal framework and provides suggestions for improving the existing system.

## II. CHARACTERIZATION OF NATURAL RESOURCES

In any discussion of natural resource damages, it is important to define "natural resources." Natural resources are generally thought of as the individual elements of the natural environment that provide economic and social services to human society. Traditional definitions of natural resources were limited to resources providing quantifiable economic products such as industrial minerals, energy sources, timber, and agricultural land.[\[17\]](#) However, in recent decades there has been a growing recognition that natural resources, as ecosystems, provide a larger array of services to society than merely as a source of industrial raw materials.[\[18\]](#) As these services have come to be recognized, the definition of natural resources has expanded to include ecological elements and the services derived from ecosystem processes.[\[19\]](#)

Ecosystem services provided by natural resources that have been investigated since the mid-1960s include the function of wetlands and the effect of watersheds on water quality; the cycling of chemicals and nutrients through ecosystems; and the interaction among natural resources, the atmosphere, and the oceans to regulate climate.[\[20\]](#) A modern list of services provided by natural resources includes the purification of air and water, flood control, detoxification and decomposition of wastes, the formation and maintenance of fertile soils, pollination of crops, control of agricultural pests, and recycling of matter in addition to providing material benefits such as food supplies, industrial products, construction materials, energy sources, and medicines.[\[21\]](#)

Additionally, natural resources are part of society's cultural fabric. Throughout American history, the arts, literature, and philosophy have been influenced by the character of the natural landscape. From the diaries of the Lewis and Clark expedition to the writings of Henry David Thoreau, Mark Twain, and the poetry of Walt Whitman, American culture is pervaded by a sense of place in its natural environment, which is reflected in society's value of natural resources. This value is uniquely expressed in the land ethic of Aldo Leopold, which challenged the perspective of natural resources as simply a commodity, instead emphasizing the moral value of the natural environment of which humanity is a part.[\[22\]](#) Based on such cultural premises, the definition of natural resources has been extended to include an aesthetic element which recognizes that mere existence of the resource has value to people.[\[23\]](#)

Such an expansive list of services provided by natural resources creates complexity in defining the extent of these resources in the particular circumstances of natural resource damage litigation. It is one thing to measure the direct loss of economic value of natural resources such as fish or timber, but quite another to measure the resulting negative externalities such as the loss of ecological services or the value of the knowledge of their existence to individuals or to society as a whole. The following section addresses the difficult issue of valuing natural resources for the purpose of litigation damage assessment.

### III. VALUATION OF NATURAL RESOURCES

One of the most significant aspects of natural resource damage litigation is the assignment of value to the damaged resources. Due to the expansive nature of the definition of natural resources and the difficulty in measuring resource values, the litigated value of damages can vary significantly depending on the philosophical basis of assigning value and the valuation method used. This section outlines the different philosophical bases for valuing natural resources and the methods used in measuring the value of damages to natural resources

#### *A. Approaches to the Valuation of Natural Resources*

It is generally recognized that there are essentially two different philosophical bases of assigning value for natural resources, anthropocentric (or utilitarian) approaches and biocentric (or intrinsic value) approaches.[\[24\]](#) These two approaches are not mutually exclusive, but do assign different values to the same resource under similar circumstances.

Anthropocentric approaches can be characterized as utilitarian in that they assign value to natural resources insofar as they provide satisfaction to humans, either individually or as a society.[\[25\]](#) Anthropocentric values can be divided into use values, the worth of natural resources derived from direct or indirect use, and existence values, the worth of natural resources to people beyond their use value.[\[26\]](#)

Use values are the least controversial of natural resource values, as they are the easiest to identify and measure as consistent with existing markets. Use value is not limited to consumptive uses, such as timber production, but also includes nonconsumptive uses such as recreation in a resource area,[\[27\]](#) and indirect use values such as the value of plankton in the food chain.[\[28\]](#)

Anthropocentric values that are not use values are considered existence values.<sup>[29]</sup> These are the values to individuals and society in simply knowing the natural resources exist. Existence value can be characterized as a vicarious value, which is the value to a particular individual in the knowledge that the natural resource exists, or as an inter-temporal value, which is the value of conserving the resource for future generations.<sup>[30]</sup> Additionally, existence value contains an element of value related to the option that conservation of the natural resource provides for future use. For example, an endangered plant species may have undiscovered medical uses for which the preservation of the species provides an option value.<sup>[31]</sup>

As a separate category of valuation, the biocentric approach can be generally characterized as a rights-based approach, that recognizes the intrinsic value of natural resource existence independent of human satisfactions.<sup>[32]</sup> Characteristic of this approach is the philosophy of deep ecology,<sup>[33]</sup> the animal rights movement,<sup>[34]</sup> and the land ethic of Aldo Leopold.<sup>[35]</sup> Intrinsic value is not readily measurable in monetary worth, as intrinsic value is a matter of right. The measure of damages to natural resources under an intrinsic valuation system would necessarily be punitive to serve as a deterrent from violating an intrinsic right.<sup>[36]</sup>

From an economic perspective, the preferred method of valuing natural resources is to quantify anthropocentric values of use and existence through some form of utilitarian cost-benefit analysis.<sup>[37]</sup> Anthropocentric values are favored because they are theoretically measurable, and the process of measuring damages in a litigation context is by definition anthropocentric. Additionally, intrinsic values are not universally recognized, and the process of monetizing the intrinsic value of an injury to natural resources is speculative. The use of a valuation approach is consistent with current law, which does not recognize legal rights for natural resources apart from the interests that persons or recognized parties have in the resources.<sup>[38]</sup>

The value of a natural resource is the sum of the legally recognized elements of value, insofar as they can be separated and independently measured, but use, existence, and intrinsic value are not necessarily exclusive.<sup>[39]</sup> Therefore, elements of intrinsic value may be included in measurements of use and existence values of natural resources. To understand which values are included in a measure of natural resource value, it is important to have a basic understanding of the various economic methods used to measure natural resource value.

### *B. Methods of Quantifying the Value of Natural Resources*

Several methods have been developed over time for measuring the value of natural resource damages. The traditional approach at common law was to measure damages as the market value of the injured natural resources, or where market value was inappropriate or unavailable, the cost to restore or replace the resources.<sup>[40]</sup> As the concept of natural resources has broadened to include services and nonuse values, natural resource valuation methods have been developed that account for nonmarket values. These methods are generally classified as either direct methods such as contingent valuation (measuring the stated value), or indirect methods such as behavioral use valuation (measuring revealed value).<sup>[41]</sup> Each of these methods has advantages and shortcomings, as discussed below.

#### *1. Market Valuation*

Market valuation of natural resources provides a relatively certain measure of resource value, as market value is reflected in the price for resources as traded in a definable market. Under a market valuation approach, the compensable natural resource damages would be the total loss of market value for each of the individually damaged elements and the value of lost services of the natural resource. Use of market valuation is commonly held to be the most economically efficient measure of damages.<sup>[42]</sup> In theory, market value is the level of compensation to which litigating parties would agree out of court, if no transaction costs were incurred.<sup>[43]</sup>

However, market valuation has limited use in a natural resource damages context. Natural resources often have unique and peculiar values and, in many circumstances, are not openly traded on a free market. Market valuation does not account for the loss of nonmarketed use values such as indirect ecosystem services or for existence or intrinsic nonuse values. Market valuation is generally accepted as not reflective of the true value of damages to natural resources and, in general, will tend to underestimate their true value.<sup>[44]</sup>

## 2. Restoration and Replacement Cost

Restoration of a damaged natural resource is an appealing remedy because it directly addresses the harm. Restoration cost is the only valuation method that accounts for the uniqueness of each particular resource and the finite supply of natural resources in general.[\[45\]](#) Additionally, restoration cost incorporates, to some degree, all measures of natural resource value—use, existence, and intrinsic—to provide a full measure of damages.[\[46\]](#)

However, restoration cost does not directly measure the value of the damaged resource and can result in costs greatly exceeding the value of the damaged natural resources as measured by other methods.[\[47\]](#) It is generally accepted that a measure of damages that is disproportionate to value is contrary to the policy of promoting economic efficiency.[\[48\]](#) Restoration cost presents technical problems as well. What should be considered baseline conditions, what restoration procedures are appropriate, and what degree of restoration is considered adequate are all questions that need to be addressed.[\[49\]](#) For injuries where extensive habitat destruction or loss of biodiversity has occurred, the restoration of various ecosystem functions may not be possible.[\[50\]](#)

Where restoration is not feasible, a similar alternative is to replace the damaged natural resources by acquiring comparable resources for conservation.[\[51\]](#) Replacement value has the advantage of being relatively easy to measure and can provide an effective remedy for the loss of many use and existence values.[\[52\]](#) However, replacement does not address the value of loss for unique resources and does not account for the loss of the combined value that the injured natural resource and its replacement had prior to the injury.[\[53\]](#)

## 3. Contingent Valuation

Contingent valuation is a recently developed method of economic valuation where the value of a natural resource and its services are measured by surveying a sample of the population to provide the price they would be willing to pay to preserve or restore that resource.[\[54\]](#) A variation of contingent valuation is the contingent behavior method, which asks the survey respondents how much they would be willing to modify their behavior patterns to protect or restore a natural resource.[\[55\]](#)

Contingent valuation provides a direct method of measuring natural resource values without resorting to the market valuation method. The technique is relatively simple and easy to implement, and provides a direct means of including existence value in a measure of natural resource damages.[\[56\]](#) The survey techniques used in contingent valuation studies also provide a good database of information for indirect methods of valuing natural resources.[\[57\]](#)

The use of contingent valuation in natural resource damage estimates has been highly controversial. Critics of the method argue that the method is hypothetical and generates unreliable damage estimates, produces results that cannot be independently validated, determines value from persons lacking sufficient information to be estimating value, and is not consistent with principles of valuation that are basic to the economics profession.[\[58\]](#) These deficiencies in contingent valuation arguably inhibit the method from accurately measuring use and existence values.[\[59\]](#)

Most of the concerns regarding contingent valuation are related to the manner in which the survey is designed and implemented.[\[60\]](#) Proponents of contingent valuation have argued that these criticisms are derived from improper design and execution of surveys, and that recent developments in the practice of contingent valuation has increased its use in measuring natural resource damages.[\[61\]](#) Suggested characteristics for obtaining accuracy in contingent valuation surveys include clearly identifying and describing the resource and the impact to be valued, providing a means of establishing that the respondent is familiar with the resource, framing the survey questions so as to avoid implicating political controversies,[\[62\]](#) using yes-no or multiple-choice question format, and to the extent possible avoiding open-ended questions.[\[63\]](#)

## 4. Behavioral Use Valuation

Behavioral use valuation is a broad category of economic methods that can be used to indirectly measure the use value of natural resources by observing differences in behavioral patterns. The change in the behavior of resource users as the result of an injury to natural resources reflects a corresponding reduction in welfare, which is measured under different tests as a proxy to the loss in resource value.[\[64\]](#) One advantage to using behavioral use valuation is that it is less prone

to error resulting from the individual bias and hypothetical nature of the contingent valuation method.[\[65\]](#)

A commonly used behavior use valuation method is the hedonic model, which models the change in value of marketed goods with characteristic attributes that are influenced by an injury to natural resources.[\[66\]](#) The hedonic model typically uses pricing in the housing market as the measured variable to evaluate natural resource damage value, as several studies have indicated that proximity to environmental risks are capitalized in the housing market.[\[67\]](#) However, hedonic modeling has been criticized for being unable to separate the impact to value resulting from natural resource damage from high transaction costs and other characteristics of the location that factor into housing prices. Hedonic modeling is prone to underestimate the value of marginal damage to natural resources, and for many natural resources, there is a limited housing market in the area of the resource from which hedonic valuation could be calculated.[\[68\]](#)

Travel cost valuation offers a more appropriate behavioral use valuation method for measuring the value of natural resource damages. Users of natural resources incur travel costs to access the resources, and theoretically the value to the users is reflected in the amount of travel costs they are willing to incur.[\[69\]](#) Travel cost valuation is advantageous because it is relatively easy to obtain reliable data, which may already be available for some natural resource locations.[\[70\]](#) However, similar to hedonic modeling, travel cost valuation is limited to measuring only use values, as nonuse values are not captured in travel expenditures.[\[71\]](#) Additionally, it may not be adequate for measuring the value of small changes in the quality of the natural resource or the amount of knowledge that users have regarding the extent of damage to the resource.[\[72\]](#) It is also difficult to accurately account for opportunity costs resulting from lost wages on the part of the resource users.[\[73\]](#) However in spite of these shortcomings, travel cost valuation is generally regarded as the best available tool for measuring use value where market valuation is inapplicable.[\[74\]](#)

This summary of methods available for valuing natural resource damages highlights its complex and controversial nature. The selection of a valuation method is dependent on the values sought to be included, and the particular circumstance in which the damages are to be evaluated. Table 1 summarizes the type of values and their inclusion in different methods of measuring natural resource values.

#### IV. LITIGATION OVER NATURAL RESOURCE DAMAGES

Natural resource damage litigation can be divided between common law based actions and federal statutory actions. Although there are many similarities between the two types of cases, there are important procedural differences in terms of jurisdiction and standing requirements, as well as differences in the remedies available to plaintiffs. After examining common law legal rights and circumstances under which claims can be made for natural resource damages, this section will explore the federal statutory framework for litigating natural resource damages and the impact these statutes have had on common law actions.

##### *A. Common Law Legal Rights over Natural Resources Damages*

The common law, including statutes enacted under the sovereign powers of the states, are the traditional legal methods for addressing damages to natural resources. The common law provides a framework for addressing interests in natural resources as either public interests or private interests.[\[75\]](#) Public interests are those interests common to the general public, and are vindicated by states acting as sovereign.[\[76\]](#) Private interests are generally private property interests vindicated under principles of tort law.[\[77\]](#)

##### *1. Common Law Public Rights*

States are recognized as having authority to protect natural resources, insofar as the resources are within the interests of the general public.[\[78\]](#) The most common legal basis for states to have standing to sue for natural resource damages is through an exercise of the police power. In addition to the police power, states can rely on other common law theories recognizing state interests in natural resources. Three additional common-law theories for state based actions are that states: (1) have a proprietary interest in natural resources; (2) are guardians of natural resources under the doctrine of *parens patriae*; and that (3) are trustees of certain natural resources under the public trust doctrine.[\[79\]](#)

##### *a. Police Power*

The police power provides states the authority to create laws to protect the health, safety, and welfare of the general public.<sup>[80]</sup> The majority of states have enacted statutes authorizing the state fish and wildlife agency or state attorney general to recover damages for environmental harm.<sup>[81]</sup> State statutes often provide standing to local governments and private parties to recover for natural resource damages as well.<sup>[82]</sup> Common damages under such statutes are for the full measure of the value of harm, either as the cost of restoration or by a statutorily prescribed unit pricing system. Many states allow for civil and criminal penalties related to the extent of damage.<sup>[83]</sup>

#### *b. Proprietary Interest of States*

State ownership of wildlife was recognized by the U.S. Supreme Court in *Geer v. Connecticut*,<sup>[84]</sup> which held that a state could prohibit the taking of wildlife and transportation for sale outside of state boundaries by virtue of its ownership of wild game.<sup>[85]</sup> For several decades, *Geer* provided a framework for states to regulate wildlife based on the states' proprietary interest. However the Court subsequently overruled *Geer* in *Hughes v. Oklahoma*,<sup>[86]</sup> holding that state wildlife protection laws were subject to dormant commerce clause limitations in the manner of other forms of state regulation.<sup>[87]</sup> The Court in *Hughes* characterized state ownership of wildlife as a 'legal fiction' merely expressing the importance to a state in preservation and regulation of the exploitation of important resources.<sup>[88]</sup>

This language in *Hughes* can be interpreted as invalidating the common law doctrine of state ownership of wildlife resources as expressed in *Geer*. Alternatively, the *Hughes* decision can be interpreted as applying narrowly to restrictions on interstate commerce. However, subsequent to the *Hughes* decision, states have justified protection of natural resources on common law doctrines other than the proprietary interest of the state.<sup>[89]</sup>

#### *c. Parens Patriae and Public Nuisance*

The common law doctrine of *parens patriae* regards the state as guardian of its citizens who are unable to adequately represent themselves.<sup>[90]</sup> The doctrine has expanded to allow states to sue to protect articulated quasi-sovereign interests distinct from the interests of particular private parties on behalf of the general public,<sup>[91]</sup> such as the abatement of public nuisances or the protection of its economy.<sup>[92]</sup> The right of the state to sue for pollution and natural resource damages on *parens patriae* grounds is well recognized in the case law.<sup>[93]</sup> Traditionally *parens patriae* was used only as a basis for states seeking injunctive relief, but recent court decisions have allowed states to recover money damages in their capacity as *parens patriae*.<sup>[94]</sup>

The most common cause of state action to protect natural resource damages under the *parens patriae* is the law of public nuisance. A public nuisance exists where there "is an unreasonable interference with a right common to the general public."<sup>[95]</sup> Public nuisance originated as a common law group of crimes that have since been replaced by statutory crimes in most jurisdictions.<sup>[96]</sup> The modern common law action of public nuisance is based on conduct that is more tortious than criminal, and it is no longer necessary that an action be criminal to be a public nuisance.<sup>[97]</sup>

For public nuisance to apply, the nuisance must affect a public interest rather than private individual. It is not the ownership of the resource at issue, but the nature of the injury.<sup>[98]</sup> The nuisance does not need to affect the entire community, but must substantially interfere with the public right of those who encounter it.<sup>[99]</sup> Market valuation is typically the standard of measuring money damages in common law nuisance actions for injury to natural resources.<sup>[100]</sup>

#### *d. Public Trust Doctrine*

Although in general states are no longer held to own natural resources,<sup>[101]</sup> the public trust doctrine presents a property basis for the legal right of states to natural resource damages. Under the public trust doctrine, states hold title to lands under tidewaters and navigable watercourses in trust for the benefit of the public.<sup>[102]</sup> The public benefits the state is to protect includes fishing, navigation, commerce, and more recently water quality, wildlife, aesthetic values, public access, and recreational uses.<sup>[103]</sup> The lands held in trust cannot be alienated by the state except to promote the public interest.<sup>[104]</sup> In evaluating uses and disposition of the public trust, the states use a balancing test to evaluate the costs and benefits to the trust, protecting the trust interests to the extent possible.<sup>[105]</sup>

As the public trust doctrine is limited to navigable river and lake beds, coastal areas, estuaries, and other marine areas, the doctrine will generally not sustain a state action for natural resource damages in dry land areas.[\[106\]](#) However even with this limitation, the doctrine does serve as an important basis for states' interests in natural resources, as many injuries to natural resources are associated with pollution in watercourses and wetland areas.

## 2. Common Law Private Rights

At common law, private parties and municipal governments are able to sue for natural resource damages under tort doctrines of negligence, nuisance, trespass, or strict liability for abnormally dangerous activities.[\[107\]](#) Each of these causes of action require the private party to have incurred a personal injury distinct from the general public as a result of the tortfeasor's actions and separate from public rights.[\[108\]](#) Recoverable damages typically include lost property interests, economic loss, and potentially punitive damages. Injunctive relief is also often available.[\[109\]](#)

### a. Negligence

Negligence actions are available to private parties and municipalities where the party responsible for an injury to natural resources has failed to exercise an objective standard of due care.[\[110\]](#) To sustain a negligence action one must show that the responsible party was subject to a duty of care, and that the defendant's conduct fell short of that duty resulting in an injury.[\[111\]](#)

To establish the responsible party was under a duty of care, a plaintiff must show that the burden to the responsible party in avoiding the injury was outweighed by the probability of an injury and the degree of harm.[\[112\]](#) For natural resource damages, a duty of care will commonly be found because the degree of potential harm to the environment will normally outweigh the burden in avoiding the harm.

Establishing that the cause of natural resource damages is the result of the defendant's failure to exercise due care can present a substantial barrier to a negligence action. To recover damages, the plaintiff must show by a preponderance of the evidence that the defendant's conduct caused the injury and that it was not the result of an independent cause.[\[113\]](#) Sophisticated sampling and modeling techniques are often necessary to demonstrate injury and causation.[\[114\]](#) However in many negligence actions for natural resource damages, *res ipsa loquitur* will apply allowing an inference of negligence to be drawn from circumstantial evidence that would not normally be sufficient to present a jury question.[\[115\]](#) In a few jurisdictions *res ipsa loquitur* shifts the burden to the defendant to come forward with evidence that the cause of injury is not the defendant's negligence.[\[116\]](#)

### b. Nuisance

Nuisance actions by private parties can be either private nuisance or public nuisance causes of action.[\[117\]](#) The two actions are distinguished by the nature of the injury. A private nuisance occurs where there is "an interference with the use and enjoyment of" lawfully possessed property.[\[118\]](#) To maintain a private nuisance action, the plaintiff must have a property interest at stake.[\[119\]](#) A person who has "no interest in the property affected," such as a licensee, generally cannot maintain such an action.[\[120\]](#)

Remedies available under private nuisance include money damages for lost market value, injunctive relief, and abatement by self-help.[\[121\]](#) Injunctive relief is available under private nuisance if the necessary measures to abate the harm fall short of a complete ban on the activity causing the nuisance.[\[122\]](#) For activities that are highly probable to lead to a nuisance, the activity might be enjoined prior to any resulting damages through a private nuisance action.[\[123\]](#)

A public nuisance occurs where there is an interference with a right common to the general public.[\[124\]](#) In addition to the state's right to sue for a public nuisance, private parties may also sue for a public nuisance where they have damages different than those suffered by the general public.[\[125\]](#) For example, in the event of an oil spill, commercial fishermen can recover lost profits because they suffer from damages different in kind than those of the general public. However, a local business' profits are not recoverable because the business is only indirectly affected as is the rest of the general public.[\[126\]](#) Remedies available to private parties injured by a public nuisance include money damages, injunctive relief, and abatement. Additionally, members of the general public can seek injunctive relief or abatement of a public nuisance where they have legal standing to do so.[\[127\]](#)

### *c. Trespass*

Private parties have a right of action in trespass where there is a physical invasion of property.[\[128\]](#) Whereas nuisance actions are based on an interference with the right to use and enjoy property, trespass actions are based on an interference with the right to possession.[\[129\]](#) Trespass actions require that the responsible party be more than negligent; the defendant must have intended the action that resulted in the trespass.[\[130\]](#) Once trespass is established, the trespassing party is liable for all consequences.[\[131\]](#)

### *d. Strict Liability*

Under certain circumstances the tort doctrine of strict liability for abnormally dangerous activities might apply to cases of natural resource damages. To establish a strict liability action, the plaintiff must show that the defendant engaged in an activity that posed a high degree of risk of some harm, that the threatened harm could be serious, and that reasonable care could not have eliminated the risk of harm.[\[132\]](#) Other considerations include the extent to which the activity is not a matter of common usage, the inappropriateness of the activity to the location, and the value of the activity to the community.[\[133\]](#)

The use of strict liability is not accepted in all jurisdictions, and its application has been limited to activities which are out of place or unnatural for the location in which they are carried out. Examples where the doctrine has been applied include: storage and diversions of large quantities of water; storage of explosives or large quantities of flammable liquids; crop dusting; fumigating with cyanide gas; drilling or refining oil in populated areas; and the emission of noxious gasses in populated areas.[\[134\]](#) The doctrine has not been applied to such activities where the uses are natural to the land, such as utility mains or gas stations.[\[135\]](#) Accidental releases of hazardous substances during storage or transportation are generally not subject to strict liability as an abnormally dangerous activity.[\[136\]](#)

## *B. Federal Natural Resource Protection Statutes*

Federal environmental legislation over the past 25 years has restructured the law of natural resource damages.[\[137\]](#) Two environmental statutes provide the principle sources of federal authority over natural resource damages: the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)[\[138\]](#) and the Oil Pollution Act (OPA).[\[139\]](#) Although other examples of federal legislation addressing natural resource damages exist,[\[140\]](#) these two statutes are the most generally applicable and provide a consistent framework in which to discuss natural resource damage litigation.

### *1. Creation of Liability for Natural Resource Damages*

CERCLA and OPA both designate liability for all costs of injury to, destruction of, or loss of natural resources.[\[141\]](#) CERCLA creates liability under circumstances where response costs are incurred in addressing a release or threatened release of a hazardous substance into the environment. However, for natural resource damage claims, the liability provisions of CERCLA require a proven injury to the resource, and do not allow an action where there is only a threatened release.[\[142\]](#) Parties liable under CERCLA include the current owners and operators of a facility, owners and operators of a facility at the time the hazardous substances were disposed of, persons arranging for transport and disposal of hazardous substances, and transporters of hazardous substances.[\[143\]](#)

OPA creates liability for discharges of oil into navigable waters or adjoining shorelines or the exclusive economic zone of deep ocean waters.[\[144\]](#) Parties liable under OPA include the owners, operators or charterers of transport vessels, the owners or operators of onshore facilities, or pipelines, and the lessees of offshore facilities or deep water ports.[\[145\]](#) Public vessels and permitted discharges are excluded from OPA liability.[\[146\]](#)

Both CERCLA and OPA establish a strict and joint and several liability scheme for acts that result in damage to natural resources.[\[147\]](#) Liability is limited to injuries to those resources prescribed by statute. The two statutes define natural resources to include "land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States. . . , any State or local government or Indian tribe, or any foreign government . . . ." [\[148\]](#) Resources under private ownership

are interpreted as being "otherwise controlled by" the United States when there is a substantial degree of government regulation present.[\[149\]](#)

For purposes of liability, an injury means an observable adverse change in a natural resource that is either directly or indirectly the result of a discharge.[\[150\]](#) Regulations under CERCLA qualify adverse change as a change "in the chemical or physical quality or the viability of a natural resource."[\[151\]](#) OPA regulations include impairment of natural resource services as a component of injury.[\[152\]](#) The statutory liability is only recoverable by the designated trustees, which include the U.S. Government, states, Indian tribes, and foreign governments for natural resources under their respective control.[\[153\]](#)

CERCLA authorizes injunctive relief where a release or threatened release of a hazardous substance poses an imminent and substantial threat to public health and welfare or to the environment. The U.S. Attorney General is authorized to secure the injunction, which may include whatever actions are necessary to abate the threat, as determined by the public interest and circumstances of the threat.[\[154\]](#) Authority to determine when such a threat exists has been delegated to the U.S. Coast Guard for releases "or threatened re lease[s] involving the coastal zone, Great Lakes waters, ports, and harbors."[\[155\]](#) Authority for all other releases or threatened releases has been delegated to the U.S. Environmental Protection Agency.[\[156\]](#)

It is significant that unlike recovery for response costs, there must be an established causal link between the responsible party and the injury to the natural resources.[\[157\]](#) Simply satisfying the requirements for a liable party is sufficient to find liability for recovery and response costs. Natural resource damage liability requires that a regulatory definition of causation be satisfied, provided in CERCLA implementing regulations,[\[158\]](#) which can create a burden of proof that presents a substantial technical barrier to recovery.[\[159\]](#)

## *2. Defenses to Liability for Natural Resource Damages*

Defenses to OPA and CERCLA are limited to the defenses specified by the statute. Both statutes provide defenses if it can be established that the resulting damages were the result of an act of God, an act of war, or an act or omission of a third party other than an employee/agent of, or a party under a contractual relationship with the, defendant.[\[160\]](#) Both OPA and CERCLA prohibit double recovery for an injury to natural resources.[\[161\]](#)

CERCLA prohibits retroactive liability for damages wholly occurring before December 11, 1980.[\[162\]](#) CERCLA also precludes liability where resources have been irretrievably committed in an environmental impact statement where the discharge of hazardous substances is in compliance with an authorized permit. Damages for such a release are still available under existing law, including the common law.[\[163\]](#) Both OPA and CERCLA specify a three year statute of limitations from the date of discovery of the loss of natural resources or the date of promulgation of natural resource damage regulations until an action is brought to recover damages.[\[164\]](#)

Total liability under CERCLA is limited to \$50 million for natural resource damages.[\[165\]](#) Total liability under OPA is dependent on the type of facility discharging oil. Tank vessels are liable for the greater of \$1,200 per gross ton or, either \$10 million (for vessels greater than 3,000 gross tons) or \$2 million (for vessels less than or equal to 3,000 gross tons).[\[166\]](#) Offshore facilities are liable for up to \$75 million[\[167\]](#) while onshore facilities and deepwater ports are liable for up to \$350 million.[\[168\]](#)

## *3. Natural Resources Trustees*

A significant factor in both OPA and CERCLA provisions is the designation of public trustees to act on behalf of the public interest to recover for natural resource damages. Both OPA and CERCLA designate the President or an authorized representative of any state, Indian tribe, or foreign government to act as a trustee for natural resources.[\[169\]](#) President Reagan designated the Secretaries of Defense, Interior, Agriculture, Commerce, and Energy to serve as federal trustees, with one of the trustees serving as the Lead Administrative Trustee for each spill resulting in natural resource damages.[\[170\]](#) States are to notify the Environmental Protection Agency of the designated state trustees for natural resources.[\[171\]](#)

Under the law of trusts, "the trustee is under a duty . . . to take reasonable steps to realize on claims which he holds in

trust."<sup>[172]</sup> The scope of a trustee's authority is limited to the specific terms creating the trust and to any actions "necessary or appropriate to carry out the purposes of the trust."<sup>[173]</sup> The terms of natural resource trusts under OPA and CERCLA explicitly limit the statutorily available damages for defined injuries. OPA limits natural resource damages to restoration and replacement costs, plus the diminution in value pending restoration or replacement, and the associated assessment costs.<sup>[174]</sup> CERCLA does not limit damages to restoration and replacement costs,<sup>[175]</sup> but it requires regulations for assessing the cost of direct and indirect injuries to natural resources that consider at a minimum: replacement value, use value, and the ability of the damaged resource to naturally recover.<sup>[176]</sup> The assessed value of the natural resource has a rebuttable presumption of validity as provided by the statutes.<sup>[177]</sup>

#### 4. Natural Resource Damage Assessments

The key elements in a statutory based action for natural resource damages are the determination of injury, finding of causation, and measure of compensable damages, all of which are provided in an assessment process authorized under OPA and CERCLA. The regulations for natural resource damage assessments under CERCLA and OPA have developed along separate paths, and have some important differences.

##### a. CERCLA Procedures

Natural resource damage assessment procedures under CERCLA provide a natural resource trustee broad discretion in assessing the value of natural resource damages. CERCLA requires designated federal officials to promulgate regulations for the assessment of natural resource damages.<sup>[178]</sup> The regulations must provide two procedures: a standard procedure for simple assessments based on the discharge or the affected area, and alternative protocols for more extensive measurements to evaluate the type and extent of short and long term damages, including both direct and indirect damages.<sup>[179]</sup> The procedure for simple assessments has limited circumstances under which it can be utilized,<sup>[180]</sup> and is rarely used in CERCLA natural resource damage assessments.<sup>[181]</sup>

The Department of the Interior (DOI) promulgated the first version of damage assessment rules for the more extensive assessments in 1986.<sup>[182]</sup> The rule required trustees to chose the lesser of restoration or replacement costs or diminution of use values as the measure of natural resource damages, except where restoration or replacement was not technically feasible.<sup>[183]</sup> In calculating diminution of use values, trustees were to first consider market valuation.<sup>[184]</sup> If it was determined that market valuation was inappropriate, trustees were to appraise a loss of market value using uniform appraisal standards.<sup>[185]</sup> If neither market valuation nor appraisal were appropriate measures of value, trustees could use contingent valuation methods, travel cost valuation, or hedonic modeling.<sup>[186]</sup> Contingent valuation was to be used in estimating non-use values only when use values could not be measured.<sup>[187]</sup>

Upon promulgation the rule was challenged in *Ohio v. United States Department of the Interior*.<sup>[188]</sup> States and environmental organizations claimed the assessment process undervalued natural resource damages while industry interests claimed that the rule overvalued natural resource damages.<sup>[189]</sup> The Circuit Court of the District of Columbia consolidated all actions against the new rule in one suit.<sup>[190]</sup> The rule was evaluated under the two step test set forth in *Chevron U.S.A., Inc. v. Natural Resource Defense Council, Inc.*<sup>[191]</sup> to determine whether there was an unambiguous congressional intent, and if not, whether the rule was a reasonable construction of the statute and therefore within the DOI's delegated discretion.<sup>[192]</sup>

The most substantial holding of *Ohio* was that the 'lesser of' rule, requiring trustees to chose between the lesser of replacement or restoration costs or diminution of use values, violated the intent of congress to give preference to restoration cost as the measure of damages.<sup>[193]</sup> However, the court did allow for the use of other valuation methods where restoration was infeasible or grossly disproportionate to use value.<sup>[194]</sup> Additionally, the hierarchy of methods was held to be unreasonable in not accounting for non-use values such as existence and option value,<sup>[195]</sup> and the rule was remanded to DOI for clarification of the authority of trustees for natural resource damages on lands not owned by the government.<sup>[196]</sup>

The DOI did not appeal the *Ohio* court's decision and revised the rule accordingly.<sup>[197]</sup> Under the new rule, natural resource damage assessments occur in three stages: injury determination; quantification; and damage determination.<sup>[198]</sup> The method for injury determination includes defining the injury, determining the pathway connecting the cause to the injury, and testing and evaluating the natural resource to statistically determine the cause of

the injury.[\[199\]](#) During the quantification step, the trustee characterizes the injury in terms of a reduction in natural resource services from a baseline state as well as the time needed for the resources to recover.[\[200\]](#)

The damage determination stage was the most significant revision of the rule. The measure of damages established in the new rule is the cost of restoration or replacement of the damaged resource.[\[201\]](#) Additionally, compensable value, the value of the lost services of the resource during the time period from the injury until baseline conditions have been reattained,[\[202\]](#) is available for recovery at the discretion of the trustee.[\[203\]](#) The trustee can choose between several valuation methods for estimating compensable value, including market valuation, appraisal, factor income, travel cost, hedonic pricing, unit value, contingent valuation, or other suitable valuation methods.[\[204\]](#) The use of contingent valuation for measuring option and existence value is available only when the trustee determines there are no relevant use values.[\[205\]](#)

#### *b. OPA Procedures*

OPA is more explicit in natural resource damage assessment procedures, but does provide trustees some discretion in assessing value. Congress passed OPA in 1990 with the *Ohio* decision in hindsight, and used the *Ohio* case to draft the natural resource damages provisions of the new statute.[\[206\]](#) OPA expressly mandates the measure of damages as the cost of restoration or replacement, the diminution in value pending restoration, and assessment costs.[\[207\]](#) OPA regulations divide the trustee's responsibilities into a preassessment phase, a restoration planning phase, and a restoration implementation phase.[\[208\]](#)

During the preassessment phase, the trustee determines whether there has been release of oil to which OPA applies.[\[209\]](#) In the restoration planning phase, the trustee assesses potential injuries to natural resources, quantifies the degree of injury relative to a baseline, and evaluates alternatives for restoration.[\[210\]](#) At a minimum, the trustee must consider a natural recovery alternative and an active restoration alternative.[\[211\]](#)

A unique feature of the restoration planning phase requires trustees to consider compensatory restoration for each alternative.[\[212\]](#) Similar to compensatory value in CERCLA damage assessment rule, compensatory restoration is intended to compensate the public with resource services of similar type and of comparable value to the damaged resources until restoration is complete.[\[213\]](#) The trustee is to evaluate all alternatives based on cost, extent of restoration to be achieved, likelihood of success, extent of preventing future injury, benefits to multiple resources, and the effects on public health and safety.[\[214\]](#) Finally, the trustee is to select and implement the preferred restoration alternative.[\[215\]](#)

#### *C. Common Law Actions and Natural Resource Trustees*

The designation of federal and state agencies as natural resource trustees has radically altered the common law regime for litigation over natural resource damages. Both CERCLA and OPA limit natural resource damage claims to designated trustees,[\[216\]](#) denying standing to local governments and private parties to bring suit for natural resource damages.[\[217\]](#) CERCLA and OPA do not limit states from imposing additional liability requirements or creating additional rights of action,[\[218\]](#) and the provisions of CERCLA do not modify obligations or liabilities under any other law, including the common law.[\[219\]](#) Therefore, local governments and private parties have full authority provided to them under state statutes or common law.

The prohibition on double recovery for natural resource damages[\[220\]](#) raises the issue of when a designated trustee has preempted the right of action of local governments and private parties. This is a minor issue for parties seeking injunctive relief where the trustee is seeking restoration damages, as the citizen suit provision of CERCLA provides a right of action against the trustee for restoring the resource.[\[221\]](#) However, where replacement is the selected remedy, the preclusion of a claim for injunction is a substantial loss to the local government or private party as the replacement resources are unlikely to be the property of the party seeking injunction.

For compensatory value or other use values claimed as damages under CERCLA, the rights of trustees may overlap with the justiciable interests of other parties. Recovery of natural resource damages by the trustees for these uses will preclude recovery by other parties.[\[222\]](#) Where damaged natural resources are located on private property that is under substantial government control, the private property owners may be precluded from recovery for property damage.[\[223\]](#)

This is not an issue for cases where restoration is the selected alternative once the resources have been restored. However, it is a factor for compensatory value under CERCLA or compensatory restoration under OPA, where damages for use value during restoration are accounted for.[\[224\]](#)

Very few natural resource damages claims are fully assessed according to regulatory guidelines. In most cases, the responsible party negotiates a settlement for natural resource damages concurrently with a settlement for cleanup costs.[\[225\]](#) For the purposes of settlement, resource trustees typically use readily available literature and other information to estimate the value of natural resource damages without necessarily following the full assessment procedure in the regulation.[\[226\]](#) The terms of the negotiated settlement typically commit the government to releasing the responsible party from any and all claims for natural resource damages, with preclusive effects for other parties seeking the same natural resource damages.[\[227\]](#)

## V. CONCLUSIONS

The law of natural resource damages is a complex mix of common law doctrines and statutory rights in an area of law that reflects many different values among parties with different rights in a common cause of action. The law that exists today has developed over years of research and litigation, and presents a reasonable framework for addressing natural resource damages.

The advent of federal statutes designating trustees on behalf of the public interest is one of the most significant developments in the law of natural resource damages. By constructing a trust to protect natural resources, federal statutes demonstrate the importance of natural resources to the nation by obligating trustees to recover for damages in the interest of the trust. The recent development of preference for restoration or replacement costs as the presumptive remedy improves the adequacy of the law by including existence values as well as use values in the measure of damages.

However, the federal statutory framework does create some problems within the law of natural resource damages. The most significant issue that remains to be resolved is the preclusion of claims of private parties and local governments under common law when natural resource damages have been collected by resource trustees. This is particularly important in situations where damages to private property are precluded on the basis of a natural resource damages judgement or settlement to resource trustees.

Affirmatively avoiding preclusion of other parties claims should be developed as a policy of natural resource trustees. OPA and CERCLA damage assessment rules should be modified to include a prescriptive procedure for trustees to determine the potential for precluding other party claims. Such a procedure would best be incorporated into OPA procedures for compensatory restoration or CERCLA procedures for compensatory value, where the possibility of including preclusive damages exists.

Another modification that would improve the natural resource damage assessment procedure is to give preference to restoration over replacement. Restoration should be the presumed standard, as it is the only valuation method that is fully inclusive of all measures of value, including intrinsic value. Restoration avoids the net loss of resources that is characteristic in replacement value. Additionally, as a technology-forcing method, restoration encourages the development of technologies for implementing restoration that reduce restoration costs over time.

CERCLA regulations provide no preference between restoration and replacement.[\[228\]](#) OPA regulations offer some improvement by including as one of six factors the extent to which the injured natural resources are returned to their natural condition in alternative selection.[\[229\]](#) Both regulations should be modified to include a hierarchy of alternatives with restoration as the preferred alternative unless it is shown to be impracticable. Only in such cases should the trustee consider replacement or other valuation methods in the natural resource damage assessment.

These subtle changes to the existing regulations would yield broad improvements in the law of natural resource damages. Parties with actionable rights in natural resources will have assurance that their rights will not be precluded by resource trustees without a credible evaluation of their interests. A more inclusive and comprehensive value of natural resources will be accounted for as trustees would be committed to the restoration of damaged resources, recognizing all values inherent in the resources. With these changes, the coalition of private interests and public trustees

will together form a more comprehensive stewardship of the land and provide a truer measure of justice for nature.

## APPENDIX

Table 1

### Values Included in Common Natural Resource Valuation Methods

#### A Biocentric

through Values biocentric < R > Values Use No Value n Use s

#### Values Existence Intrinsic

existence Value Value Valuation Vicarious Inter- Option on ious

a Method: temporal Market Value valuation Restoration X X X X X tion cost Replacement X X X X ment cost Contingent X X X X  
 ent valuation Contingent X X X X ent behavior Hedonic Xc modeling Travel Xc cost valuation

a. Option value can be considered a use value, or a separate value between use and nonuse values.

b. Market valuation does not include nonconsumptive uses and indirect uses which are not reflected in market transactions.

c. Hedonic modeling and travel cost valuation tend to underestimate the value of marginal damages to natural resources.

[\*] J.D. May 1999, Arizona State University College of Law; B.S Engineering, December 1988, University of Arizona, College of Engineering and Mines. A preliminary version of this article won third place in the 1998 Roscoe Hogan Environmental Law Contest. The winning article can be viewed at the home page of *Res Communes: Vermont's Journal of the Environment*, the online environmental journal of Vermont Law School, [.Return to text.](#)

[1] See *Exxon Valdez: The Spill, the Cleanup and the Charges*, N.Y. TIMES, Mar. 1, 1990 at D25.[Return to text.](#)

[2] See Oil Spill Public Information Center, *What Happened on March 24, 1989*, (visited Apr. 8, 1999) . See Microsoft Encarta '95, *Exxon Valdez* (1994).[Return to text.](#)

[4] See Oil Spill Public Information Center, *supra* note 2.[Return to text.](#)

[5] See *id.*[Return to text.](#)

[6] See Bureau of National Affairs, Inc., *Oil Spills: Seabird Death Rate from Exxon Valdez Spill Higher than Originally Thought*, GAO Reports, 22 ENV'T REP. 1948 (1991).[Return to text.](#)

[7] See Microsoft Encarta '95, *supra* note 3.[Return to text.](#)

[8] See John Duffield, *Nonmarket Valuation and the Courts: The Case of the Exxon Valdez*, CONTEM. ECON. POL'Y, October 1997, at 98-99. See also *In re the Exxon Valdez*, 1995 U.S. Dist. LEXIS 12952 (D. Alaska 1995) (addressing Exxon's motion for judgement as a matter of law on the punitive damages claim).[Return to text.](#)

[9] See Exxon Valdez Oil Spill Trustee Council, *Historical Overview of the Exxon Valdez: What Happened on March 24, 1989* (visited Apr. 8, 1999) [hereinafter *Historical Overview*]. The damage assessment was the most extensive in U.S. history, with 164 separate studies at a cost of over \$100 million. See *id.*[Return to text.](#)

[10] See *id.* [Return to text.](#)

[11] See *Judge Accepts Exxon Pact, Ending Suits on Valdez Spill*, N.Y. TIMES, October 9, 1991, at A14. [Return to text.](#)

[12] See *id.* [Return to text.](#)

[13] See Exxon Valdez Oil Spill Trustee Council, *What is the Trustee Council?* (visited Apr. 9, 1999) . [Return to text.](#)

[14] See *Historical Overview*, *supra* note 9. [Return to text.](#)

[15] See *id.* [Return to text.](#)

[16] See *id.* [Return to text.](#)

[17] See Raymond J. Kopp & V. Kerry Smith, *Understanding Damages to Natural Assets*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT 6, 10-11 (Raymond J. Kopp & V. Kerry Smith eds., 1993). Common definitions of natural resources include "those actual and potential forms of wealth supplied by nature, such as coal, oil, water power, arable land, etc.," WEBSTER'S NEW TWENTIETH CENTURY DICTIONARY 1197 (2d ed. 1983), and "[a]ny material in its native state which when extracted has economic value. . . . The term includes not only timber, gas, oil, coal, minerals, lakes, and submerged lands, but also, features which supply a human need and contribute to the health, welfare, and benefit of a community, and are essential to the well-being thereof. . . ." BLACK'S LAW DICTIONARY 1027 (6th ed. 1996). [Return to text.](#)

[18] See STUDY OF CRITICAL ENVIRONMENTAL PROBLEMS (SCEP), MAN'S IMPACT ON THE GLOBAL ENVIRONMENT 123-125 (1970). [Return to text.](#)

[19] The definition of natural resources in modern federal environmental statutes include "land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources . . . ." See *e.g.* Oil Pollution Act, 33 U.S.C. § 2701(20) (1994); Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601(16) (1994). [Return to text.](#)

[20] See Harold A. Mooney & Paul R. Ehrlich, *Ecosystem Services: A Fragmentary History*, in NATURE'S SERVICES 11, 13-14 (Gretchen C. Daily ed., 1997). [Return to text.](#)

[21] See Gretchen C. Daily, *Introduction: What Are Ecosystem Services?*, in NATURE'S SERVICES 1, 3-4 (Gretchen C. Daily ed., 1997). Seventeen ecosystem services were recently identified and economically evaluated, with an estimated worldwide valuation of \$33 trillion per year, considerably in excess of total global gross national product of \$18 trillion per year. See Robert Costanza et al., *The Value of the World's Ecosystem Services and Natural Capital*, 387 NATURE 253, 253-54 (1997). [Return to text.](#)

[22] See Eric T. Freyfogle, *The Land Ethic and Pilgrim Leopold*, 61 U. COLO. L. REV. 217, 227-41 (1990). [Return to text.](#)

[23] See Frank B. Cross, *Natural Resource Damage Valuation*, 42 VAND. L. REV. 269, 285-92 (1989). [Return to text.](#)

[24] See Lawrence H. Goulder & Donald Kennedy, *Valuing Ecosystem Services: Philosophical Bases and Empirical Methods*, in NATURE'S SERVICES 23, 24-27 (Gretchen C. Daily ed., 1997). [Return to text.](#)

[25] See *id.* at 24. [Return to text.](#)

[26] See *id.* at 25. [Return to text.](#)

[27] See Cross, *supra* note 23, at 281. See also Jeffrey C. Dobbins, *The Pain and Suffering of Environmental Loss: Using Contingent Valuation to Estimate Nonuse Damages*, 43 DUKE L.J. 879, 898-99 (1994) (discussing "nonconsumptive use values such as bird watching and reading about others' use of the resource"). [Return to text.](#)

[28] See Goulder and Kennedy, *supra* note 24, at 25.[Return to text.](#)

[29] See Cross, *supra* note 23, at 285.[Return to text.](#)

[30] See *id.* at 285-86.[Return to text.](#)

[31] See *id.* at 286. Cross distinguishes option values from other existence values in that there is often an existing market value for option values, such as commodity future markets. See *id.* at 281-92. Some authors would consider option value a use value, or somewhere between use and existence values. See Dobbins, *supra* note 27, at 900.[Return to text.](#)

[32] See Cross, *supra* note 23, at 292-93.[Return to text.](#)

[33] Deep ecology rejects anthropocentrism and asserts the equal moral worth of all living things. See A. Don Tarlock, *Earth and Other Ethics: The Institutional Issues*, 56 TENN. L. REV. 43, 60 (1988).[Return to text.](#)

[34] The animal rights movement asserts that it is morally wrong to inflict pain, and animal species other than humans have intrinsic rights insofar as they are sentient of pleasure and pain. See Goulder & Kennedy, *supra* note 24, at 26.[Return to text.](#)

[35] "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." ALDO LEOPOLD, A SAND COUNTY ALMANAC 262 (1966).[Return to text.](#)

[36] See Cross, *supra* note 23, at 285-97. Criminal and civil sanctions for violations of environmental laws may be justified on an intrinsic value basis. See *e.g.* Resource Conservation and Recovery Act, 42 U.S.C. § 6928(c), (d) (1994) (penalties for illegal disposal of hazardous wastes); Endangered Species Act, 16 U.S.C. § 1540(a), (b) (1994) (penalties for violations of the Act). However as noted by Dobbins, *supra* note 27, 880 n.3, even the Endangered Species Act is utilitarian in the creation of the endangered species committee to balance economic cost-benefits with the loss of a species. See 16 U.S.C. §§ 1536 (e). [Return to text.](#)

[37] See Goulder & Kennedy, *supra* note 24, at 26. [Return to text.](#)

[38] For an argument that natural resources should have recognized legal rights, see Christopher D. Stone, *Should Trees Have Standing? Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450 (1972). See also *Sierra Club v. Morton*, 405 U.S. 727, 741-42 (1972) (Douglas, J., dissenting) (arguing for conferring standing upon environmental objects).[Return to text.](#)

[39] See Cross, *supra* note 23, at 297.[Return to text.](#)

[40] See *id.* at 298, 302-303. Cross notes that diminution of property value is the common law measure of damages as stated in RESTATEMENT (SECOND) OF TORTS § 929(1)(a) (1979). See *id.* at 303 n.174. [Return to text.](#)

[41] See Raymond J. Kopp & V. Kerry Smith, *Implementing Natural Resource Damage Assessments*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT 118, 131 (Raymond J. Kopp & V. Kerry Smith eds., 1993).[Return to text.](#)

[42] See Cross, *supra* note 23, at 303.[Return to text.](#)

[43] See Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 1 (1960).[Return to text.](#)

[44] See Cross, *supra* note 23, at 307. See also *Ohio v. Department of the Interior*, 880 F.2d 432, 438 (D.C. Cir. 1989) (holding that market values for lost natural resources were not a reasonable interpretation of CERCLA natural resource damages provisions). [Return to text.](#)

[45] See Kopp & Smith, *supra* note 17, at 8-9.[Return to text.](#)

[46] See Cross, *supra* note 23, at 298.[Return to text.](#)

[47] See Kathryn C. MacDonald, Comment, *The Recovery of Restoration Costs: Analytical Synthesis of Common-Law Property Damages, Restitution, and Natural Resource Damages Under CERCLA*, 5 TUL. ENVTL. L. J. 255, 262-63 (1991). However, the cost of restoration can seem excessive in situations where it is compared "against a valuation method that tends to yield low natural resource values." Cross, *supra* note 23, at 335. [Return to text.](#)

[48] See *id.* at 334. [Return to text.](#)

[49] See Carl J. Phillips and Richard J. Zeckhauser, *Confronting Natural Resource Damages: the Economist's Perspective*, in NATURAL RESOURCE DAMAGES: A LEGAL, ECONOMIC, AND POLICY ANALYSIS 119, 133-36 (Richard B. Stewart, ed., 1995). For an argument that restoration cost is the only economically efficient remedy for damages to natural resources, see Heidi Wendel, *Restoration as the Economically Efficient Remedy for Damage to Publicly Owned Natural Resources*, 91 COLUM. L. REV. 430 (1991).[Return to text.](#)

[50] See Gretchen Daily, et al., *Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems*, 2 ISSUES IN ECOLOGY 11 (1997).[Return to text.](#)

[51] See Cross, *supra* note 23, at 301.[Return to text.](#)

[52] See *id.* at 302.[Return to text.](#)

[53] See *id.* [Return to text.](#)

[54] See William D. Schulze, *Use of Direct Methods for Valuing Natural Resource Damages*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT 204, 207 (Raymond J. Kopp & V. Kerry Smith eds., 1993).[Return to text.](#)

[55] See *id.*[Return to text.](#)

[56] See *The Price of Imagining Arden*, THE ECONOMIST, December 3, 1994, at 80.[Return to text.](#)

[57] See Schulze, *supra* note 54, at 205.[Return to text.](#)

[58] See WILLIAM H. DESVOUSGES, THE ROLE OF CONTINGENT VALUATION IN NATURAL RESOURCE DAMAGE ASSESSMENT 3 (Triangle Econ. Research General Working Paper No. G-9502, 1995).[Return to text.](#)

[59] See Peter A. Diamond & Jerry A. Hausman, *Contingent Valuation Measurement of Nonuse Values*, in NATURAL RESOURCE DAMAGES: A LEGAL, ECONOMIC, AND POLICY ANALYSIS 61, 82 (Richard B. Stewart ed., 1995).[Return to text.](#)

[60] See Dobbins, *supra* note 27, at 883.[Return to text.](#)

[61] See Richard T. Carson & Robert Cameron Mitchell, *Contingent Valuation and the Legal Arena*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT, 231, 231 (Raymond J. Kopp & V. Kerry Smith eds., 1993).[Return to text.](#)

[62] See A. Myrick Freeman III, *Nonuse Values in Natural Resource Damage Assessment*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT 264, 288-89 (Raymond J. Kopp & V. Kerry Smith eds., 1993).[Return to text.](#)

[63] See *The Price of Imagining Arden*, *supra* note 56, at 80.[Return to text.](#)

[64] See Kenneth E. McConnell, *Indirect Methods for Assessing Natural Resource Damages Under CERCLA*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT 153, 154 (Raymond J.

Kopp & V. Kerry Smith eds., 1993).[Return to text.](#)

[65] See Robert Mendelsohn, *Assessing Natural Resource Damages with Indirect Methods: Comments on Chapter 8*, in VALUING NATURAL ASSETS, THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT 197, 202 (Raymond J. Kopp & V. Kerry Smith eds., 1993).[Return to text.](#)

[66] See McConnell, *supra* note 64, at 163.[Return to text.](#)

[67] See *id.* at 172.[Return to text.](#)

[68] See Cross, *supra* note 23, at 313-15.[Return to text.](#)

[69] See *id.* at 310.[Return to text.](#)

[70] See *id.*[Return to text.](#)

[71] See *id.* at 313.[Return to text.](#)

[72] See *id.* at 311.[Return to text.](#)

[73] See *id.* [Return to text.](#)

[74] See *id.* at 313.[Return to text.](#)

[75] See Carol A. Jones et al., *Public and Private Claims in Natural Resource Damage Assessments*, 20 HARV. ENVTL. L. REV. 111, 118-23 (1996). [Return to text.](#)

[76] See Cross, *supra* note 23, at 277-78.[Return to text.](#)

[77] See Jones et al., *supra* note 75, at 118.[Return to text.](#)

[78] See *Hughes v. Oklahoma*, 441 U.S. 322, 337 (1979) (holding that states' interests in conservation of wildlife was a legitimate statutory purpose similar to a states' interest in protecting health and safety of its citizens).[Return to text.](#)

[79] See Cross, *supra* note 23, at 277-280.[Return to text.](#)

[80] See *San Diego Gas & Elec. Co. v. City of San Diego*, 450 U.S. 621,656 (1985).[Return to text.](#)

[81] See Faith Halter & Joel T. Thomas, *Recovery of Damages by States for Fish and Wildlife Losses Caused by Pollution*, 10 ECOLOGY L.Q. 5, 9 (1982).[Return to text.](#)

[82] See *Borough of Rockaway v. Klockner & Klockner*, 811 F. Supp. 1039, 1051 (D.N.J. 1993) (holding that municipalities and private parties have standing under the New Jersey Spill Act).[Return to text.](#)

[83] See Halter and Thomas, *supra* note 81, at 9.[Return to text.](#)

[84] 161 U.S. 519 (1896), *overruled by* *Hughes v. Oklahoma*, 441 U.S. 322 (1979).[Return to text.](#)

[85] See *id.* at 529-30.[Return to text.](#)

[86] 441 U.S. 322 (1979).[Return to text.](#)

[87] See *id.* at 335-36.[Return to text.](#)

[88] See *id.* at 335.[Return to text.](#)

- [89] See Halter and Thomas, *supra* note 81, at 12-13.[Return to text.](#)
- [90] See BLACK'S LAW DICTIONARY 769 (6th ed. 1996).[Return to text.](#)
- [91] See Hawaii v. Standard Oil Co., 405 U.S. 251, 257-59 (1972).[Return to text.](#)
- [92] See Alfred L. Snapp & Son, Inc. v. Puerto Rico *ex rel.* Barez, 458 U.S. 592, 604-05 (1982).[Return to text.](#)
- [93] See Scott Kerin, *Alaska Sport Fishing Association v. Exxon Corporation Highlights the Need to Take a Hard Look at the Doctrine of Parens Patriae When Applied in Natural Resource Damage Litigation*, 25 ENVTL. L. 897, 921-22 (1995).[Return to text.](#)
- [94] See Maine v. M/V Tamano, 357 F. Supp 1097, 1102 (D. Me. 1973).[Return to text.](#)
- [95] RESTATEMENT (SECOND) OF TORTS §§ 821B(1) (1979).[Return to text.](#)
- [96] See W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 90, at 645-46 (5th ed. 1984).[Return to text.](#)
- [97] See John E. Bryson & Angus Macbeth, *Public Nuisance, the Restatement (Second) of Torts, and Environmental Law*, 2 ECOLOGY L.Q. 241, 249 (1972).[Return to text.](#)
- [98] See Carter H. Strickland, Jr., *The Scope of Authority of Natural Resource Trustees*, 20 COLUM. J. ENVTL. L. 301, 315 (1995).[Return to text.](#)
- [99] See KEETON ET AL., *supra* note 96, § 90, at 645.[Return to text.](#)
- [100] See Bryson & Macbeth, *supra* note 97, at 274.[Return to text.](#)
- [101] See Hughes v. Oklahoma, 441 U.S. 322, 334-35 (1979).[Return to text.](#)
- [102] See Illinois Cent. R.R. Co. v. Illinois, 146 U.S. 387 (1892).[Return to text.](#)
- [103] See Strickland, *supra* note 98, at 314.[Return to text.](#)
- [104] See *id.*[Return to text.](#)
- [105] See Thomas A. Campbell, *The Public Trust, What's It Worth?* 34 NAT. RESOURCES J. 73, 77-78 (1994).[Return to text.](#)
- [106] Some states have legislatively expanded the common law public trust doctrine to include all natural resources. See *id.* at 83.[Return to text.](#)
- [107] See discussion *infra* pp. 24-28.[Return to text.](#)
- [108] See Jones et al., *supra* note 75, at 119.[Return to text.](#)
- [109] See *id.* at 119-21.[Return to text.](#)
- [110] See KEETON ET AL., *supra* note 96, § 31, at 169.[Return to text.](#)
- [111] See *id.* § 30, at 164-165.[Return to text.](#)
- [112] See United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).[Return to text.](#)
- [113] See KEETON ET AL., *supra* note 96, § 38, at 239.[Return to text.](#)

[114] See Keum J. Park, *Judicial Utilization of Scientific Evidence in Complex Environmental Torts: Redefining Litigation Driven Research*, 7 FORDHAM ENVTL. L.J. 483, 483-85 (1996).[Return to text.](#)

[115] See KEETON ET AL., *supra* note 96, § 40, at 257-58. The elements of *res ipsa loquitur* include: a lack of evidence of defendant's conduct; the injury ordinarily does not occur except through negligence; the instrument of injury was in the defendant's exclusive control; and the injury was not of the plaintiff's own action. See RESTATEMENT (SECOND) OF TORTS, § 328D (1979).[Return to text.](#)

[116] See KEETON ET AL., *supra* note 96, § 40, at 258-59.[Return to text.](#)

[117] See *id.* § 86, at 618.[Return to text.](#)

[118] See *id.* § 87, at 619. [Return to text.](#)

[119] See *id.* § 87, at 621. [Return to text.](#)

[120] See *id.*[Return to text.](#)

[121] See *id.* § 89, at 637-643 (stating that injunctions will only be available in cases where money damages are not an adequate remedy). For nuisances that cannot be abated at reasonable cost, including many natural resource injuries, courts will not likely enjoin the nuisance but will provide damages equal to the lost market value. See *id.* § 89, at 638. See also *Boomer v. Atlantic Cement Co.*, 26 N.Y.2d 219 (1970) (finding that the plaintiffs were entitled to an injunction but that it would cause the defendant substantial economic harm. Therefore, the court held that the defendant could continue to operate upon payment to the plaintiffs of damages which would compensate them for total present and future economic loss of their property).[Return to text.](#)

[122] See *Urie v. Franconia Paper Corp.*, 218 A.2d 360, 362 (N.H. 1966).[Return to text.](#)

[123] See KEETON ET AL., *supra* note 96, § 89, at 640-41.[Return to text.](#)

[124] See *id.* § 86, at 618.[Return to text.](#)

[125] See *id.* § 90, at 646-47.[Return to text.](#)

[126] See *Burgess v. M/V Tamano*, 370 F. Supp. 247, 250-51 (D. Me. 1973).[Return to text.](#)

[127] See RESTATEMENT (SECOND) OF TORTS § 821C (1979).[Return to text.](#)

[128] See KEETON ET AL., *supra* note 96, at 70.[Return to text.](#)

[129] See *id.*[Return to text.](#)

[130] See *id.* § 13, at 73.[Return to text.](#)

[131] See *id.* § 13, at 76.[Return to text.](#)

[132] See RESTATEMENT (SECOND) OF TORTS § 520 (1979).[Return to text.](#)

[133] See *id.*[Return to text.](#)

[134] See KEETON ET AL., *supra* note 96, § 78, at 549-50.[Return to text.](#)

[135] See *id.* § 78, at 550.[Return to text.](#)

[136] See *Indiana Harbor Belt R.R. v. American Cyanamid Co.*, 916 F.2d 1174, 1179-80 (7th Cir. 1990) (holding that the accidental spill of toxic substances in the middle of a city can be adequately addressed under negligence

liability).[Return to text.](#)

[137] Federal statutes must be based on constitutionally enumerated powers. Common powers used to justify federal protection of natural resources include the commerce power, U.S. CONST. art. I, § 8, cl. 3, the property clause, U.S. CONST. art. IV, § 3, cl. 2, and the treaty power, U.S. CONST. art. VI, cl. 2.[Return to text.](#)

[138] 42 U.S.C. §§ 9607-9675 (1994).[Return to text.](#)

[139] 33 U.S.C. §§ 2701-2761 (1994).[Return to text.](#)

[140] The Clean Water Act (CWA) contains provisions for natural resource damages. 33 U.S.C. § 1321(f)(5) (1994). As the CWA provisions address releases of oil and hazardous substances to navigable waters, most CWA natural resource damage claims are adequately addressed under OPA and CERCLA, respectfully. *See also* National Marine Sanctuaries Act, 16 U.S.C. §§ 1431-1445 (1994) (identifying areas of the marine environment that are of national significance and designating them as national marine sanctuaries); Trans-Alaska Pipeline Authorization Act, 43 U.S.C. §§ 1651-1656 (1994) (dealing with the delivery of oil and gas from Alaska's North Slope to domestic markets).[Return to text.](#)

[141] *See* 42 U.S.C. § 9607(a)(4)(C) (1994); 33 U.S.C. § 2702(b)(2)(A) (1994).[Return to text.](#)

[142] *See* Roscoe Trimmier, Jr. & Jay B. Smith, *The Scope of Natural Resource Damage Liability Under CERCLA*, in NATURAL RESOURCE DAMAGES: A LEGAL, ECONOMIC, AND POLICY ANALYSIS 9, 12 (Richard B. Stewart ed., 1995).[Return to text.](#)

[143] *See* 42 U.S.C. § 9607(f) (1994).[Return to text.](#)

[144] *See* 33 U.S.C. § 2702(a) (1994).[Return to text.](#)

[145] *See id.* § 2701(32).[Return to text.](#)

[146] *See id.* § 2702(c).[Return to text.](#)

[147] *See* United States v. Monsanto Co., 858 F.2d 160, 171 (4th Cir. 1988), *cert. denied*, 490 U.S. 1106 (1989) (upholding strict and joint and several liability under the CERCLA unless defendant can prove contribution); Craig R. O'Connor, *Natural Resource Damage Actions under the Oil Pollution Act of 1990: A Litigation Perspective*, 45 BAYLOR L. REV. 441, 442 (1993) (discussing legislative intent for strict, joint and several liability under OPA).[Return to text.](#)

[148] 33 U.S.C. § 2701(20) (1994); 42 U.S.C. § 9601(16) (Supp. II 1996) (substantially similar language).[Return to text.](#)

[149] *See* Ohio v. Department of the Interior, 880 F.2d 432, 461 (1989).[Return to text.](#)

[150] *See* 43 C.F.R. § 11.14(v) (1998). [Return to text.](#)

[151] *Id.*[Return to text.](#)

[152] *See* 15 C.F.R. § 990.30 (1998).[Return to text.](#)

[153] *See* 42 U.S.C. § 9607 (f)(1) (1994); 33 U.S.C. § 2706(a) (1994).[Return to text.](#)

[154] *See* 42 U.S.C. § 9606 (a).[Return to text.](#)

[155] *See* Exec. Order No. 12,580, 52 Fed. Reg. 2923, 2926 (1987).[Return to text.](#)

[156] *See id.*[Return to text.](#)

[157] See 42 U.S.C. § 9607 (a)(4)(C) (requiring natural resource damages result from a release of hazardous substances to establish liability).[Return to text.](#)

[158] See 43 C.F.R. § 11.62 (1998) (providing a procedure for establishing causation for water resources, geological resources, and biological resources injury). This regulation was upheld in *Ohio v. Department of the Interior*, 880 F.2d 432, 468-73 (D.C. Cir. 1989).[Return to text.](#)

[159] To demonstrate injury and causation, the resource must be characterized, samples collected and statistically compared to measure injury, and the discharge modeled through various possible pathways. See 43 C.F.R. § 11.61.[Return to text.](#)

[160] See 33 U.S.C. § 2703(a) (1994); 42 U.S.C. § 9607(b) (1994).[Return to text.](#)

[161] See 33 U.S.C. § 2706 (d)(3); 42 U.S.C. § 9612 (f).[Return to text.](#)

[162] See 42 U.S.C. § 9607(f)(1). See also *In re Acushnet River & New Bedford Harbor*, 716 F. Supp. 676, 685-86 (D. Mass. 1989) (holding that damages are distinct from injury, and damages apply at the time money is spent for remedial action).[Return to text.](#)

[163] See 42 U.S.C. § 9607(j). [Return to text.](#)

[164] See 33 U.S.C. § 2717(f)(1); 42 U.S.C. § 9613(g)(1). OPA replaces the date of promulgation of natural resource damage regulations with the date of completion of a natural resource damage assessment. 33 U.S.C. § 2717(f)(1).[Return to text.](#)

[165] See 42 U.S.C. § 9607(c)(1)(D) (1994).[Return to text.](#)

[166] See 33 U.S.C. § 2404(a)(1) (1994).[Return to text.](#)

[167] See *id.* § 2704(a)(3).[Return to text.](#)

[168] See *id.* § 2704(a)(4).[Return to text.](#)

[169] See *id.* § 2706(b)(1); 42 U.S.C. § 9607(f)(1).[Return to text.](#)

[170] See Exec. Order No. 12,580, 52 Fed. Reg. 2923, 2923-24 (1987).[Return to text.](#)

[171] See 33 U.S.C. § 2706(b)(3); 42 U.S.C. § 9607(f)(2)(B); Exec. Order No. 12,580, 52 Fed. Reg. 2923, 2936 (1987). However it has been held that states have authority to bring actions for natural resource damages under the CERCLA even if they have not registered with the EPA. See *Idaho v. Southern Refrigerated Transp. Inc.*, 1991 U.S. Dist LEXIS 1869, 12 (D. Idaho 1991).[Return to text.](#)

[172] RESTATEMENT (SECOND) OF TRUSTS § 177 (1959).[Return to text.](#)

[173] *Id.* § 186.[Return to text.](#)

[174] See 33 U.S.C. § 2706(d)(1) (1994).[Return to text.](#)

[175] See 42 U.S.C. § 9607(f)(1) (1994).[Return to text.](#)

[176] See *id.* § 9651(c).[Return to text.](#)

[177] See 33 U.S.C. § 2706(e)(2); 42 U.S.C. § 9607(f)(2)(C).[Return to text.](#)

[178] See 42 U.S.C. § 9651(c)(1) (1994). President Reagan delegated rule development to the Secretary of the Interior. See Exec. Order No. 12,580, 52 Fed. Reg. 2923, 2928 (1987).[Return to text.](#)

[179] *See* 42 U.S.C. § 9651(c)(2). [Return to text.](#)

[180] *See* 43 C.F.R. § 11.34 (1998).[Return to text.](#)

[181] *See* U. S. GENERAL ACCOUNTING OFFICE, GAO/RCED-96-71, SUPERFUND: OUTLOOK FOR AND EXPERIENCE WITH NATURAL RESOURCE DAMAGE SETTLEMENTS 10 (1996) [hereinafter GAO REPORT].[Return to text.](#)

[182] *See* National Resource Damage Assessments, 51 Fed. Reg. 27,725 (1986) (codified at 43 C.F.R. pt. 11 (1987)).[Return to text.](#)

[183] *See* 43 C.F.R. § 11.35(b)(2) (1987).[Return to text.](#)

[184] *See id.* § 11.83(c)(1).[Return to text.](#)

[185] *See id.* § 11.83(c)(2).[Return to text.](#)

[186] *See id.* § 11.83(d). [Return to text.](#)

[187] *See id.* § 11.83(d)(5)(ii).[Return to text.](#)

[188] 880 F.2d 432 (D.C. Cir. 1987).[Return to text.](#)

[189] *See id.* at 438. [Return to text.](#)

[190] *See id.* [Return to text.](#)

[191] 467 U.S. 837, 842-44 (1984).[Return to text.](#)

[192] *See Ohio*, 880 F.2d at 441.[Return to text.](#)

[193] *See id.* at 459.[Return to text.](#)

[194] *See id.* [Return to text.](#)

[195] *See id.* at 464.[Return to text.](#)

[196] *See id.* at 461.[Return to text.](#)

[197] *See* 59 Fed. Reg. 14,283 (1994) (codified at 43 C.F.R. pt. 11(1998)).[Return to text.](#)

[198] *See* 43 C.F.R. §§ 11.60(b) (1998).[Return to text.](#)

[199] *See id.* §§ 11.61-11.64.[Return to text.](#)

[200] *See id.* § 11.70.[Return to text.](#)

[201] *See id.* § 11.80(b).[Return to text.](#)

[202] *See id.* § 11.83(c)(1). [Return to text.](#)

[203] *See id.* § 11.80(b).[Return to text.](#)

[204] *See id.* § 11.83(c)(2).[Return to text.](#)

[205] *See id.* § 11.83(c)(2)(vii)(B).[Return to text.](#)

- [206] See James S. Seevers, Jr., Note, *NOAA's New Natural Resource Damage Assessment Scheme: It's Not About Collecting Money*, 53 WASH. & LEE L. REV. 1513, 1535 (1996). [Return to text.](#)
- [207] See 33 U.S.C. § 2706(d) (1994). [Return to text.](#)
- [208] See 15 C.F.R. § 990.12 (1998). [Return to text.](#)
- [209] See *id.* § 990.41. [Return to text.](#)
- [210] See *id.* §§ 990.50-990.56. [Return to text.](#)
- [211] See *id.* § 990.53(b). [Return to text.](#)
- [212] See *id.* § 990.53(c). [Return to text.](#)
- [213] See *id.* [Return to text.](#)
- [214] See *id.* § 990.54(a). [Return to text.](#)
- [215] See *id.* §§ 990.60-990.66. [Return to text.](#)
- [216] See 42 U.S.C. § 9607(f)(1) (1994); 33 U.S.C. § 2706(a) (1994). [Return to text.](#)
- [217] See *Artesian Water Co. v. New Castle County*, 851 F.2d 643, 644-45 (3d Cir. 1988) (affirming the district court's holding that private organizations generally cannot bring an action for natural resource damages under CERCLA); *Mayor of Rockaway v. Klockner & Klockner*, 811 F. Supp 1039, 1051 (D.N.J. 1993) (holding that municipality lacked standing for natural resource damage claims under CERCLA); *Lutz v. Chromatex, Inc.*, 718 F. Supp. 413, 419 (M.D. Pa. 1989) (holding that CERCLA natural resource damage provisions do not extend to private parties). [Return to text.](#)
- [218] See 42 U.S.C. § 9614(a) (1994); 33 U.S.C. § 2718(a) (1994). [Return to text.](#)
- [219] See 42 U.S.C. § 9652(d). See also *Leo v. General Elec. Co.*, 538 N.Y.S.2d 844, 847 (N.Y. App. Div. 1989) (holding that CERCLA does not preempt state law right of action). [Return to text.](#)
- [220] See 33 U.S.C. § 2706(d)(3); 42 U.S.C. § 9607(f)(1). [Return to text.](#)
- [221] See 42 U.S.C. § 9659(a). [Return to text.](#)
- [222] See *Alaska Sport Fishing Ass'n v. Exxon Corp.*, 34 F.3d 769, 774 (9th Cir. 1994) (holding that action by sport fishermen for damages was precluded by government recovery of the same damages under consent decree). [Return to text.](#)
- [223] See *Satsky v. Paramount Communications, Inc.*, 7 F.3d 1464, 1470 (10th Cir. 1993) (holding that property owners were barred from bringing claims, under common law, for natural resource damages that had been recovered by a CERCLA trustee, but could bring "claims that involved injuries to purely private parties"). [Return to text.](#)
- [224] See 43 C.F.R. § 11.83(c) (1998); 15 C.F.R. § 990.53(c) (1998). [Return to text.](#)
- [225] See GAO REPORT, *supra* note 181, at 4-5. [Return to text.](#)
- [226] See *id.* at 10-11. [Return to text.](#)
- [227] See, e.g., *Alaska Sport Fishing Ass'n*, 34 F.3d at 774; *Satsky* 7 F.3d at 1468. [Return to text.](#)
- [228] See 43 C.F.R. § 11.80(b)(1998). [Return to text.](#)

[229] *See* 15 C.F.R. § 990.54(a)(2) (1998). [Return to text.](#)

# PARENT CORPORATION LIABILITY UNDER CERCLA: AN ANALYSIS OF THE SUPREME COURT'S FAILURES AND FORTUNES IN ITS DECISION IN *UNITED STATES V. BESTFOODS*

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## I. INTRODUCTION

The Industrial Revolution of the 1900's brought great wealth to the United States. However, this great wealth has come largely at the expense of harm to our environment. The dumping of hazardous substances and the creation of waste sites has damaged our environment immensely. In an effort to prevent the creation of hazardous waste sites and to clean up existing hazardous waste sites, the United States has enacted two major statutes. The principal statutory authorities enacted to regulate waste management and prevent the formation of hazardous waste sites are the Resource Conservation and Recovery Act (RCRA)<sup>[1]</sup> and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).<sup>[2]</sup>

Promulgated in 1976, RCRA is responsible for regulating waste management. CERCLA, on the other hand, provides a liability scheme that is designed to prevent the disposal of hazardous substances and provide funding for cleaning up hazardous waste sites. Congress promulgated CERCLA because it believed that RCRA was insufficient to control pollution. Congress determined that a liability scheme designed to hold parties responsible for violations against the environment would aid RCRA in controlling pollution.

Under CERCLA's liability scheme it is very important that the plaintiff file suit against potentially responsible parties with the financial capabilities to satisfy a judgment. Otherwise, a plaintiff may get stuck with an unsatisfied judgment. In an effort to hide from liability, many corporations set up subsidiary corporations to own the facilities that present a risk of releasing hazardous substances. Consequently, to reach the assets of the parent corporation the plaintiff must pierce the corporate veil or use some alternative theory of liability to reach the assets of the parent corporation.

The issue of parent corporations' liability for the environmental violations of their subsidiary corporations has intensified lately.<sup>[3]</sup> The intensification of the issue occurred largely as a result of the United States Court of Appeals for Sixth Circuit's opinion in *United States v. Cordova Chemical Co. of Michigan*.<sup>[4]</sup> In an en banc decision the Sixth Circuit held that a parent corporation may only be held liable for contamination caused by a subsidiary if the plaintiff can pierce the corporate veil.<sup>[5]</sup>

The Sixth Circuit's decision was celebrated by shareholders and parent corporations that were relying on the traditional limited liability protection of the corporate form.<sup>[6]</sup> However, a majority of the circuits that have considered this issue have concluded that the parent corporation can be found directly liable without piercing the corporate veil.<sup>[7]</sup> Thus, the Sixth Circuit placed itself in the clear minority view with its decision in *Cordova*.

Recently, in *United States v. Bestfoods*,<sup>[8]</sup> the United States Supreme Court reviewed the Sixth Circuit's opinion in *Cordova*, directly addressing the issue of parent corporation liability under section 107(a)(2) of CERCLA. This Note analyzes the Supreme Court's decision and discusses whether it provides a meaningful and uniform standard for determining parent corporation liability under CERCLA. Part II of this Note provides a brief explanation of CERCLA and its key provisions. Part III of this Note discusses some of the primary theories used by courts to determine parent corporation liability under CERCLA. Included within Part III is a summary of the Sixth Circuit's opinion in *Cordova*. Part IV provides a detailed explanation of the facts of *Bestfoods* along with a summary of the critical parts of the opinions of the district court and the Supreme Court. Part V provides a critical analysis of the Supreme Court's opinion in *Bestfoods*. In Part V, this Note suggests that the Supreme Court faltered by not addressing the issue of derivative liability under CERCLA, and as a result courts will continue to be inconsistent in determining derivative liability under CERCLA. This Note also advocates adopting a federal common law veil-piercing rule for finding a parent corporation indirectly liable under CERCLA. Finally, Part VI concludes that the Supreme Court properly ruled that a direct liability standard for finding a parent corporation liable exists under CERCLA.

## II. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT

In order to gain a full understanding of the ramifications of the *Bestfoods* decision, a discussion of CERCLA's primary goals and its liability provisions is necessary.

### A. CERCLA's Primary Goals

CERCLA is a comprehensive statute that grants the President of the United States broad power to command government agencies and private parties to clean up hazardous waste sites.<sup>[9]</sup> CERCLA's two fundamental goals are: (1) to deter the release of hazardous substances into the environment through a liability scheme; and (2) to provide for cleanup if a hazardous substance is released or threatened to be released into the environment.<sup>[10]</sup> The statute achieves these two goals through two main provisions. First, the statute provides for a federal fund that allows the government to finance the cleanup of a waste site.<sup>[11]</sup> Second, the statute provides a means for the government or any other party funding a cleanup to recoup cleanup costs from all potentially responsible parties.<sup>[12]</sup>

### B. CERCLA's Liability Provisions

CERCLA's liability provisions are in section 107 of the statute.<sup>[13]</sup> Proving liability under CERCLA requires a party to first prove that the defendant is a potentially responsible party (PRP) as defined by the statute.<sup>[14]</sup> PRPs include: (1) current owners and operators of facilities where hazardous substances are released or threatened to be released; (2) owners or operators of facilities at the time hazardous substances are disposed; (3) persons who arranged for transportation or disposal or treatment of such substances; and (4) persons who accepted such substances for transport to disposal or treatment.<sup>[15]</sup> Notably, a PRP does not have to cause the environmental harm, nor does the plaintiff have to prove causation. The debate over parent corporation liability under CERCLA stems from the "owners or operators" language in section 107.

Second, the plaintiff must prove that a release or threatened release of a "hazardous substance" from a facility has occurred.<sup>[16]</sup> Third, the plaintiff must prove that the "release" or "threatened release" of a "hazardous substance" caused the plaintiff to incur response costs.<sup>[17]</sup> Fourth, if the plaintiff is a private party then the plaintiff must show that its response costs are necessary and consistent with the national contingency plan (NCP).<sup>[18]</sup> If the plaintiff is the federal or state government, then it must show that it incurred response costs that are not inconsistent with the NCP.<sup>[19]</sup> Thus, CERCLA allows the government to recoup expenses that are not response costs under the national contingency plan. Finally, if the defendant PRP lacks a defense under CERCLA's provisions, then the plaintiff's CERCLA lawsuit should be successful.<sup>[20]</sup>

## III. PARENT CORPORATIONS' USE OF THE CORPORATE SHIELD TO ESCAPE CERCLA LIABILITY

Because CERCLA does not require the plaintiff to prove causation,<sup>[21]</sup> the issue of who may be a potentially responsible party becomes very important. In the context of corporations, whether corporations may hide behind the principle of limited liability has become a key issue.

Limited liability is a basic principle in the law of corporations. Essentially, the principle holds that shareholders of a corporation may only be liable to the extent of their investment in the corporation.<sup>[22]</sup> For parent corporations that are the sole shareholders of their subsidiary this means that only the subsidiary's assets may be reached. Thus, the parent's other assets are safeguarded from potential loss.

However, this principle of corporate law may succumb to the corporate veil-piercing principle that allows a court to find a parent corporation liable for the acts of its subsidiary.<sup>[23]</sup> Veil-piercing requirements differ amongst the states. Generally, veil-piercing occurs only if the corporate form was misused to commit fraud or some other illegal act.<sup>[24]</sup>

As stated previously, traditionally parent corporations are only held liable if the plaintiff can pierce the parent's corporate veil, essentially holding the parent derivatively liable for the costs of its subsidiary. There is, however, another rationale for finding a parent corporation liable, which is direct liability.<sup>[25]</sup> Direct liability applies if the parent corporation is deemed an "operator" of the facility.<sup>[26]</sup>

## A. Direct Liability

The direct liability theory departs from the traditional limited liability principle and allows a court to find a parent liable without piercing the corporate veil. At least two tests have been applied under the direct liability rationale. Some courts apply the actual control test, which extends liability to the parent if the parent exercised actual control over the its subsidiary's activities.<sup>[27]</sup> Another variation of this test examines whether the parent exercised actual control over the facility in violation of CERCLA. Some courts apply the authority-to-control test, which extends liability to the parent for merely having the authority to control its subsidiary's activities.<sup>[28]</sup>

### 1. Examination of Circuit Court Decisions Applying the Actual Control Test

At least three federal circuit courts have applied the actual control test when analyzing direct liability under CERCLA.

#### a. First Circuit's Application of the Actual Control Test

The United States Court of Appeals for the First Circuit adopted the actual control test in *United States v. Kayser-Roth Corp.*<sup>[29]</sup> In *Kayser-Roth*, the Environmental Protection Agency (EPA) sued the parent corporation of a dissolved subsidiary to recover the cleanup costs incurred in response to a release of trichloroethylene (TCE). The EPA alleged that the parent was both an "owner" and an "operator" of the site.<sup>[30]</sup> The court's analysis began by acknowledging that CERCLA created two categories of potentially liable parties, "owners" and "operators."<sup>[31]</sup> The court determined that Congress did not intend to exclude parent corporations from falling under the definition of "operators."<sup>[32]</sup> Accordingly, the *Kayser-Roth* court held that CERCLA, along with its legislative history and purpose, provides no justification for not finding a parent corporation directly liable as an "operator" under CERCLA.<sup>[33]</sup>

The First Circuit's test focuses on the parent's actual control over the subsidiary, rather than the parent's ability to control the subsidiary. The First Circuit explained that the district court properly found that the parent exerted practical total influence and control over the subsidiary's operations.<sup>[34]</sup> The court stated that the parent's control included environmental matters such as the approval of the installation of the cleaning system that used the TCE.<sup>[35]</sup> The parent had the power to control the release or threat of release of TCE, the power to direct the machinery causing the release, and the ability to limit the damage.<sup>[36]</sup> Moreover, the parent approved the installation of a scouring system that used TCE and was able to direct the subsidiary on how to handle the TCE.<sup>[37]</sup> The court held that such control was more than sufficient to meet the actual control test.<sup>[38]</sup>

#### b. Third Circuit's Application of the Actual Control Test

In *Lansford-Coaldale Joint Water Authority v. Tonolli Corp.*,<sup>[39]</sup> the Third Circuit specifically rejected the authority-to-control test, stating that the authority-to-control test "sweeps too broadly."<sup>[40]</sup> However, the court acknowledged that traditional rules of limited liability for corporations do not apply under CERCLA.<sup>[41]</sup> Consequently, the court adopted the actual control test, reasoning that the actual control test balances the benefits of limited liability with CERCLA's remedial purposes.<sup>[42]</sup>

The court adopted the First Circuit's test as explained in *Kayser-Roth*, and as explained by the Western District Court of Michigan in *CPC International, Inc. v. Aerojet-General Corp.*<sup>[43]</sup> The court explained that being an "operator" under CERCLA requires more than mere ownership.<sup>[44]</sup> Being an "operator" requires "active involvement in the activities of the subsidiary."<sup>[45]</sup> "[M]ere oversight' of the subsidiary or sister corporation's business in a 'manner appropriate and consistent with the investment relationship' does not ordinarily result in operator liability, a corporation's 'actual participation and control' over the other corporation's decision-making does."<sup>[46]</sup>

The court explained that determining whether the parent exercised sufficient control is a fact-intensive inquiry.<sup>[47]</sup> The inquiry involves considering the totality of the circumstances, while focusing on the parent's involvement in the subsidiary's day-to-day operations and policy-making decisions.<sup>[48]</sup> The court explained that since the test is concerned with control rather than ownership, a corporation can be held liable as the "operator" of its sister corporation.<sup>[49]</sup>

In *United States v. USX Corp.*,<sup>[50]</sup> the Third Circuit followed its ruling in *Lansford-Coaldale*. The court stated that it

recognized that "owner" and "operator" liability were separate and distinct concepts.<sup>[51]</sup> Accordingly, the court ruled that traditional corporate veil-piercing principles applied to cases where a plaintiff asserts that a parent is liable as an "owner."<sup>[52]</sup> However, where a plaintiff asserts that a parent corporation is liable as an "operator" then veil-piercing is not required.<sup>[53]</sup>

### c. Eleventh Circuit's Application of the Actual Control Test

In *Jacksonville Electric Authority v. Bernuth Corp.*,<sup>[54]</sup> the Eleventh Circuit followed the *Kayser-Roth* court's ruling that merely owning stock of a corporation that disposes of hazardous waste is insufficient to find the shareholder liable as an "operator" of the corporation's facility.<sup>[55]</sup> The court reasoned that being an operator of a corporation's facility requires more than complete ownership and the ability to control the facility that comes with complete ownership.<sup>[56]</sup> The court ruled that to be directly liable as an "operator" the parent must actually supervise the activities of the facility.<sup>[57]</sup> Notably, the Eleventh Circuit focused on the parent corporation's supervision over the facility rather than the subsidiary corporation.<sup>[58]</sup>

The Eleventh Circuit stated that most courts that have been concerned with the meaning of "operator liability" have held shareholders responsible when the shareholder (1) "actually participated in the operations of the facility . . . [o]r in the activities which resulted in disposal" or (2) "actually exercised control over, or was otherwise intimately involved in the operations of, the corporation immediately responsible for the operation of the facility."<sup>[59]</sup>

The Eleventh Circuit agreed with the reasoning of these cases.<sup>[60]</sup> The Eleventh Circuit did not find any evidence in *Bernuth* that demonstrated that the parent was actively involved in the facility's occupational business affairs, or that the parent itself actually participated in the contamination.<sup>[61]</sup> Thus, the court affirmed the district court's judgment that the parent corporation was not liable.<sup>[62]</sup>

### d. Criticisms of the Actual Control Test

At least one commentator has criticized the actual control test because it allows some entities that are related to the hazardous releases to escape liability.<sup>[63]</sup> Thus, this commentator complains that the standard is contrary to CERCLA's goal of broadly placing liability on those responsible for the substance's release.<sup>[64]</sup> The idea behind the goal is that CERCLA should place more cost on the entity so that the entity is encouraged to take more precautionary measures. Commentators argue that the actual control approach does not adequately address issues of fairness along with public health and safety.<sup>[65]</sup> One commentator notes, for example, that the test fails to consider the benefits the parent corporation receives from the illegal acts of its subsidiary.<sup>[66]</sup> This same commentator argues that if a parent benefits from its subsidiary's prohibited activity, then it ought to help cover clean-up costs in the interest of public health and safety.<sup>[67]</sup> The same commentator also disagrees with the actual control test because it allows a parent that has been involved in the subsidiary's activities to escape liability if it has not been in actual control of the activities that led to the pollution.<sup>[68]</sup>

## 2. Examination of Circuit Court Decisions Applying the Authority-to-Control Test

As explained previously, under the authority-to-control test a parent corporation may be held liable for the acts of its subsidiary merely for having the authority to control the activities of its subsidiary.<sup>[69]</sup> The Fourth Circuit has adopted this approach.<sup>[70]</sup> The Ninth Circuit has indicated in dicta that it favors this approach.<sup>[71]</sup>

### a. Fourth Circuit's Application of the Authority-to-Control Test.

In *Nurad, Inc. v. William E. Hooper & Sons Co.*,<sup>[72]</sup> the Fourth Circuit ruled that authority to control the facility, not actual control, is the standard for liability under CERCLA.<sup>[73]</sup> The court stated that the authority-to-control standard is proper because it holds a party liable if that party has the authority to undertake efforts to abate damage, but the party fails to exercise that authority.<sup>[74]</sup>

The *Nurad* court erroneously stated that most of the courts applied the authority-to-control standard to the term "operator."<sup>[75]</sup> For support, the *Nurad* court inadequately cited two district court opinions.<sup>[76]</sup> The *Nurad* court then stated that under the authority-to-control standard, a court is entitled to consider a defendant's actual conduct as

evidence of the authority to control.<sup>[77]</sup>

### *b. Criticisms of the Authority-to-Control Test*

Commentators criticize this approach for being too broad.<sup>[78]</sup> One commentator argues that a literal application of the standard would make liability inescapable for a parent corporation in every case where the parent's subsidiary is accused of a CERCLA violation.<sup>[79]</sup> Most courts have refused to apply the standard because it essentially obliterates the well-established principle that limits shareholder liability to the shareholder's investment.<sup>[80]</sup> These courts reason that if the parent or a main shareholder exercises normal activity regarding its subsidiary, then the parent should not be held liable.<sup>[81]</sup>

### *3. Second Circuit's Adoption of a Direct Liability Standard*

In *Schiavone v. Pearce*,<sup>[82]</sup> the Second Circuit attempted to draw a definite distinction between direct liability and derivative liability under CERCLA. The Second Circuit attempted to reconcile direct liability and derivative liability based on veil-piercing through an examination of CERCLA's goals and its unique statutory scheme.<sup>[83]</sup>

First, the court noted that CERCLA was designed to be remedial; thus it deserved a liberal interpretation.<sup>[84]</sup> Applying a liberal interpretation to CERCLA, the court concluded that imposing operator liability directly on parent corporations whose own acts violate CERCLA is consistent with the purpose of CERCLA.<sup>[85]</sup> The court then cited cases where courts held parent corporations independently liable, as operators, for the activities of their subsidiaries.<sup>[86]</sup> The court stated that the courts reasoned that finding operator liability in such cases was consistent with CERCLA's expansive goals despite the inconsistency with the traditional rules of corporate liability.<sup>[87]</sup> The court also cited cases where a subsidiary and its parent were respectively found independently liable as "owner" and "operator" for environmental harms caused by the same activities.<sup>[88]</sup> Again, the court stated that CERCLA's goals were to provide a liability scheme that departs from traditional corporate law limited liability principles.<sup>[89]</sup>

Despite the Second Circuit's references to CERCLA's goals as justification for finding a parent corporation directly liable, the Second Circuit stated that the most compelling argument for imposing direct liability on a parent corporation stems from the language of the statute.<sup>[90]</sup> The court highlighted Congress' use of "owner" and "operator" in section 107(a)(2) as denoting two different liability concepts.<sup>[91]</sup> The court proceeded to explain that the distinction between "owner" and "operator" has particular relevance in the context of parent and subsidiary corporations.<sup>[92]</sup> The court cited the Third Circuit, which explained:

Under CERCLA, a corporation may be held liable as an *owner* for the actions of its subsidiary corporation in situations in which it is determined that piercing the corporate veil is warranted . . . . *Operator* liability, in contrast, is generally reserved for those situations in which a parent or sister corporation is deemed, due to the specifics of its relationship with its affiliated corporation, to have had substantial control over the facility in question.<sup>[93]</sup>

Significantly, in a critical footnote the *Schiavone* court refused to rule on what degree of control was necessary to find the parent directly liable as an operator.<sup>[94]</sup> The court noted that the circuits were split on whether to apply the actual control standard or the authority-to-control standard.<sup>[95]</sup>

### *B. Derivative Liability*

A minority of courts strictly abides by the traditional notion of finding a parent corporation liable only if veil-piercing is warranted. These courts refuse to adopt a direct liability standard under CERCLA, because they refuse to part from traditional corporate liability principles. Two options exist under the derivative liability rationale.<sup>[96]</sup> Some courts hold that state corporate veil-piercing laws should be applied to actions under CERCLA.<sup>[97]</sup> Other courts hold that a federal common law rule of veil-piercing should be applied under CERCLA in order to produce a uniform system of derivative liability under the federal statute.<sup>[98]</sup>

The conflict of whether to apply state veil-piercing law or to adopt a federal standard for veil-piercing under CERCLA has created a lack of uniformity in CERCLA's application. Adding to the confusion, the courts applying a federal

common law rule of veil-piercing have not settled on one standard federal common law rule.<sup>[99]</sup> Consequently, this creates forum-shopping opportunities and prevents a consistent liability scheme from emerging under CERCLA.<sup>[100]</sup>

### 1. Fifth Circuit

In *Joslyn Manufacturing Co. v. T.L. James & Co.*,<sup>[101]</sup> the Fifth Circuit specifically refused to extend liability under CERCLA beyond the traditional concepts of corporate law.<sup>[102]</sup> The *Joslyn* court reasoned that CERCLA failed to define "owners" or "operators" as including the parent company of offending wholly owned subsidiaries.<sup>[103]</sup> Also, the *Joslyn* court reasoned that the legislative history of CERCLA failed to indicate that Congress intended to alter a basic tenet of corporate law by allowing for direct liability.<sup>[104]</sup>

In *Riverside Market Development Corp. v. International Building Products, Inc.*,<sup>[105]</sup> the Fifth Circuit held that a majority shareholder of a corporation that owns an asbestos manufacturing plant is not an "owner" under CERCLA's liability provisions.<sup>[106]</sup> The court stated that the property of the corporation belongs to the corporation not the shareholders.<sup>[107]</sup>

The Fifth Circuit then turned to the question of whether a majority shareholder can be considered an "operator" under CERCLA. The court first explained that it was not surprised that CERCLA failed to define "operator," because CERCLA was drafted hastily, "and passed through a lame-duck Congressional session . . ."<sup>[108]</sup> The court then stated that it could conceive of situations where an "individual director, officer or employee of a corporation may be considered an 'operator' of a manufacturing facility as defined by CERCLA . . ."<sup>[109]</sup>

The court explained that under traditional notions of corporate limited liability shareholders, officers, and employees would not be held responsible for acts of a valid corporation.<sup>[110]</sup> However, the court stated in dicta that CERCLA prevented individuals from hiding behind the corporate shield when they act as "operators" by actually participating in the conduct prohibited by the Act.<sup>[111]</sup> This statement is contrary to the Fifth Circuit's ruling in *Joslyn*, which occurred nearly one and a half years earlier. Thus, this indicates a change in the Fifth Circuit's view that corporate liability under CERCLA should strictly follow traditional notions of corporate liability.

## IV. UNITED STATES V. BESTFOODS

In *United States v. Bestfoods*<sup>[112]</sup> the Supreme Court reviewed the Sixth Circuit's opinion in *United States v. Cordova Chemical Co. of Michigan*,<sup>[113]</sup> dealing directly with the issue of what determines parent corporation liability under CERCLA.

### A. Facts of Bestfoods

In 1957, Ott Chemical Co. (Ott I) began manufacturing chemicals at a plant in Michigan.<sup>[114]</sup> Its unintentional and intentional dumping of hazardous substances caused significant pollution to the soil and ground water at the site.<sup>[115]</sup>

In 1965, CPC International (CPC)<sup>[116]</sup> incorporated a subsidiary to buy Ott I's assets in exchange for CPC stock.<sup>[117]</sup> CPC was the sole owner of the newly formed subsidiary.<sup>[118]</sup> CPC kept the name Ott Chemical Co. (Ott II) for the subsidiary, and continued manufacturing chemicals at the site and polluting the site and its surroundings.<sup>[119]</sup> CPC also kept the managers of Ott I and made them officers of Ott II.<sup>[120]</sup> Significantly, CPC kept the founder, president, and principal shareholder of Ott I, Arnold Ott, on board as an officer of Ott II.<sup>[121]</sup> Arnold Ott and several other officers of Ott II were also given positions at CPC.<sup>[122]</sup> Thus, these people performed duties for both CPC and Ott II.

In 1972, CPC sold Ott II to Story Chemical Company (Story).<sup>[123]</sup> Story operated the Ott II plant until it entered bankruptcy in 1977.<sup>[124]</sup> Soon after Story's bankruptcy, the Michigan Department of Natural Resources (MDNR) inspected the Ott II plant site for environmental damage.<sup>[125]</sup> MDNR found that the land was littered with thousands of leaking and exploding drums of waste.<sup>[126]</sup> MDNR also found that the soil and water was saturated with noxious chemicals.<sup>[127]</sup>

Soon after discovering the waste, MDNR began looking for a buyer for the property that would be willing to invest in the property's cleanup.<sup>[128]</sup> MDNR found Aerojet-General Corporation and arranged for the property's transfer from

Story's bankruptcy trustee.<sup>[129]</sup> Rather than acquire the property in its own name, Aerojet created a wholly owned California subsidiary, Cordova Chemical Company (Cordova/California) to purchase the property.<sup>[130]</sup> Cordova/California then created a wholly owned Michigan subsidiary, Cordova Chemical Company of Michigan (Cordova/Michigan) to run the facility.<sup>[131]</sup> Cordova/Michigan manufactured chemicals at the former Ott II site until 1986.<sup>[132]</sup>

In 1981, the EPA decided to oversee the site's cleanup.<sup>[133]</sup> The cleanup plan estimated expenses far into the tens of millions of dollars.<sup>[134]</sup> To recover some of the money spent on the cleanup the United States filed suit against CPC, Aerojet, Cordova/California, Cordova/Michigan, and Arnold Ott.<sup>[135]</sup> The suit was filed under section 107(a)(2) of CERCLA, which authorizes suits against, among others, "any person who at the time of disposal of any hazardous substance owned or operated any facility."<sup>[136]</sup>

The district court separated the trial into three phases: (1) liability; (2) remedy; and (3) insurance coverage.<sup>[137]</sup> As of the date of the Supreme Court's opinion, only the liability phase had been completed.<sup>[138]</sup> The parties stipulated that the plant was a facility within the meaning of section 101(9), that hazardous substances were released at the facility, and that the United States incurred response costs to clean up the site that were reimbursable under CERCLA.<sup>[139]</sup> Thus, the trial centered on the issue of whether CPC, as the parent corporation of Ott II, and Aerojet, as the parent corporation of the Cordova companies, had "owned or operated" Ott II's plant within the meaning of section 107(a)(2).<sup>[140]</sup>

### *B. The District Court's Opinion*

The district court ruled that liability of the parent corporation might exist in two ways.<sup>[141]</sup> First, the parent corporation may be directly liable under the "operator" language of CERCLA's section 107(a)(2).<sup>[142]</sup> The court reasoned that under this language CERCLA liability could attach to a parent corporation that acts in a manner that constitutes operation of a facility despite never owning the site. The court stated that Congress's addition of "operated . . . unmistakably expanded the reach of CERCLA beyond the limited realm of those who have 'owned' sites."<sup>[143]</sup> Second, the parent corporation may be held liable through common law veil-piercing, "which may arise in any liability case involving a corporate defendant."<sup>[144]</sup> Thus, the district court's opinion was consistent with the opinions of the majority of the circuits, which expanded corporate liability under CERCLA beyond traditional notions of corporate liability.

The district court reasoned, in its ruling on direct liability, that CERCLA's "owned or operated" language created a "new, middle ground" for corporate liability that "accommodates the general principle of limited liability and the broader principle of liability attaching for operative activity."<sup>[145]</sup> Accordingly, the court ruled that direct liability of a parent corporation is not found merely because a parent had involvement with its subsidiary through their investment relationship. Rather, the court ruled that the parent must actually "operate" the business of its subsidiary.<sup>[146]</sup>

The court applied the direct liability criteria to CPC and Aerojet and held both liable.<sup>[147]</sup> In regards to CPC, the court explained that CPC selected Ott II's board of directors and filled its executive offices with CPC's officials.<sup>[148]</sup> Further, another CPC official played a key role in developing Ott II's environmental compliance policy.<sup>[149]</sup>

The court did not reach the issue of determining whether the parents' actions were sufficient to pierce the corporate veil, because liability was already found under the direct liability approach.<sup>[150]</sup> However, the court stated that it would apply state veil-piercing laws if it were necessary.<sup>[151]</sup>

### *C. The Sixth Circuit's Opinion*

The Sixth Circuit provided a majority opinion as well as a concurring opinion by Judge Merritt which provides a more in-depth analysis.

#### *1. Majority Opinion*

In *United States v. Cordova Chemical Co. of Michigan*<sup>[152]</sup> the Sixth Circuit Court of Appeal recognized that a parent corporation may be held directly liable under section 107(a)(2) if it actually operates its subsidiary's facility, or if the

parent acts as a joint venturer with the subsidiary.<sup>[153]</sup> However, the Sixth Circuit refused to extend direct liability to the parent's actions concerning its subsidiary.<sup>[154]</sup> The Sixth Circuit explained that parent corporation liability for operating a facility that is held out to be operated by its subsidiary depends on two factors.<sup>[155]</sup> First, parent corporation liability depends upon the degree to which the parent controls the subsidiary.<sup>[156]</sup> Second, parent corporation liability depends upon the degree and form of its involvement with the facility.<sup>[157]</sup> These two factors must rise to a level that warrants piercing the corporate veil and disregarding the two separate corporate entities.<sup>[158]</sup> The Sixth Circuit's view was that traditional notions of corporate law must be strictly followed even when finding a parent corporation directly liable. Hence, the Sixth Circuit considered direct and derivative liability as a single inquiry.

The Sixth Circuit held that determining whether piercing the veil was warranted required application of Michigan law.<sup>[159]</sup> Applying Michigan veil-piercing law, the Sixth Circuit concluded that the parent corporations were not liable for controlling their subsidiaries' actions, because the parents and their subsidiaries maintained separate personalities and the parents never used their subsidiaries' corporate form to commit fraud or subvert justice.<sup>[160]</sup>

## 2. Judge Merritt's Opinion

Judge Merritt concurred with the portion of the district court's opinion that held CPC International directly liable as an "operator."<sup>[161]</sup> However, Judge Merritt disagreed with the majority's application of Michigan veil-piercing law.<sup>[162]</sup> Judge Merritt opined that federal common law should govern whether the parents should be held liable as current "owners."<sup>[163]</sup>

Judge Merritt was the only judge in the en banc hearing to address the choice of law issue. However, other judges have attempted to demonstrate why federal rules should be used for veil-piercing over state rules.<sup>[164]</sup>

Judge Merritt stated that the law is well-established that federal law governs actions arising under nationwide federal programs.<sup>[165]</sup> Judge Merritt explained that in *United States v. Kimbell Foods, Inc.*,<sup>[166]</sup> the Supreme Court enumerated factors that a court must consider in deciding whether to apply state law or federal common law to federal programs. The *Kimbell Foods* Court explained that federal programs that "by their nature" need to be uniform in application throughout the nation necessitate formulation of controlling federal rules.<sup>[167]</sup> However, if little need exists for uniform application of the law nationwide, then state law may be used as the federal rule of decision.<sup>[168]</sup> Along with uniformity, courts must also consider whether applying state law would frustrate specific objectives of the federal program.<sup>[169]</sup> Also, courts must consider whether application of a uniform federal rule would disrupt commercial relationships founded on state law.<sup>[170]</sup>

Applying the *Kimbell Foods* test, Judge Merritt determined that all three of the *Kimbell Foods* factors supported using a uniform federal rule for veil-piercing under CERCLA.

In attempting to eliminate the dangers of hazardous wastes, CERCLA presents a national solution to a nationwide problem. One can hardly imagine a federal program more demanding of national uniformity than environmental protection. Congress did not intend that the ability of the executive to fund the clean up of hazardous waste sites should depend on the attitudes of the several states toward parent-subsidiary liability in general, or CERCLA in particular. The need for a uniform federal rule is especially great for questions of piercing the corporate veil, since liability under the statute must not depend on the particular state in which a defendant happens to reside.<sup>[171]</sup>

Judge Merritt argued that allowing state law to control in this area would allow corporations to evade CERCLA by incorporating their subsidiaries in states with tougher veil-piercing requirements.<sup>[172]</sup> In addition, Judge Merritt argued that states do not have as strong an interest in regulating shareholder liability to outside parties as they do in regulating the internal affairs of a corporation.<sup>[173]</sup>

Although few of the circuit courts have considered the choice of law issue,<sup>[174]</sup> Judge Merritt argues that the weight of federal precedent supports a federal common law standard for piercing the corporate veil.<sup>[175]</sup>

Judge Merritt then continued his opinion by advocating a federal standard for veil-piercing under CERCLA.<sup>[176]</sup> He states that two elements are generally regarded as essential to piercing the corporate veil: "First, the dominant

corporation must have controlled the subservient corporation, and second, the dominant corporation must have proximately caused [the] plaintiff harm through misuse of this control."[\[177\]](#)

Judge Merritt acknowledged that some cases require an element of fraud for piercing the corporate veil.[\[178\]](#) However, Judge Merritt determined that fraud should not be required in cases under CERCLA.[\[179\]](#) He explained that the public policy considerations underlying CERCLA provide a sufficient equitable basis for piercing the corporate veil whether or not fraud is shown.[\[180\]](#)

Judge Merritt also dismissed the proximate cause element, because Congress provided statutory liability criteria for CERCLA.[\[181\]](#) Thus, if a CERCLA defendant is determined to be a potentially responsible party under section 107, then no finding of proximate cause is required.

Judge Merritt then explained that the federal common law test for piercing the corporate veil under CERCLA should be whether the parent corporation "controls or at the relevant time controlled the management and operations of the subsidiary."[\[182\]](#) Federal courts applying the above standard have utilized either a twelve-factor test[\[183\]](#) or a seven-factor test.[\[184\]](#) Judge Merritt explained that these tests overlap, and neither lists all the factors that should be considered.[\[185\]](#) Rather than advocate either of these two tests, Judge Merritt advocated a test that looks at the totality of the circumstances to determine whether the parent controls or controlled the management and operations of the subsidiary.[\[186\]](#) If the trier of fact determines that the parent controlled the management and operations of its subsidiary, then the veil would be pierced and the parent would be found liable.

#### *D. The Supreme Court's Opinion*

The Supreme Court granted certiorari to resolve a conflict among the circuits over the extent to which parent corporations may be held liable under CERCLA for environmental violations concerning their subsidiaries.[\[187\]](#) The Supreme Court split its opinion into a section addressing derivative liability and a section addressing direct liability.

##### *1. Supreme Court's Opinion on Derivative Liability Under CERCLA*

Justice Souter, writing for a unanimous Court, began the analysis with an explanation of general rules of corporate liability accompanied by an explanation of general corporate veil-piercing requirements.[\[188\]](#) The Court explained that CERCLA failed to specifically speak to the liability implications of corporate liability.[\[189\]](#) Accordingly, the Court refused to abrogate state law regarding corporate liability.[\[190\]](#) Thus, the Court ruled that the Sixth Circuit correctly applied state law in holding that derivative liability may only exist if the plaintiff can pierce the corporate veil.[\[191\]](#)

The Court acknowledged that the circuits were split on whether to apply applicable state veil-piercing law or to apply a federal common law of veil-piercing.[\[192\]](#) However, in a critical footnote the Court explained that the case did not raise this issue, stating that none of the parties challenged the Sixth Circuit's holding that CPC and Aerojet incurred no derivative liability.[\[193\]](#)

In footnote ten, the Court hid an additional important piece of information. The Court stated that some courts and commentators have suggested that the indirect, veil-piercing approach can only subject a parent corporation to liability as an "owner," and not as an "operator."[\[194\]](#) However, the Court disagreed with this.[\[195\]](#) The Court stated that in cases where a subsidiary "operates," but does not "own" a facility, the parent may be held derivatively liable for the subsidiary's acts as the "operator."[\[196\]](#) This finding requires that the parent pervasively control the subsidiary for a sufficiently improper purpose to justify veil-piercing.[\[197\]](#) Again, the Court fails to address the issue of what rules of veil-piercing should apply.[\[198\]](#)

##### *2. Supreme Court's Opinion on Direct Liability Under CERCLA*

The Court then addressed the issue of finding a parent company directly liable for its own actions in operating a facility owned by its subsidiary.[\[199\]](#) The Court explained that nothing in CERCLA's terms bar a parent corporation from direct liability.[\[200\]](#) Under CERCLA's plain language any person who "operates" a facility may be directly liable for the costs of cleaning up the pollution.[\[201\]](#) The Court stated that this extends to "the owner's parent corporation or business partner, or even a saboteur who sneaks into the facility at night to discharge its poisons out of malice."[\[202\]](#)

Significantly, the existence of the parent-subsidary relationship is of no relevance in cases where the operation of the facility is done on behalf of the parent corporation.[\[203\]](#) Thus, there is no veil-piercing requirement to find a parent corporation directly liable.[\[204\]](#)

In defining actions that deserve finding the parent corporation directly liable, the Court analyzed CERCLA's definition of a facility's "operator."[\[205\]](#) The Court determined that for purposes of CERCLA's concern with environmental contamination, "an operator must manage, direct, or conduct operations specifically related to pollution, that is, operations having to do with the leakage or disposal of hazardous waste, or decisions about compliance with environmental regulations."[\[206\]](#)

The Court overruled the Sixth Circuit's analysis of direct liability, because the Sixth Circuit combined direct and derivative liability.[\[207\]](#) The Court explained that the Sixth Circuit's test asks about the relationship between the parent and the subsidiary corporation, rather than asking about the parent corporation's interaction with the subsidiary's facility.[\[208\]](#) To keep direct and derivative liability distinct, the Court stated that the focus of the derivative and direct liability tests must be different.[\[209\]](#)

Under the direct liability test, the focus should not be whether the parent corporation "operates" the subsidiary.[\[210\]](#) Rather, the focus should be whether the parent corporation "operates" the facility, which is evidenced by the parent corporation's "participation in the activities of the facility."[\[211\]](#) Thus, the Court stated that the district court's analysis should have rested on the relationship between CPC and the facility in question, rather than solely on CPC's relationship with its subsidiary, Ott II.[\[212\]](#)

The Court also stated that the district court erred by not recognizing that merely serving as a director of a parent corporation and its subsidiary simultaneously is insufficient to subject the parent to liability for the acts of the subsidiary.[\[213\]](#) This was an error by the district court because the common law rule states that parents and subsidiaries may have dual office holders without attributing the acts of the subsidiary to the parent.[\[214\]](#) If the mere evidence of common corporate personnel acting at management or direction levels would support a finding of a parent corporation's direct liability, then piercing the corporate veil to find a parent indirectly liable would become "academic."[\[215\]](#) Upholding the district court's ruling would create "a relaxed, CERCLA-specific rule of derivative liability that would banish traditional standards and expectations from the law of CERCLA liability."[\[216\]](#) The Court based its refusal to apply this rule on Congress' failure to address it in CERCLA.[\[217\]](#)

Accordingly, the Court agreed with the Sixth Circuit's ruling that a participation-and-control test, examining the parent's supervision over its subsidiary and assuming that dual office holders always act for the parent, cannot be used to identify direct parental liability.[\[218\]](#) However, the Court opined that the Sixth Circuit erred by confining its examples of direct parental operation to exclusive or joint ventures.[\[219\]](#) The Court stated that the Sixth Circuit erred by not considering the possibility of direct operation by CPC in this case.[\[220\]](#)

The Court proceeded to explain that Congress's use of the verb "to operate" means more than just mechanically activating pumps and valves.[\[221\]](#) Rather, Congress intended operation to include the "exercise of direction over the facility's activities."[\[222\]](#) The Sixth Circuit recognized this for two situations.[\[223\]](#) First, a parent may be directly liable if the parent operates the facility in place of the subsidiary.[\[224\]](#) Second, a parent may be directly liable if the parent operates the facility alongside the subsidiary in a type of joint venture.[\[225\]](#) The Supreme Court upheld the Sixth Circuit's ruling that direct liability should extend to these cases.

However, the Supreme Court extended the Sixth Circuit's reasoning to include a situation where a dual officer or director departs "so far from the norms of parental influence exercised through dual office-holding as to serve the parent, even when ostensibly acting on behalf of the subsidiary in operating the facility."[\[226\]](#) The Court also extended it to cases where a parent's agent directs activities at the facility when the agent has no responsibility to the subsidiary.[\[227\]](#)

The Court then engaged in a line-drawing analysis to separate acts that stem from the normal parent-subsidary relationship from acts of direct operation that give rise to parent liability.[\[228\]](#) The Court stated that the critical question that must be answered to determine if a parent corporation should be held directly liable is "whether, in degree and detail, actions directed to the facility by an agent of the parent alone are eccentric under accepted norms of parental

oversight of a subsidiary's facility." [229] The Court specifically excepted parent corporations from direct liability for engaging in:

[A]ctivities that involve the facility but which are consistent with the parent's investor status, such as monitoring of the subsidiary's performance, supervision of the subsidiary's finance and capital budget decisions, and articulation of general policies and procedures, should not give rise to direct liability. [230]

In the instant case, the Court determined that the district court's opinion indicated that evidence existed that supported finding CPC directly liable. [231] The Court mentioned the fact that an agent of CPC played a role in dealing with the toxic risks that emanated from the plant. [232] The agent was not an employee of CPC's subsidiary Ott II; thus his actions were on behalf of CPC. [233] The Court quoted language from the district court's opinion, stating that the agent "actively participated in and exerted control over a variety of Ott II environmental matters," and the agent "issued directives regarding Ott II's responses to regulatory inquiries." [234]

The Court refused to specifically rule that the evidence was enough to find CPC directly liable. [235] However, the Court stated that the findings were significant enough to raise an issue of CPC's operation of the facility through the agent's actions. [236] Consequently, the Court vacated the Sixth Circuit's opinion and remanded the case to the district court for a reevaluation of the agent's role and the role of any other CPC agent who may have played a part in operating the Muskegon facility. [237]

## V. ANALYSIS OF SUPREME COURT'S OPINION

The Supreme Court correctly broke down its analysis of parent corporation liability into the areas of derivative or indirect liability and direct liability. This is a correct analysis because CERCLA does not rest liability entirely on the ownership of the polluting facility. If CERCLA's liability provisions only provided for liability to the "owner" of the facility, then traditional corporate veil-piercing principles would be the only means to find a parent liable under CERCLA.

However, the statute's language states, and its purpose suggests, that CERCLA was intended to expand parent liability beyond traditional notions of corporate liability. This is evidenced by the term "operator" which coexists disjunctively with "owner" in CERCLA's liability provisions. The majority of the circuits agree with this position, and the Supreme Court correctly followed suit by splitting its decision into separate analyses of derivative liability and direct liability.

### A. Supreme Court's Derivative Liability Standard

The Supreme Court implicitly upheld the Sixth Circuit's use of Michigan's veil-piercing laws for determining derivative liability under CERCLA. [238] The Court apparently based this ruling on its refusal to abrogate state corporation law, stating that state corporation law should not be ignored just because a federal statute is involved. The Court stated that "the failure of the statute to speak to a matter as fundamental as the liability implications of corporate ownership demands application of the rule that '[i]n order to abrogate a common-law principle, the statute must speak directly to the question addressed by the common law.'" [239]

The Court acknowledged the split amongst the circuit courts on whether to apply state veil-piercing law or whether to apply a federal common law rule of veil-piercing. [240] However, in a critical footnote the Court refused to rule on this issue. [241]

The Court's refusal to abrogate state corporation law based on CERCLA's failure to specifically speak to parent corporation liability indicates that the Court would probably rule that courts should apply the appropriate state veil-piercing law. [242] However, ruling that state veil-piercing law should apply under CERCLA would be a mistake. Making such a rule would allow parent corporations to forum shop by choosing to incorporate and locate their subsidiaries in states where veil-piercing laws are more stringent. Thus, proving parent corporation liability under CERCLA by piercing the corporate veil would become more difficult. Clearly, this is not the type of application that Congress envisioned when it enacted CERCLA. Moreover, this application would be contrary to CERCLA's underlying policy, which is to place liability on all potentially responsible parties.

Despite Congress's failure to specifically abrogate state corporation law, a federal rule of veil-piercing should be applied in cases under CERCLA. The Supreme Court should have adopted the federal common law test for veil-piercing that is advocated by Judge Merritt in his concurring opinion in *United States v. Cordova Chemical Co. of Michigan*.[\[243\]](#)

As explained, *supra* Part II.B.2.b, Judge Merritt's test requires that the trier of fact examine the totality of the circumstances to determine whether the parent controlled the management and operations of the subsidiary. If the trier of fact determines that the parent exerted control, then the corporate veil should be pierced and the parent should be found liable.

Consistent with CERCLA's relaxed liability policy of finding all potentially responsible parties liable, this test does not require that the plaintiff prove that the parent corporation proximately caused the violation. CERCLA provides for strict liability. Also consistent with CERCLA's liability policy, the test does not require that the plaintiff show that the parent corporation's conduct was fraudulent.

According to dicta in the Supreme Court's opinion in *Bestfoods*, this test should not only be applied to cases where a parent's subsidiary owns and operates a facility that violates CERCLA. Courts should also apply this test to pierce the corporate veil in cases where the subsidiary operates the facility, but does not own the facility.

Evidence of Congress's intent for federal common law to supplement CERCLA exists. During the debates on CERCLA Representative Florio stated, "[t]o insure the development of a uniform rule of law, and to discourage business[es] dealing in hazardous substances from locating primarily in states with more lenient laws, the bill will encourage the further development of a Federal common law."[\[244\]](#)

Also, prior Supreme Court rulings support adopting a federal common law rule for veil-piercing in cases under CERCLA. First, as explained in Judge Merritt's concurring opinion in *Cordova*, the Supreme Court's ruling in *United States v. Kimbell Foods, Inc.*[\[245\]](#) supports the adoption of a federal common law rule.[\[246\]](#)

Another justification for promulgating a federal rule of veil-piercing under CERCLA is the Supreme Court's ruling in *Boyle v. United Technologies, Corp.*[\[247\]](#) According to *Boyle*, federal common law principles should control where: (1) a unique federal interest is presented, and (2) significant conflict exists between a federal interest and state law.[\[248\]](#)

Consistent with the requirements in *Boyle*, this situation presents a unique federal interest. First, a unique federal interest exists because CERCLA is a federal statute and should be applied as uniformly as possible. CERCLA is the primary means for funding the cleanup of hazardous waste sites. If the Court continues to allow CERCLA's liability provisions to be manipulated by all the federal courts to provide an inconsistent liability scheme, then CERCLA will be evaded by corporations taking advantage of relaxed rules in certain states.

Second, determining whether a parent corporation is a potentially responsible party is key for a plaintiff to recover under CERCLA. This issue could determine whether the Superfund is reimbursed for a significant amount of money. Clearly, this is of interest to all United States taxpayers. Third, as explained above, Congress's intent that a federal common law assist in providing a uniform application of CERCLA is apparent in CERCLA's legislative history.

Also consistent with the Supreme Court's requirements, significant conflict exists between federal policy and state law. Currently, federal courts are split on whether to apply state veil-piercing principles or a federal common law rule of veil-piercing. The courts that apply a federal common law rule of veil-piercing are even split on what factors should make up the federal common law rule. This only serves to increase the inconsistencies in determining parent corporation liability under CERCLA. Thus, one federal rule for veil-piercing should be adopted and applied for cases arising under CERCLA.

### *B. Supreme Court's Direct Liability Standard*

Since Congress failed to define "operate" within CERCLA, the Court appropriately provided definition to the word. The Court's definition essentially extends "operate" to any decision-making concerning environmental matters of a hazardous waste "facility."[\[249\]](#)

The Court properly ruled that parent corporations, as well as anyone else, should be included as operators if they act in a manner that falls within the Court's definition of "operate." This analysis was correct because CERCLA failed to specifically exclude parent corporations, or anyone else, from being classified as an operator. Also, and more importantly, CERCLA's policy of extending liability to all potentially responsible parties is upheld and bolstered by the Supreme Court's decision to include parent corporations under the term "operate." Moreover, a majority of the United States appellate courts have ruled that parent corporations should fall under the definition of "operate" if their acts constitute operation of the facility.

Significantly, the Court ruled that direct liability should focus on whether the parent "operated" the facility, rather than whether the parent "operated" the subsidiary. This is significant because, by demanding that the analysis of operation focus on the facility, the Court allows derivative liability alone to provide for liability where a parent controls the operation of its subsidiary. Notably, the circuit courts were inconsistent in their opinions on direct liability. While some referred to a parent operating its subsidiary when analyzing direct liability,[\[250\]](#) other circuits referred to the parent operating the specific facility that violated CERCLA.[\[251\]](#)

The Supreme Court's analysis was correct on this issue for two reasons. First, focusing on the parent's control of the facility allows traditional limited liability concepts to function independently of the direct liability standard that is prescribed by CERCLA. Second, the statute's liability provisions state that the issue of operation should focus on the operator of the facility.[\[252\]](#) The Supreme Court's ruling that a parent can be derivatively liable for a subsidiary's mere operation of a facility is not inconsistent with the statute, because it follows traditional veil-piercing principles.

To illustrate how the Court's opinion provides clarification, imagine a situation where a parent's subsidiary corporation owns other businesses besides a facility that has released hazardous waste. The parent may control the subsidiary's operation concerning its other businesses, but allow the subsidiary to run the facility. While this may be a situation that warrants piercing the corporate veil, it is clearly not a situation where the parent should be found directly liable.

Contrary to the decisions of the circuit courts regarding direct liability, the Supreme Court refused to adopt either the actual control standard or the authority-to-control standard. Rather, the Supreme Court adopted a standard that examines specific situations where a parent corporation's conduct rises to a level that warrants finding the parent corporation directly liable as an operator. Each of the situations described by the Court do not require an analysis of whether the parent controlled the subsidiary, as does the derivative liability standard. Two of the situations merely ask a court to examine if the parent was either running the facility independently or participating in a joint venture with its subsidiary to run the facility.

The Court does not list specific factors to examine when determining if the above two situations are met. However, determining whether a parent is running a facility is an easy inquiry. This determination just requires an examination of who is making the decisions concerning the facility. Determining whether a joint venture is taking place can be a more difficult inquiry. However, if the facts come close to suggesting a joint venture, then a court should find the parent and the subsidiary directly liable.

The third situation the Court describes is when the actions of an agent of the parent alone directed toward its subsidiary's facility are eccentric with respect to the normal parent-subsidiary relationship. The Court specifically excepted actions that deal with the parent's investor status. However, the Court clarified actions by a parent's agent that could be considered actions that rise to the level that warrants finding the parent directly liable as an "operator." These actions include any act by an agent to participate in, or control decisions concerning environmental matters for the subsidiary's facility.

The Court's extension of the scope of a parent corporation's direct liability under CERCLA to acts concerning a parent's agent is also consistent with CERCLA's policy of holding all potentially responsible parties liable. In such cases, the Court appropriately excludes financial oversight by a parent's agent, because finance is an area where a parent should always provide oversight. However, once a parent's agent acts in a manner which directly affects decisions concerning environmental matters that ultimately subject the facility to CERCLA violations, then the parent should be exposed to direct liability under CERCLA's "operator" provision. This standard appropriately prevents a parent corporation from escaping liability for acts of an agent, for which the corporation should be found vicariously liable.

The Court's standard for finding direct liability strikes an appropriate balance between the actual control and the authority-to-control standards. The standard does not violate the main criticism of the authority-to-control standard, which is that parents should not be held liable for exercising normal activity toward its subsidiary. Also, the standard does not make liability inescapable for a parent corporation in every case where its subsidiary is accused of violating CERCLA.

The standard does not violate the main criticism of the actual control test, which is that the standard is contrary to CERCLA's goal of placing liability on those responsible for the substance's release. Rather, the standard allows a parent to be held liable in the cases where a parent should be held directly liable, which is in cases where the parent takes an active role in making environmental decisions concerning the facility violating CERCLA.

## VI. CONCLUSION

Clearly, the Court should have taken the opportunity in *Bestfoods* to adopt a federal common law rule of veil-piercing for cases under CERCLA. Such a rule, coupled with the Supreme Court's ruling regarding direct liability, would assist in providing a uniform and meaningful standard for determining parent corporation liability under CERCLA. However, if the Court continues to refuse to address this issue then Congress should amend CERCLA to provide clear criteria for determining parent corporation liability under CERCLA.

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[1] *See* 42 U.S.C. §§ 6901-6987 (1998).[Return to text.](#)

[2] *See* 42 U.S.C. §§ 9601-9675 (1998).[Return to text.](#)

[3] *See* Kamie Frischknecht Brown, *Parent Corporation Liability for Subsidiary Violations Under § 107 of CERCLA: Responding to United States v. Cordova Chemical Co.*, 1998 BYU L. REV. 265 (1998).[Return to text.](#)

[4] 113 F.3d 572 (6th Cir. 1997), *rev'd. sub. nom.* *United States v. Bestfoods, Inc.*, 118 S.Ct. 1876 (1998).[Return to text.](#)

[5] *See id.* at 580.[Return to text.](#)

[6] *See* Brown, *supra* note 5, at 266.[Return to text.](#)

[7] *See* *Shiavone v. Pearce*, 79 F.3d 248 (2d Cir. 1996); *United States v. TIC Inv. Corp.*, 68 F.3d 1082 (8th Cir. 1995); *Lansford-Coaldale Joint Water Auth. v. Tonolli Corp.*, 4 F.3d 1209 (3d Cir. 1993); *Jacksonville Elec. Auth. v. Bernuth Corp.*, 996 F.2d 1107 (11th Cir. 1993); *John S. Boyd Co. v. Boston Gas Co.*, 992 F.2d 401 (1st Cir. 1993); *Nurad, Inc. v. William E. Hooper & Sons, Co.*, 966 F.2d 837 (4th Cir. 1992); *United States v. Kayser-Roth Corp.*, 910 F.2d 24 (1st Cir. 1990). *But cf.* *Joslyn Mfg. Co. v. T.L. James & Co.*, 893 F.2d 80 (5th Cir. 1990) (ruling that a parent corporation's liability must be established by piercing the corporate veil). *Joslyn's* remaining precedence is in question as a result of a subsequent Fifth Circuit opinion holding that individual officers and employees could be held directly liable as CERCLA operators when they actually participate in wrongful conduct and that "[t]his personal liability is distinct from the derivative liability that results from "piercing the corporate veil." *Riverside Mkt. Dev. Corp. v. International Bldg. Prods., Inc.*, 931 F.2d 327, 330 (5th Cir. 1991) (quoting *United States v. Northeastern Pharm. & Chem. Co.*, 810 F.2d 726, 744 (8th Cir. 1986)).

[8] 118 S.Ct. 1876 (1998).[Return to text.](#)

[9] *See* RICHARD V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION—LAW, SCIENCE, AND POLICY 284-85 (1996).[Return to text.](#)

[10] See Amy C. Stovall, *Limiting Operator Liability for Parent Corporations Under CERCLA*: United States v. Cordova Chemical Co., 43 VILL. L. REV. 219, 228 & n.28 (1998). [Return to text.](#)

[11] See 42 U.S.C. § 9611. [Return to text.](#)

[12] There is debate over whether a private party can bring an action under CERCLA, but the language of the statute clearly provides that a private party may recover costs incurred consistent with the national contingency plan. See 42 U.S.C. § 9607(a)(4)(B) (1995). [Return to text.](#)

[13] See 42 U.S.C. § 9607 (1995). [Return to text.](#)

[14] See Stovall, *supra* note 12, at 234 & n.40. [Return to text.](#)

[15] See 42 U.S.C. § 9607(a) (1)-(4) (1995). [Return to text.](#)

[16] See Stovall, *supra* note 12, at 234. "'[H]azardous substance' is broadly defined by section 101(14) to include hazardous wastes subject to regulation under subtitle C of RCRA, toxic water pollutants regulated under section 307 of the Clean Water Act, hazardous air pollutants listed under section 112 of the Clean Air Act, imminently hazardous chemicals regulated under section 7 of [the Toxic Substances Control Act], substances subject to 311 of the Clean Water Act, and additional substances designated by the EPA." PERCIVAL, *supra* note 11, at 285. [Return to text.](#)

[17] See Stovall, *supra* note 12, at 235 & n.44. "'Release' is broadly defined in section 101(22) to cover just about any means for a substance to escape into the environment. Not all releases of hazardous substances fall within CERCLA's jurisdiction. Section 107(i) of CERCLA exempts the application of pesticides registered under [the Federal Insecticide, Fungicide, and Rodenticide Act], and section 107(j) exempts federally permitted releases. Federally permitted releases are defined in section 101(10) to include discharges authorized by permits issued under the Clean Water Act, RCRA, the Ocean Dumping Act, the Safe Drinking Water Act, the Clean Air Act, and the Atomic Energy Act, and certain fluid injection practices for producing oil or natural gas." PERCIVAL, *supra* note 11, at 285. [Return to text.](#)

[18] See 42 U.S.C. § 9607(a)(4)(B). [Return to text.](#)

[19] See 42 U.S.C. § 9607(a)(4)(A). [Return to text.](#)

[20] See 42 U.S.C. § 9607(b) (listing defenses). [Return to text.](#)

[21] CERCLA provides for strict liability; thus it is not necessary to prove fault. CERCLA also provides for joint and several liability whenever liability is indivisible. A defendant PRP may be found liable for damages that include: (1) all government or Indian tribe response costs not inconsistent with the NCP; (2) any other necessary private response costs consistent with the NCP; (3) damages for harm to natural resources, including reasonable costs of assessing such damage; and (4) costs of any health assessment or health effects study. Need Cite. [Return to text.](#)

[22] See Stovall, *supra* note 11, at 237-38 (citing Ronald G. Aronovsky & Lynn D. Fuller, *Liability of Parent Corporations for Hazardous Substance Releases Under CERCLA*, 24 U.S.F. L. REV. 421, 431 (1990)). [Return to text.](#)

[23] See *Chicago, M. & St. P. Ry. Co. v. Minneapolis Civic and Commerce Assn.*, 247 U.S. 490, 501 (1918). [Return to text.](#)

[24] See *United States v. Bestfoods*, 118 S.Ct. 1876, 1885 (1998) (citing *Anderson v. Abbott*, 321 U.S. 349, 362 (1944); *Chicago, M. & St. P. Ry. Co. v. Minneapolis Civic and Commerce Assn.*, 247 U.S. 490, 501 (1918)). [Return to text.](#)

[25] See Brown, *supra* note 5, at 270 n.23. [Return to text.](#)

[26] See *id.* [Return to text.](#)

[27] See, e.g., *United States v. Kayser-Roth Corp., Inc.*, 910 F.2d 24, 27 (1st Cir. 1990). [Return to text.](#)

[28] See, e.g., *Nurad, Inc. v. William Hooper & Sons Co.*, 966 F.2d 837 (4th Cir. 1992). [Return to text.](#)

[29] 910 F.2d at 27. [Return to text.](#)

[30] See *id.* at 25. [Return to text.](#)

[31] See *id.* at 26. [Return to text.](#)

[32] *See id.* [Return to text.](#)

[33] *See id.* [Return to text.](#)

[34] *See id.* at 27 (citing the district court's opinion at 724 F. Supp. 15, 18 (D.R.I. 1989)). [Return to text.](#)

[35] *See id.* [Return to text.](#)

[36] *See id.* [Return to text.](#)

[37] *See id.* [Return to text.](#)

[38] *See id.* [Return to text.](#)

[39] 4 F.3d 1209 (1993). [Return to text.](#)

[40] *Id.* at 1221. [Return to text.](#)

[41] *See id.* at 1220. [Return to text.](#)

[42] *See id.* at 1221. [Return to text.](#)

[43] *See id.* Significantly, *CPC Int'l* is the trial court's decision for *Bestfoods*. [Return to text.](#)

[44] *See id.* (citing *CPC Int'l, Inc. v. Aerojet-General Corp.*, 777 F. Supp. 549 (W.D. Mich. 1991), *rev'd and remanded sub nom. United States v. Cordova Chem. Co. of Mich.*, 113 F.3d 572 (6th Cir. 1997), *vacated and remanded sub nom. United States v. Bestfoods et al.*, 118 S.Ct. 1876 (1998)). [Return to text.](#)

[45] *Id.* at 1222 (quoting *United States v. Kayser-Roth Corp.*, 910 F.2d 24, 27 (1st Cir. 1990)). [Return to text.](#)

[46] *Id.* (quoting *CPC Int'l*, 777 F. Supp. 549). [Return to text.](#)

[47] *See id.* at 1222 (citing *John S. Boyd Co. v. Boston Gas Co.*, 992 F.2d 401, 408 (1st Cir. 1993)). [Return to text.](#)

[48] *See id.* (citing *CPC Int'l*, 777 F. Supp. 549). [Return to text.](#)

[49] *See id.* [Return to text.](#)

[50] 68 F.3d 811 (3d Cir. 1995). [Return to text.](#)

[51] *See id.* at 822. [Return to text.](#)

[52] *See id.* at 823. [Return to text.](#)

[53] *See id.* [Return to text.](#)

[54] 996 F.2d 1107 (11th Cir. 1993). [Return to text.](#)

[55] *See id.* at 1110. [Return to text.](#)

[56] *See id.* [Return to text.](#)

[57] *See id.* (emphasis added) [Return to text.](#)

[58] The significance of this will be explained in Part IV.B. [Return to text.](#)

[59] *Id.* at 1110 (quoting *Levin Metals, Corp. v. Parr-Richmond Terminal Co.*, 781 F. Supp. 1454, 1456-57 (N.D. Cal. 1991) (emphasis in original omitted)). [Return to text.](#)

[60] *See id.* [Return to text.](#)

[61] *See id.* at 1111.[Return to text.](#)

[62] *See id.*[Return to text.](#)

[63] *See* Brown, *supra* note 5, at 281-82.[Return to text.](#)

[64] *See id.*[Return to text.](#)

[65] *See id.*[Return to text.](#)

[66] *See id.*[Return to text.](#)

[67] *See id.*[Return to text.](#)

[68] *See id.*[Return to text.](#)

[69] *See id.* at 282-83.[Return to text.](#)

[70] *See* Nurad, Inc., v. William E. Hooper & Sons Co., 966 F.2d 837, 842 (4th Cir. 1992). Although this was a private cost-recovery action involving a lessor/lessee, not a parent/ subsidiary, presumably the Fourth Circuit would apply the same standard to parent corporations. *See* Brown, *supra* note 5, at 283 n.84.[Return to text.](#)

[71] *See* Kaiser Aluminum & Chem. Corp. v. Catellus Dev. Corp., 976 F.2d 1338, 1341-42 (9th Cir. 1992).[Return to text.](#)

[72] 966 F.2d 837 (4th Cir. 1992).[Return to text.](#)

[73] *See id.* at 842.[Return to text.](#)

[74] *See id.*[Return to text.](#)

[75] *See id.*[Return to text.](#)

[76] *See id.* (citing CPC Int'l, Inc. v. Aerojet-General Corp., 731 F. Supp. 783, 788 (W. D. Mich. 1989); Idaho v. Bunker Hill Co., 635 F. Supp. 665, 671-72 (D. Idaho 1986)).[Return to text.](#)

[77] *See id.* (citing Riverside Market Dev. Corp. v. International Bldg. Prods., Inc., 931 F.2d 327, 330 (5th Cir. 1991); New York v. Shore Realty Corp., 759 F.2d 1032, 1052 (2d Cir. 1985)). [Return to text.](#)

[78] *See* Constance S. Chandler & Rebecca J. Grosser, *An Issue Ripe for Supreme Court Review: Whether Congress Intended to Alter the Common Law Principles of Corporate Limited Liability When Enacting CERCLA*, 4 MO. ENVTL. L. & POL'Y. REV. 14, 24 (1996); Lynda J. Oswald, *Bifurcation of the Owner and Operator Analysis Under CERCLA: Finding Order in the Chaos of Pervasive Control*, 72 WASH. U. L. Q. 223, 260 (1994).[Return to text.](#)

[79] *See* Oswald, *supra* note 80, at 260.[Return to text.](#)

[80] *See* Brown, *supra* note 5, at 282-83.[Return to text.](#)

[81] *See* Stovall, *supra* note 11, at 249.[Return to text.](#)

[82] 79 F.3d 248 (2d Cir. 1996).[Return to text.](#)

[83] *See id.* at 253.[Return to text.](#)

[84] *See id.*[Return to text.](#)

[85] *See id.*[Return to text.](#)

[86] *See id.* (citing for example United States v. TIC Inv. Corp., 68 F.3d 1082, 1091 (8th Cir. 1995); Jacksonville Elec. Auth. v. Bernuth Corp., 996 F.2d 1107, 1110 (11th Cir. 1993); City of New York v. Exxon Corp., 112 B.R. 540, 547-48 (S.D.N.Y. 1990)).[Return to text.](#)

[87] *See id.* [Return to text.](#)

[88] *See id.* [Return to text.](#)

[89] *See id.* [Return to text.](#)

[90] *See id.* [Return to text.](#)

[91] *See id.* [Return to text.](#)

[92] *See id.* [Return to text.](#)

[93] *Id.* (quoting *Lansford-Coaldale Joint Water Auth. v. Tonolli Corp.*, 4 F.3d 1209, 1221 (3d Cir. 1993)) (emphasis added). [Return to text.](#)

[94] *See id.* at 254 n.5. [Return to text.](#)

[95] *See id.* [Return to text.](#)

[96] *See id.* at 284. [Return to text.](#)

[97] *See, e.g.,* *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1052 (2d Cir. 1985). [Return to text.](#)

[98] *See, e.g.,* *United States v. Nicolet, Inc.*, 712 F. Supp. 1193, 1201-02 (E.D. Pa. 1989); *United States v. Mottolo*, 695 F. Supp. 615, 624 (D.N.H. 1988). [Return to text.](#)

[99] *See id.* [Return to text.](#)

[100] *See id.* [Return to text.](#)

[101] 893 F.2d 80 (5th Cir. 1990). [Return to text.](#)

[102] *See id.* at 82. [Return to text.](#)

[103] *See id.* [Return to text.](#)

[104] *See id.* [Return to text.](#)

[105] 931 F.2d 327 (5th Cir. 1991). [Return to text.](#)

[106] *See id.* at 329. [Return to text.](#)

[107] *See id.* [Return to text.](#)

[108] *Id.* at 330. [Return to text.](#)

[109] *Id.* [Return to text.](#)

[110] *See id.* [Return to text.](#)

[111] *See id.* [Return to text.](#)

[112] 118 S.Ct. 1876 (1998). [Return to text.](#)

[113] 113 F.3d 572 (6th Cir. 1997) (explained *supra* Part II.B.2.). [Return to text.](#)

[114] *See* 118 S.Ct. at 1882. [Return to text.](#)

[115] *See id.* [Return to text.](#)

[116] CPC International, Inc. ("CPC") has since been renamed Bestfoods, Inc. *See id.* at 1882 n.3. It was referred to as CPC in the District Court, the Circuit Court, and the Supreme Court. I will also refer to it as CPC. [Return to text.](#)

[117] *See id.* [Return to text.](#)

[118] *See id.* [Return to text.](#)

[119] *See id.* [Return to text.](#)

[120] *See id.* [Return to text.](#)

[121] *See id.* [Return to text.](#)

[122] *See id.* [Return to text.](#)

[123] *See id.* [Return to text.](#)

[124] *See id.* [Return to text.](#)

[125] *See id.* [Return to text.](#)

[126] *See id.* [Return to text.](#)

[127] *See id.* [Return to text.](#)

[128] *See id.* [Return to text.](#)

[129] *See id.* [Return to text.](#)

[130] *See id.* [Return to text.](#)

[131] *See id.* [Return to text.](#)

[132] *See id.* [Return to text.](#)

[133] *See id.* [Return to text.](#)

[134] *See id.* at 1883. [Return to text.](#)

[135] *See id.* [Return to text.](#)

[136] 42 U.S.C. § 9607(a)(2) (1998). [Return to text.](#)

[137] *See* Bestfoods, 118 S.Ct at 1883. [Return to text.](#)

[138] *See id.* [Return to text.](#)

[139] *See id.* [Return to text.](#)

[140] *See id.* [Return to text.](#)

[141] *See* CPC Int'l, Inc. v. Aerojet-General Corp., 777 F. Supp 549, 572 (W.D. Mich. 1991). [Return to text.](#)

[142] *See id.* [Return to text.](#)

[143] *Id.* at 573. [Return to text.](#)

[144] *Id.* The court stated that when applying a common law principle such as the vicarious liability of parent corporations the Sixth Circuit applies state law rules. *See id.* [Return to text.](#)

[145] *Id.* [Return to text.](#)

[146] *See id.* The court listed the following factors to consider when determining the issue of whether the parent operated its subsidiary: (1) "parent's participation in the subsidiary's board of directors, management, day-to-day operations, and specific policy matters, including manufacturing, finances, personnel and waste disposal" and (2) "origin and business function of the subsidiary in the context of the parent corporation's business . . ." *Id.* [Return to text.](#)

[147] *See id.* [Return to text.](#)

[148] *See id.* [Return to text.](#)

[149] *See id.* [Return to text.](#)

[150] *See id.* at 575. [Return to text.](#)

[151] *See id.* at 574. [Return to text.](#)

[152] *See* United States v. Cordova Chem. Co. of Mich., 113 F.3d 572, 580 (6th Cir. 1997), *vacated and remanded sub nom.* United States v. Bestfoods et al., 118 S. Ct. 1876 (1998). [Return to text.](#)

[153] *See id.* at 579. [Return to text.](#)

[154] *See id.* at 580. [Return to text.](#)

[155] *See id.* [Return to text.](#)

[156] *See id.* [Return to text.](#)

[157] *See id.* [Return to text.](#)

[158] *See id.* [Return to text.](#)

[159] *See id.* [Return to text.](#)

[160] *See id.* [Return to text.](#)

[161] *See id.* at 583. The district court's opinion on direct liability is explained supra part III.B. [Return to text.](#)

[162] *See id.* at 584. [Return to text.](#)

[163] *See id.* [Return to text.](#)

[164] *See* Lansford-Coaldale Joint Water Authority v. Tonnolli Corp., 4 F.3d 1209, 1225 (3d Cir. 1993) (citing United States v. Kimbell Foods, Inc., 440 U.S. 715, 726 (1979)); *In re* Acushnet River & New Bedford Harbor Proceedings, 675 F. Supp. 22, 30-31 (D.Mass. 1987) (applying federal common law to owner/operator liability under CERCLA); *see generally* Evelyn F. Heidelberg, *Comment, Parent Corporation Liability Under CERCLA: Toward a Uniform Federal Rule Decision*, 22 PAC. L. J. 854 (1991). [Return to text.](#)

[165] *See* United States v. Cordova Chem. Co., 113 F.3d 572, 584 (6th Cir. 1997) (citing United States v. Kimbell Foods, Inc., 440 U.S. 715, 726 (1979)). [Return to text.](#)

[166] 440 U.S. 715 (1979). [Return to text.](#)

[167] *See id.* at 728 (citing United States v. Yazell, 382 U.S. 341, 354 (1966)). [Return to text.](#)

[168] *See id.* at 728. [Return to text.](#)

[169] *See id.* [Return to text.](#)

[170] *See id.* at 729. [Return to text.](#)

[171] *United States v. Cordova Chem. Co.*, 113 F.3d 572, 584 (6th Cir. 1997) (quoting *In re Acushnet & New Bedford Harbor Proceedings re Alleged PCB Pollution*, 675 F. Supp. 22, 31 (D. Mass. 1987)). [Return to text.](#)

[172] *See id.* [Return to text.](#)

[173] *See id.* (citing Henry Hansmann & Reiner Kraakman, *A Procedural Focus on Unlimited Shareholder Liability*, 106 HARV. L. REV. 446, 450-53 (1992) (arguing that choice of law concerns do not bar unlimited shareholder liability in tort actions); Note, *Piercing the Corporate Veil: The Alter Ego Doctrine Under Federal Common Law*, 95 HARV. L. REV. 853, 862-63 (1982) (arguing that piercing the corporate veil relates to external affairs and should be governed by the law of the forum)). [Return to text.](#)

[174] *See, e.g.*, *Lansford-Coaldale Water Authority v. Tonolli Corp.*, 4 F.3d 1209, 1225 (3d Cir. 1993) (the only other circuit court opinion applying federal common law); *Joslyn Manufacturing Co. v. T.L. James & Co.*, 893 F.2d 80 (5th Cir. 1990) (affirming a district court opinion that declined to address the choice of law question on the grounds that the standard for piercing the corporate veil are the same under state and federal law). [Return to text.](#)

[175] *See Cordova Chem. Co.*, 113 F.3d at 585. (citing numerous district court opinions that have applied federal common law in this context). For additional support Judge Merritt then cites other circuits that have applied federal common law in cases involving successor corporation liability under CERCLA. *See id.* [Return to text.](#)

[176] *See id.* [Return to text.](#)

[177] *Id.* at 585-86 (quoting *Krivo Indus. Supply Co. v. National Distillers & Chem. Corp.*, 483 F.2d 1098, 1103 (5th Cir. 1973)). [Return to text.](#)

[178] *See id.* [Return to text.](#)

[179] *See id.* [Return to text.](#)

[180] *See id.* [Return to text.](#)

[181] *See id.* [Return to text.](#)

[182] *Id.* (quoting *United States v. Nicolet, Inc.*, 712 F. Supp. 1193, 1202 (E.D. Pa. 1989)). [Return to text.](#)

[183] *See id.* The twelve-factor test examines a laundry list of factors that include whether: (1) the parent and the subsidiary have common stock ownership; (2) the parent and the subsidiary have common directors or officers; (3) the parent and the subsidiary have common business departments; (4) the parent and the subsidiary file consolidated financial statements and tax returns; (5) the parent finances the subsidiary; (6) the parent caused the incorporation of the subsidiary; (7) the subsidiary operates with grossly inadequate capital; (8) the parent pays the salaries and other expenses of the subsidiary; (9) the subsidiary receives no business except that given to it by its parent; (10) the parent uses the subsidiary's property as its own; (11) the daily operations of the two corporations are not kept separate; and (12) the subsidiary does not observe the basic corporate formalities, such as keeping separate books and records and holding shareholder and board meetings. *See id.* (citing *United States v. Jon-T Chems., Inc.*, 768 F.2d 686, 691-92 (5th Cir. 1985); *Jacksonville Elec. Auth. v. Eppinger and Russell Co.*, 776 F. Supp. 1542, 1545 (M.D. Fla. 1991), *aff'd on other grounds sub nom. Jacksonville Elec. Auth. v. Bernuth Corp.*, 996 F.2d 1107 (11th Cir. 1993); *Joslyn Corp. v. T.L. James & Co.*, 696 F. Supp. 222, 227 (W.D. La. 1988), *aff'd.*, 893 F.2d 80 (5th Cir. 1990)). [Return to text.](#)

[184] *See id.* The seven-factor test examines in approximate descending order of importance: (1) inadequate capitalization in light of the purposes for which the corporation was organized; (2) extensive or pervasive control by the shareholder or shareholders; (3) intermingling of the corporation's properties or accounts with those of its owner; (4) failure to observe corporate formalities and separateness; (5) siphoning of funds from the corporation; (6) absence of corporate records; and (7) nonfunctioning officers or directors. *See id.* (citing *In re Acushnet River & New Bedford Harbor Proceedings re Alleged PCB Pollution*, 675 F. Supp. 22, 33 (D. Mass. 1987); *Idylwoods Assocs. v. Mader Capital, Inc.*, 915 F. Supp. 1290, 1305 (W.D. N.Y. 1996); *City of New York v. Exxon Corp.*, 112 B.R. 540, 553 (S.D.N.Y. 1990), *aff'd on other grounds*, 932 F.2d 1020 (2d Cir. 1991); *United States v. Kayser-Roth Corp.*, 724 F. Supp. 15, 20 (D.R.I. 1989), *aff'd on other grounds*, 910 F.2d 24 (1st Cir. 1990)). [Return to text.](#)

[185] *See id.* [Return to text.](#)

[186] *See id.* [Return to text.](#)

[187] *See United States v. CPC Int'l, Inc.*, 118 S.Ct. 621 (1997). [Return to text.](#)

[188] *See United States v. Bestfoods*, 118 S.Ct. 1876, 1884 (1998). [Return to text.](#)

[189] *See id.* at 1885.[Return to text.](#)

[190] *See id.*[Return to text.](#)

[191] *See id.* at 1885-86.[Return to text.](#)

[192] *See id.* at 1886 n.9.[Return to text.](#)

[193] *See id.* at 1886.[Return to text.](#)

[194] *See id.* at 1886 n.10.[Return to text.](#)

[195] *See id.*[Return to text.](#)

[196] *See id.*[Return to text.](#)

[197] *See id.*[Return to text.](#)

[198] *See id.*[Return to text.](#)

[199] *See id.*[Return to text.](#)

[200] *See id.*[Return to text.](#)

[201] *See id.*[Return to text.](#)

[202] *Id.*[Return to text.](#)

[203] *See id.*[Return to text.](#)

[204] *See id.*[Return to text.](#)

[205] *See id.* at 1887.[Return to text.](#)

[206] *Id.*[Return to text.](#)

[207] *See id.*[Return to text.](#)

[208] *See id.*[Return to text.](#)

[209] *See id.*[Return to text.](#)

[210] *See id.*[Return to text.](#)

[211] *Id.*[Return to text.](#)

[212] *See id.* at 1888.[Return to text.](#)

[213] *See id.*[Return to text.](#)

[214] *See id.*[Return to text.](#)

[215] *See id.*[Return to text.](#)

[216] *Id.* at 1889.[Return to text.](#)

[217] *See id.*[Return to text.](#)

[218] *See id.*[Return to text.](#)

[219] *See id.* [Return to text.](#)

[220] *See id.* [Return to text.](#)

[221] *See id.* [Return to text.](#)

[222] *See id.* [Return to text.](#)

[223] *See id.* [Return to text.](#)

[224] *See id.* [Return to text.](#)

[225] *See id.* [Return to text.](#)

[226] *Id.* [Return to text.](#)

[227] *See id.* [Return to text.](#)

[228] *See id.* [Return to text.](#)

[229] *Id.* [Return to text.](#)

[230] *Id.* (quoting Oswald, *supra* note 80 at 282). [Return to text.](#)

[231] *See id.* [Return to text.](#)

[232] *See id.* at 1890. [Return to text.](#)

[233] *See id.* [Return to text.](#)

[234] *Id.* (quoting CPC Int'l, Inc. v. Aerojet-General Corp., 777 F. Supp. 573, 575 (W.D. Mich. 1991)). [Return to text.](#)

[235] *See id.* [Return to text.](#)

[236] *See id.* [Return to text.](#)

[237] *See id.* [Return to text.](#)

[238] *See* United States v. Bestfoods, 118 S.Ct. 1876, 1885 (1998). [Return to text.](#)

[239] *Id.* (quoting United States v. Texas, 507 U.S. 529, 534 (1993)). [Return to text.](#)

[240] *See id.* at 1886 n.9. [Return to text.](#)

[241] *See id.* [Return to text.](#)

[242] Courts have generally applied the state veil-piercing law where the subsidiary corporation is incorporated. [Return to text.](#)

[243] *See* 113 F.3d 572, 583-86 (6th Cir. 1997) (explained *supra* Part II.B.2.b.). [Return to text.](#)

[244] 126 Cong. Rec. 31,965 (1980) (statement of Rep. Florio); *see* Stovall, *supra* note 12, at 270-71. [Return to text.](#)

[245] 440 U.S. 715 (1979). [Return to text.](#)

[246] For an explanation of how *Kimbell Foods* supports this proposition see *supra* Part II.B.2.b. [Return to text.](#)

[247] 487 U.S. 500 (1988). [Return to text.](#)

[248] *See id.* at 507 (citing Wallis v. Pan Am. Petroleum Corp., 384 U.S. 63, 68 (1966)). [Return to text.](#)

[249] *See supra* Part III.B., at 35 (providing the Court's specific definition of "operate").[Return to text.](#)

[250] *See, e.g.*, *United States v. Kayser-Roth Corp., Inc.*, 910 F.2d 24, 27 (1st Cir. 1990).[Return to text.](#)

[251] *See, e.g.*, *Lansford-Coaldale Joint Water Auth. v. Tonolli Corp.*, 4 F.3d 1209, 1221(3d Cir. 1993); *Jacksonville Elec. Auth. v. Bernuth Corp.*, 996 F.2d 1107, 1110 (11th Cir. 1993).[Return to text.](#)

[252] *See* 42 U.S.C. § 9607(a) (1996).[Return to text.](#)

# ADDITION BY REMOVAL? NATIONAL MINING LIMITS SECTION 404 CONTROL OF CONSTRUCTION IN WETLANDS

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## I. INTRODUCTION

The recent decision of the District of Columbia Court of Appeals in *National Mining Association v. United States Army Corps of Engineers*<sup>[1]</sup> cannot encourage those who look to the courts to protect wetlands. <sup>[2]</sup> *National Mining* held that the Tulloch Rule, <sup>[3]</sup> which embodied the hopes of environmentalists that all wetland construction could be regulated, was invalid on its face. This holding leaves little doubt that the main federal statute governing wetlands, section 404<sup>[4]</sup> of the Clean Water Act (CWA),<sup>[5]</sup> cannot fully control their development.

Section 404, as the CWA provision which regulates the disposal of dredged and fill material, was the authority for the Tulloch Rule. The rule arose out of opposition to a large North Carolina residential project, built during the late 1980's on a type of wetland with particular environmental value.<sup>[6]</sup> This development raised the question whether section 404 covers small redeposits of soil caused by excavation using machines like backhoes, dredges, and bulldozers. These redeposits, termed "incidental fallback," are the result of minor spillage from the bucket of the machine. <sup>[7]</sup> The fallback occurs as excavated material falls back onto the wetland near the place where it was removed. The redeposits have no purpose but are simply *incidental* to the activity with which they are associated.

Before the Tulloch Rule, regulation of wetlands under section 404 did not reach construction which produced only de minimis amounts of incidental fallback.<sup>[8]</sup> This section covers the deposit of material in wetlands, but not its mere removal by excavation. Developers like the one responsible for the North Carolina project had successfully used a strategy which exploited this gap. By digging ditches, channels, or retention ponds and taking care that almost none of the excavated material was redeposited, they could drain the wetland parts of a site without a federal permit.<sup>[9]</sup> This exacting process paid off by making further construction much easier, not only in terms of engineering, but also under the law. Once drained, the land could be developed using ordinary methods.<sup>[10]</sup> In this way, large areas of wetland were converted into development projects without the need for a section 404 permit.

The purpose of the Tulloch Rule was to close off this means of avoiding section 404 regulation.<sup>[11]</sup> Environmental groups had long been concerned by what they considered the habitual reluctance of the U.S. Army Corps of Engineers ("Corps") to protect wetlands aggressively.<sup>[12]</sup> One of these groups sued the Corps in *North Carolina Wildlife Federation v. Tulloch*.<sup>[13]</sup> This suit challenged the Corps' authority to issue a permit for the North Carolina project. The Corps and the EPA, co-administrators of section 404 from the beginning,<sup>[14]</sup> decided to settle the suit by agreeing to regulations to prevent similar development. They adopted the Tulloch Rule in 1993 as a result of this settlement agreement.<sup>[15]</sup>

The effect of the Tulloch Rule was to require a permit for almost all mechanized landclearing and excavation of the type needed to develop wetland sites.<sup>[16]</sup> The rule achieved this result by extending Section 404 to reach "any addition, including any redeposit" of material, even in de minimis amounts.<sup>[17]</sup> The existence of an "addition" is a necessary condition for section 404 jurisdiction.<sup>[18]</sup> If the addition comes from a "point source,"<sup>[19]</sup> consists of a "pollutant,"<sup>[20]</sup> and takes place in a "water of the United States,"<sup>[21]</sup> it is also a "discharge"<sup>[22]</sup> within the meaning of the CWA.

This article has three main parts. Because the statutory authority for the Tulloch Rule is the central issue in *National Mining*, Part Two reviews the basic features of the CWA and the context in which it operates. Part Three considers the most significant arguments for the Tulloch Rule presented in the case and analyzes the reasoning the court followed in rejecting them. Part Four analyzes how the Tulloch Rule operated, in order to explain how its purpose and design contributed to making it invalid. A conclusion follows.

## II. THE ROLE OF SECTION 404 OF THE CLEAN WATER ACT OF 1972

### A. Legislative History

Responding to a growing public demand for greater environmental protection, Congress in 1972 extensively amended the Federal Water Pollution Control Act<sup>[23]</sup> to create a comprehensive program to control water pollution. The objective of this amended statute, now commonly termed the Clean Water Act,<sup>[24]</sup> was "to restore and maintain the chemical, biological, and physical integrity of the Nation's waters."<sup>[25]</sup> As the central means to achieve this objective, the CWA established a National Pollution Discharge Elimination System (NPDES).<sup>[26]</sup> The recently-created EPA was to administer the NPDES, with authority to control the discharge of pollutants from point sources into U.S. waters.<sup>[27]</sup>

Congress was hesitant, however, to subject the huge volumes of material<sup>[28]</sup> dredged from major shipping channels to the NPDES.<sup>[29]</sup> Some members argued that overly exacting regulation of dredged material, especially if administered by the EPA with its limited resources, might interfere with the country's commerce.<sup>[30]</sup> Some were also concerned that EPA's regulation under the NPDES would infringe the Corps' existing regulation under section 10 of the Rivers and Harbors Act of 1899 (RHA).<sup>[31]</sup> Responding to these concerns, Congress created section 404 as an exception to the NPDES.<sup>[32]</sup> It hoped to make open-water disposal of dredged material as environmentally benign as possible without unduly disrupting the country's commerce<sup>[33]</sup> until some better method could be found.<sup>[34]</sup> This section accomplished this goal by confining disposal to certain locations.<sup>[35]</sup> This compromise also resulted in dual administration of section 404. The Corps, with its longtime experience in dredging, was to take the lead in issuing permits for the disposal of dredged material.<sup>[36]</sup> The EPA was ostensibly to support this effort by issuing guidelines for disposal.<sup>[37]</sup> However, its inclusion also reflected the concern of some in Congress that the Corps' environmental stewardship should be monitored.<sup>[38]</sup>

### B. Permit Criteria

The chief provisions of section 404 divide permit authority between the Corps and the EPA. Subsection 404(a) authorizes the Corps, consulting with the EPA, to issue permits specifying disposal sites "for the discharge of dredged or fill material into the navigable waters."<sup>[39]</sup> Where an activity causes a discharge of this material and thus invokes section 404, the Corps uses a public interest test to decide whether to issue a permit. Under this test, the Corps considers the public need for the proposed activity as well as the applicant's need for it.<sup>[40]</sup> It also estimates how strong and how permanent the activity's positive and negative effects are likely to be.<sup>[41]</sup> In particular, the Corps determines whether there are practical alternatives to the proposal.<sup>[42]</sup> If these exist, are in other respects environmentally benign, and would damage the aquatic environment less, it must ordinarily deny the permit.<sup>[43]</sup> When it considers whether alternatives are available, the Corps looks to the time when the applicant first entered the market for land for the proposed project.<sup>[44]</sup>

The Corps must determine whether a permit for a proposed activity is in the public interest according to the guidelines EPA adopts.<sup>[45]</sup> Subsection 404(a) requires the Corps' permitting authority to comply with the provisions of subsection 404(b).<sup>[46]</sup> Section 404(b)(1) directs the EPA, together with the Corps, to develop guidelines for designating disposal sites.<sup>[47]</sup> The EPA must base these guidelines on criteria similar to those which CWA section 403(c) applies to ocean discharges.<sup>[48]</sup>

### C. Basis for Jurisdiction

The agencies' jurisdiction under the CWA derives from Congress' power to regulate interstate commerce under the Commerce Clause of the U.S. Constitution.<sup>[49]</sup> Although the CWA defines jurisdiction under section 404 broadly as the "waters of the United States,"<sup>[50]</sup> it does not directly address wetlands. The agencies at first interpreted their physical jurisdiction narrowly,<sup>[51]</sup> but court decisions expanded it. In 1974, several federal courts<sup>[52]</sup> construed federal jurisdiction to extend landward from the usual boundary between waters which are literally navigable and wetlands.<sup>[53]</sup> Under this construction, the agencies' section 404 jurisdiction reached waters which are not navigable by traditional standards. The Corps, however, for some time declined to change its regulations to reflect these decisions.<sup>[54]</sup>

This resistance of broader jurisdiction gave rise to a citizen suit in *National Resources Defense Council v. Callaway*.<sup>[55]</sup> *Callaway* required the Corps to publish regulations applying section 404 to "the waters of the United States," even if not literally navigable. By invalidating regulations which had effectively placed about one-half the

country's wetlands outside the agencies' jurisdiction,<sup>[56]</sup> this decision greatly enlarged the area which the Corps must regulate.<sup>[57]</sup> By 1985, when the Supreme Court decided *United States v. Riverside Bayview Homes*,<sup>[58]</sup> the Corps was not resisting broader jurisdiction in the regulation at issue in that case. This regulation included wetlands which, although adjacent to navigable waterways, had no overt hydrologic connection to them. Noting that Congress meant the CWA to achieve the fullest possible protection of U.S. waters, the Court held that section 404 could reach land which was not flooded or permeated by water from an adjacent navigable body.<sup>[59]</sup> *Riverside Bayview Homes* establishes beyond doubt that section 404 covers wetlands as well as waters which are literally navigable.<sup>[60]</sup>

#### D. *The Rivers and Harbors Appropriations Act of 1899*

A conflict between section 404 of the CWA and the RHA<sup>[61]</sup> over dredging provides another important background issue in *National Mining*. When it assigned the disposal of dredged material to section 404, Congress nevertheless left control over dredging itself under the RHA.<sup>[62]</sup> The RHA governs dredging activities but does not reach wetlands; the CWA governs wetlands but does not reach dredging activities.<sup>[63]</sup> *The National Mining* court held that the Tulloch Rule was an unauthorized attempt to govern dredging activities in wetlands, in effect using the CWA's authority to import the lacking jurisdiction from the RHA.<sup>[64]</sup> Therefore, although the RHA was not directly at issue in *National Mining*, a full understanding of the case calls for some consideration of it.

In the RHA, Congress authorized the Corps to protect the navigability of the country's waterways.<sup>[65]</sup> Two sections of the RHA have been especially important in this effort. Section 10 authorizes the Corps to regulate structures and "work" which might affect navigation.<sup>[66]</sup> A major part of this work, much of which is done on a very large scale, consists of dredging in areas of heavy ship traffic.<sup>[67]</sup> The Corps either commissions this dredging or performs it itself. Section 13, commonly termed the "Refuse Act," reduces the hazard to shipping from waterborne debris by requiring a permit to deposit most refuse into navigable waters.<sup>[68]</sup>

During the RHA's first sixty years, courts viewed the Corps' responsibilities under the Act in terms of navigation only.<sup>[69]</sup> The Fish and Wildlife Coordination Act (FWCA), however, as amended in 1970,<sup>[70]</sup> obligated federal agencies to determine in advance the effects of their projects on fish and wildlife.<sup>[71]</sup> This development seemed to require the Corps to assess these effects before issuing a dredge and fill permit under section 10 of the RHA. An important decision of the Fifth Circuit in *Zabel v. Tabb*<sup>[72]</sup> upheld the Corps' authority to deny these permits solely on environmental grounds.<sup>[73]</sup>

As late as the 1960's, the Corps continued to regard the purpose of section 13 as assuring safe and efficient navigation.<sup>[74]</sup> Federal prosecutors, however, began about 1960 to use section 13 successfully against industrial water polluters.<sup>[75]</sup> Its success in this newer environmental application persuaded President Nixon to make the Refuse Act the basis of a more general program. He set this out in a 1970 executive order which directed the Corps to use permits to control water pollution.<sup>[76]</sup> Before long, however, the District Court for the District of Columbia invalidated this plan by ruling that section 13 provided no statutory authority for the program.<sup>[77]</sup> This result both limited the environmental role of the RHA<sup>[78]</sup> and made clear that a national campaign against water pollution must rest on a firmer legal foundation. The CWA became this foundation.<sup>[79]</sup>

### III. THE HOLDING IN *NATIONAL MINING*

#### A. *Incidental Fallback and the "Addition" Problem*

At least after publishing new regulations in 1986, the Corps had avoided the overextension of the CWA which was fatal to the Tulloch Rule by exempting de minimis amounts of incidental fallback from section 404 coverage.<sup>[80]</sup> By assuring that CWA regulation of a discharge did not directly reach the activity which generated it, this exemption prevented infringement on RHA jurisdiction.<sup>[81]</sup> The agencies' acknowledgment that excavation without incidental fallback was practically impossible<sup>[82]</sup> made a de minimis exemption all the more necessary. Without it, the Corps would be openly admitting that in practice, it was reaching an act of excavation every time it regulated the fallback incidental to that act under section 404.<sup>[83]</sup> If the RHA alone governs acts of excavation, however, the CWA could not authorize any regulation so extensive.<sup>[84]</sup>

The development challenged in *Tulloch* converted about 700 acres of a unique type of coastal wetland called *pocosin*

into housing.<sup>[85]</sup> It furnished a harsh demonstration that the Corps' policy against regulating incidental fallback hindered its ability to prevent the loss of environmentally valuable wetlands. The landowner had been careful to consult with the Corps' district office at every stage of the project, and each time it could find no grounds for requiring a section 404 permit.<sup>[86]</sup> However disconcerting to environmental groups the Corps' acquiescence was, it was consistent with the agencies' position that Congress did not intend the CWA to govern excavation activities. In the *Tulloch* settlement, however, the Corps agreed to propose a rule whose validity rested on just that interpretation.<sup>[87]</sup>

In the District Court for the District of Columbia, opponents of the Tulloch Rule brought a facial challenge that it was inconsistent with the language and intent of the CWA and therefore exceeded the Corps' section 404 jurisdiction.<sup>[88]</sup> In *National Mining*, the plaintiffs' main claim was that the Corps' interpretation of incidental fallback as an "addition" violated the unambiguous terms of the CWA.<sup>[89]</sup> The Corps in return offered its main counterargument,<sup>[90]</sup> which relied on two undisputed facts. The first was that the CWA defines "dredged material" as wetland soil, sediment, debris, or other material excavated from United States waters.<sup>[91]</sup> The second was that the CWA includes "dredged spoil," as well as rock, sand, and "cellar dirt," in its definition of "pollutant."<sup>[92]</sup> The argument concluded from these definitions that dredged material undergoes a legal metamorphosis into a pollutant at the moment of excavation.<sup>[93]</sup> Therefore, the redeposit of part of this material as incidental fallback is the addition of a pollutant from a point source to a water of the United States—a discharge. As a discharge, the Corps argued, the fallback was regulable under section 404.

The court rejected this argument, holding that incidental fallback resulting from a net withdrawal of dredged material cannot reasonably be considered an addition.<sup>[94]</sup> Therefore it is irrelevant whether any legal metamorphosis into a pollutant takes place.<sup>[95]</sup> No addition of a pollutant material can occur when there simply is no addition of material.<sup>[96]</sup> The court seemed to give great weight to the large proportion of removed to redeposited material which characterizes incidental fallback. In a statement that went to the heart of the decision, it said that "Congress could not have contemplated that the attempted removal of 100 tons of [dredged spoil] could constitute an addition simply because only 99 tons of it were actually taken away."<sup>[97]</sup> The court then emphasized that the RHA governs the removal of material from United States waters.<sup>[98]</sup> It concluded that the agencies could not reach this activity simply by declaring in a CWA regulation that incomplete removal constitutes addition.<sup>[99]</sup>

In coming to its decision, the District of Columbia Circuit had to resolve the underlying question of how to define an "addition."<sup>[100]</sup> The National Wildlife Federation, which defended the rule, argued that to interpret "addition" as the plaintiffs urged would read regulation of dredged material out of Section 404.<sup>[101]</sup> The court agreed that, because dredged material comes from United States waters,<sup>[102]</sup> this would indeed be the result of requiring that a pollutant come from outside a wetland to constitute an "addition."<sup>[103]</sup> It also acknowledged that the discharge of dredged material back into a water could broadly be construed as a "redeposit."<sup>[104]</sup> Nevertheless, the court said, it was not holding the Corps could not regulate *some* redeposits under section 404.<sup>[105]</sup> Rather, it was holding only that the Tulloch Rule's assertion of jurisdiction over incidental fallback exceeded the Corps' statutory authority.<sup>[106]</sup> The court observed that, because the CWA draws no "bright line" between a regulable redeposit and incidental fallback, a "reasoned attempt" to differentiate the two "would merit considerable deference."<sup>[107]</sup> However, it found that the purpose of the Tulloch Rule was to expand the Corps' authority to include a range of activities which "cannot remotely be said to 'add' anything" to U.S. waters.<sup>[108]</sup>

Judge Silberman's concurring opinion raised several interesting issues. He began by explaining the standard of review the court had implicitly used in characterizing the Tulloch Rule's interpretation of incidental fallback as "unreasonable." He believed the court had concluded that neither section 404's plain language nor its legislative history revealed Congress' precise intent on this question, and that it was therefore evaluating the rule under Step II of the *Chevron* test.<sup>[109]</sup> This second step of the *Chevron* test makes reasonableness the criterion by which courts assess the validity of administrative agencies' statutory interpretations.<sup>[110]</sup> Judge Silberman reiterated the majority's view that to apply the word "addition" to dredged material connotes that it was either moved some distance away and then dropped, or held for some time before being dropped back in the same place.<sup>[111]</sup> He then identified two ways in which the Tulloch Rule failed as a reasonable interpretation of the meaning Congress intended for an "addition" under the CWA.

First, because incidental fallback is inevitable in dredging, the Tulloch Rule's treatment of it as an "addition" converts all dredging into the discharge of dredged material.<sup>[112]</sup> A comparison of the CWA with the RHA, however, indicates that it is not reasonable to do this.<sup>[113]</sup> Second, Section 404 authorizes the Corps to issue permits for discharges at

"specified disposal sites."[\[114\]](#) This construction suggests that Congress meant for the material to be discharged at some distance from the place where the dredging occurred, and after some time.[\[115\]](#) This meaning, however, simply does not fit incidental fallback, which is immediate and occurs close to the point of dredging.[\[116\]](#)

Judge Silberman observed finally that the Corps tried to avoid these problems with its "metamorphosis" argument, in which he found a logical problem. The argument construed the CWA to make incidental fallback a discharge, because the excavated material became a pollutant when it was dredged and an addition when redeposited.[\[117\]](#) The concurring opinion noted that this argument begs the question of what constitutes a "discharge," because rock and sand only become "pollutants" under the CWA once they are "discharged into water."[\[118\]](#) Under the "metamorphosis" argument for the Tulloch Rule, however, incidental fallback of rock or sand becomes a "discharge" only because that material had already become a pollutant *before* its addition to the water.

### *B. Incidental Fallback in Case Law*

The Corps also attempted to defend the Tulloch Rule by relying on case law. *National Mining* addresses several of these cases decided before the rule was published. The case law argument drew in part on the Fifth Circuit's statement in *Avoyelles Sportsmen's League, Inc. v. Marsh*[\[119\]](#) that "the word 'addition,' as used in the definition of the term 'discharge,' may reasonably be understood to include 'redeposit.'"[\[120\]](#) *The National Mining* court, however, found that this statement did not address incidental fallback.[\[121\]](#) *Avoyelles* concerned the displacement of large amounts of soil during the conversion of a wetland site to soybean fields. In this construction, trees were uprooted, pushed into windrows together with the soil they dragged along, and set afire. The partly burned material was then either buried or disked into the soil.[\[122\]](#) The basis for the *Avoyelles* decision was the court's finding that a discharge of fill material[\[123\]](#) had occurred.[\[124\]](#)

The argument from case law also cited *United States v. MCC of Florida*,[\[125\]](#) but the *National Mining* court questioned the decision's relevance to incidental fallback.[\[126\]](#) In *MCC*, a construction firm used a tugboat to transport building materials to a site. The boat made many passages through a shallow channel in the course of this work, and its propeller wash excavated bottom sediment and cast it to the side. This sediment settled onto and gradually destroyed adjacent beds of sea grass. The Eleventh Circuit held that this deposit was a regulable discharge of dredged spoil.[\[127\]](#) As in *Avoyelles*, however, both the amount of the material redistributed and its direct effect were far greater than what occurs with incidental fallback. The deposit was sufficient to smother plants that had, until then, been able to survive all naturally-induced shifting of bottom sediments. The *National Mining* court observed that the redeposit in *MCC* was in any event less analogous to incidental fallback than to sidestepping.[\[128\]](#) Sidestepping usually occurs during trenching, as the excavating machine deposits a row of dirt alongside the trench and a few feet to the side of it.[\[129\]](#) This material is then easily collected and hauled away.

The District of Columbia Circuit stated that *Rybachek v. EPA*[\[130\]](#) may have been the strongest case supporting the Tulloch Rule.[\[131\]](#) The defendants in *Rybachek*, while conducting placer mining, had excavated soil and gravel from a streambed in order to extract gold. After this was done, they discharged the leftover material back into the water. The Ninth Circuit held that the material discharged was a pollutant, and that to the extent it originally came from the streambed, its "resuspension" could be interpreted as the addition of a pollutant under the CWA.[\[132\]](#) *The National Mining* court observed that if the Ninth Circuit had held instead that extraction of the gold accompanied by incidental fallback was the addition of a pollutant, *Rybachek* would have helped the agencies.[\[133\]](#) However, the *Rybachek* court regarded the reinjection of the processed material as a discrete act which took place, not in the course of extracting the gold, but after it had been completed.[\[134\]](#)

## IV. HOW THE TULLOCH RULE DEVELOPED

### *A. The de Minimis Exemption of Incidental Fallback*

This section will explain how the Tulloch Rule altered previous regulation to extend jurisdiction under section 404. The rule had the difficult task of extending section 404 to excavation activities on wetlands while purporting to regulate only their discharges.[\[135\]](#) The solution to this problem of statutory jurisdiction relied primarily on recasting the de minimis exemption of incidental fallback. The Tulloch Rule preserved this exemption in form while making it nearly impossible to achieve in fact.[\[136\]](#) The de minimis exemption remained useful to the agencies, if not to applicants,

because its asserted that incidental fallback was not regulable in every case. Its preservation therefore allowed the agencies a colorable claim that the rule did not categorically regulate wetland excavation.

In the commentary accompanying the Tulloch Rule, the agencies also observed that the de minimis exemption for fallback relieved them of the need to make a finding of fact that there could be no excavation without a discharge.<sup>[137]</sup> However remote the possibility of an excavation activity which would produce no fallback, they did not have to find that such an activity was literally impossible. The agencies stated that excavation without incidental fallback was "virtually impossible,"<sup>[138]</sup> but now they asserted that some advanced excavation technique might conceivably produce discharges so small as to be exempt.<sup>[139]</sup> However, the Tulloch Rule offered no means by which a proponent of any sort of construction might reasonably estimate whether its incidental discharges would be regulable.

Two characteristics in particular of the Tulloch Rule's de minimis exemption tended to reduce it to an artifice. First, although the previous basis for such exemption of a discharge had been its physical magnitude,<sup>[140]</sup> the rule now cast the exemption in terms of environmental effect.<sup>[141]</sup> The Tulloch Rule reached any discharge that the agencies had concluded would "degrade" any quality of the affected water.<sup>[142]</sup> While not quantifying the magnitude of this threshold, the agencies emphasized that it would be "very low."<sup>[143]</sup> Second, the Tulloch Rule placed on the proponent of an activity the burden of demonstrating that its incidental discharges would have only "inconsequential" adverse effects.<sup>[144]</sup>

#### *B. The Section 404 "Recapture Clause" and Regulation by Effect*

The agencies found another method for achieving the Tulloch Rule's purpose in an unlikely place: a subsection of 404 addressing agriculture, timbering, mining, and ranching. The enlargement of the Corps' jurisdiction after the *Callaway* decision created the problem that these activities increasingly entailed discharge permits.<sup>[145]</sup> Land left fallow, for example, might begin to revert to wetland, or a temporary logging road might affect runoff to wetlands. Subsection 404(f), an important feature of the 1977 Amendments to the CWA, was Congress' solution of this problem.<sup>[146]</sup> The purpose of the subsection is to protect established farming, silviculture, mining, and ranching operations from overly intrusive regulation.<sup>[147]</sup> Section 404(f)(1) exempts discharges associated with listed activities from the permit requirement.<sup>[148]</sup> Section 404(f)(2), the "recapture clause," serves as a check on section 404(f)(1) by reinstating the requirement for discharges with certain excessively harmful effects.<sup>[149]</sup> The most important cases interpreting subsection 404(f) address the operation of the recapture clause in reaching once-exempt agricultural activities that had somehow changed since their initial exemption.<sup>[150]</sup>

The approach of the Tulloch Rule is quite similar to that of a plan which had been suggested in two law review articles.<sup>[151]</sup> These articles urged a broad interpretation of section 404(f)(2), which has generally been thought of merely as a vehicle to recapture otherwise exempt activities listed in section 404(f)(1).<sup>[152]</sup> This new reading would allow the agencies to reach activities other than those in section 404(f)(1), rather than exempting the discharges from them as de minimis.<sup>[153]</sup> In the proposed scheme, the clause would now operate together with a de minimis exemption to allow the capture of activities formerly outside section 404 jurisdiction.<sup>[154]</sup> This novel application of section 404(f)(2) would bring an activity within the ambit of section 404 whenever its incidental discharge had the ultimate effect of changing the use of a wetland.<sup>[155]</sup> It is not clear whether the design of the Tulloch Rule derived from this proposal. To the extent that the rule reflected the proposal's scheme, however, it relied on a statutory interpretation that the weight of authority does not support.<sup>[156]</sup>

## V. CONCLUSION

As of this writing, the District of Columbia Circuit had denied the agencies a rehearing,<sup>[157]</sup> but they had not decided whether to appeal the *National Mining* decision to the U.S. Supreme Court.<sup>[158]</sup> The inventive nature of the defenses which the appellants presented,<sup>[159]</sup> however, reflects the weakness of the Tulloch Rule's foundation in law. In only one case does a decision squarely support the proposition that incidental fallback is a regulable discharge.<sup>[160]</sup> Even there, the district court specifically limited its holding to the direct effect of the fallback itself, and not the ultimate effect of the activity which produced it.<sup>[161]</sup> As the court suggested in *National Mining*, the Tulloch Rule seemed to be less a reasoned effort to interpret section 404 than a stratagem for extending the Corps' authority.<sup>[162]</sup>

*National Mining* vindicates the Corps' earlier caution in interpreting that authority. The CWA did not begin as a wetlands statute, nor was that the main purpose of section 404.<sup>[163]</sup> Its power to authorize regulations protecting wetlands is limited by this history. The Corps' decision to remedy this limitation by agreeing to propose what became the Tulloch Rule was ill-considered, as was the private suit which prompted this decision. Although other means of regulating wetlands are still available to the EPA and the Corps after *National Mining*,<sup>[164]</sup> the decision significantly weakens section 404. If its strength is to be restored, then it is Congress, and not the agencies, which must create the needed authority.

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[\*] I am a third-year student at Washington University Law School with a particular interest in land-use and environmental law. I wish to thank Professor Daniel Mandelker for his helpful comments on earlier drafts of this article. [Return to text.](#)

[1] *National Mining Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399 (D.C. Cir. 1998). [Return to text.](#)

[2] According to the Corps of Engineers, wetlands are "[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." 33 C.F.R. § 328.3(8)(b) (1998). [Return to text.](#)

[3] *See* Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008 (1993). The most significant features of this rule were codified at 33 C.F.R. § 323.2(d)(1)(iii) (1994). The EPA adopted a parallel rule, codified at 40 C.F.R. § 232.2(1)(iii) (1994). With few exceptions, this article cites only the Corps regulations. [Return to text.](#)

[4] Clean Water Act § 404, 33 U.S.C. § 1344 (1994 & Supp. II 1996). [Return to text.](#)

[5] Clean Water Act of 1972, 33 U.S.C. §§ 1251-1376 (1994 & Supp. II 1996). *See infra* notes 24-25 and accompanying text. [Return to text.](#)

[6] The preamble to the Tulloch Rule describes this project and its environmental effects in detail. *See* Regulatory Programs, 58 Fed. Reg. 45,016. [Return to text.](#)

[7] *See id.* at 45,018. [Return to text.](#)

[8] *See infra* notes 17 and 80. [Return to text.](#)

[9] *See* *United States v. Wilson*, 133 F.3d 251, 254-55, 258 (4th Cir. 1997) (discussing whether drainage had removed sites from wetland status before addition of fill material in housing development without section 404 permit); *Save Our Community v. United States EPA*, 971 F.2d 1155 (5th Cir. 1992) (holding that pumping to dry out natural ponds and allow expansion of landfill created no regulable discharge under section 404), *rev'd* 741 F. Supp. 605 (N.D. Tex. 1990); *Orleans Audubon Soc'y v. Lee*, 742 F.2d 901 (5th Cir. 1984) (holding that section 404 did not reach destruction of wetland forest by drainage where sole discharge from drainage channels was clear water); *Salt Pond Assocs. v. United States Army Corps of Eng'rs*, 815 F. Supp. 766 (D. Del. 1993) (holding that excavation of ponds on site containing wetlands, providing drainage while causing only incidental discharges, did not require section 404 permit). [Return to text.](#)

[10] *See* *Wilson*, 133 F.2d at 254-55, 258; *see* Kevin O'Hagan, Comment, *Pumping With the Intent to Kill: Evading Wetlands Jurisdiction under Section 404 of the Clean Water Act Through Draining*, 40 DE PAUL L. REV. 1059, 1080 (1991). [Return to text.](#)

[11] In the settlement of the *Tulloch* lawsuit, the plaintiffs demanded regulations which would achieve this purpose, and the agencies agreed to propose them. *See* Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008 (1993); "[I]t is precisely because of operations like this development [in *Tulloch*] that the Corps and EPA have decided to promulgate this rule." *Id.* at 45,016. [Return to text.](#)

[12] This concern was common well before the CWA was enacted in 1972. *See* W. Christian Hoyer, *Corps of Engineers Dredge and Fill Jurisdiction: Buttressing a Citadel Under Siege*, 26 U. FLA. L. REV. 19, 29 nn.80-81, 30-35 (1973). It was also evident during the CWA's creation: "[W]e have found . . . that mission-oriented agencies whose concern is something other than concern for the environment simply do not adequately protect environmental values. That is not [the Corps'] mission." 2 ENVIRONMENTAL POLICY DIVISION, CONGRESSIONAL RESEARCH SERVICE, 92d Cong., 2d Sess., Ser. No. 92-14, A LEGISLATIVE HISTORY OF THE CLEAN WATER ACT OF 1972, at 1389 [hereinafter "LEGISLATIVE HISTORY (1972)"] (statement of Sen. Muskie in Senate debate on SB 2770). It continued well past this time, as shown by a 1989 article whose authors urged that Congress take away the Corps' section 404 authority entirely. They stated that "[t]he central impediment to an effective regulatory program [is] the unwillingness of the permit-issuing agency to implement the program aggressively." Michael C. Blumm and D. Bernard Zaleha, *Federal Wetlands Protection Under the Clean Water Act: Regulatory Ambivalence, Intergovernmental Tension, and a Call for Reform*, 60 U. COLO. L. REV. 695, 699 (1989). *But see* Garrett Power, *The Fox in the Chicken Coop: The Regulatory Program of the United States Army Corps of Engineers*, 63 VA. L. REV. 503, 559 (1977) ("Once the nemesis of the environmentalists, the Corps is now their hero. In the words of Senator Edmund Muskie, '[W]e have put the fox in the chicken coop [and it has] become a chicken . . . ."). [Return to text.](#)

[13] North Carolina Wildlife Fed'n v. Tulloch, Civ. No. C90-713-CIV-5-BO (E.D. N.C. 1992). [Return to text.](#)

[14] Because the Corps shares administration of section 404 with the EPA, this article ordinarily uses the terms "agencies" and "Corps" interchangeably. Where the Corps is the primary subject of discussion, however, it is referred to by name. [Return to text.](#)

[15] *See* National Mining Ass'n v. United States Army Corps of Eng'rs, 145 F.3d 1399, 1402 (D.C. Cir. 1998). [Return to text.](#)

[16] *See id.* at 1403. [Return to text.](#)

[17] In 1986, the Corps published the rule that the Tulloch Rule superseded. *See id.* at 1401. The 1986 rule defined the term "discharge of dredged material" under section 404 as "any addition of dredged material into the waters of the United States," excluding "de minimis, incidental soil movement occurring during normal dredging operations." Final Rule for Regulatory Programs of the Corps of Engineers, 51 Fed. Reg. 41,206, 41,232 (1986). The Tulloch Rule changed this definition to include "any addition of dredged material into, including any redeposit of dredged material within, the waters of the United States." 33 C.F.R. § 323.2(d)(1) (1998) (emphasis added). The revised definition also encompassed discharges of "excavated material" which were "incidental to any activity, including mechanized landclearing, ditching, channelization, or other excavation." 33 C.F.R. § 323.2(d)(1)(iii) (emphasis added). [Return to text.](#)

[18] Under the CWA, an "addition" is necessary for a "discharge." 33 U.S.C. § 1362(12) (1994 & Supp. II 1996). Without a "discharge" there can be no section 404 jurisdiction. *See infra* note 22. [Return to text.](#)

[19] The CWA defines a point source as "[a]ny discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). Courts have also found various machines to be point sources. *See, e.g.,* Avoyelles Sportsmen's League, Inc. v. Marsh, 715 F.2d 897, 922 (5th Cir. 1983) (finding bulldozers and land clearing equipment); United States v. Holland, 373 F. Supp. 665, 668 (M.D. Fla. 1974) (finding bulldozers, dump trucks, and draglines). [Return to text.](#)

[20] The CWA defines a "pollutant" as "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." 33 U.S.C. § 1362(6). [Return to text.](#)

[21] The CWA authorizes the Corps to issue permits for the discharge of dredged or fill material "into the navigable waters . . . ." 33 U.S.C. § 1344(a). The CWA defines "navigable waters" as "the waters of the United States, including

the territorial seas." *Id.* § 1362(7). It does not in turn define "the waters of the United States." In its regulations, the Corps defines "waters of the United States" as all "waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." 33 C.F.R. § 328.3(1) (1998). This definition encompasses "all interstate waters including interstate wetlands," *id.* at § 328.3(2), and wetlands adjacent to listed waters, "other than waters which are themselves wetlands," *id.* § 328.3(7). For a detailed history of the expansion of the Corps' jurisdiction over navigable waters, see Hoyer, *supra* note 12, at 20-25. [Return to text.](#)

[22] "Discharge" means "any addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12)(A). The "discharge of a pollutant by any person" is unlawful if not in compliance with the applicable CWA permit requirements. *Id.* § 1311(a). Because section 404 authorizes the Corps to issue permits "for the discharge of dredged or fill material," no jurisdiction under that section exists without a "discharge." "The existence of discharge is critical. The discharge must be of effluent or dredged or fill material . . . [O]n the face of the statute, it is the requirement for statutory coverage." *Save Our Community v. United States EPA*, 971 F.2d 1155, 1163 (5th Cir. 1992). [Return to text.](#)

[23] The Federal Water Pollution Control Act Amendments, Pub. L. No. 92-500, 86 Stat. 816 (1972), substantially expanded and reorganized the Federal Water Pollution Control Act of 1948, ch. 758, 62 Stat. 1155. [Return to text.](#)

[24] Clean Water Act, 33 U.S.C. §§ 1251-1376. During its first five years, the Act was commonly known as the Federal Water Pollution Control Act (FWPCA). Since 1977, when Congress amended the Act and officially approved the term "Clean Water Act," it has usually been called by that name. *See* Michael Blumm, *The Clean Water Act's Section 404 Program Enters Its Adolescence: An Institutional and Programmatic Perspective*, 8 *ECOLOGY L. Q.* 410, 410 (1980). [Return to text.](#)

[25] 33 U.S.C. § 1251(a). [Return to text.](#)

[26] *See* Charles Ablard and Brian O'Neill, *Wetland Protection and Section 404 of the FWPCA Amendments of 1972: A Corps of Engineers Renaissance*, 1 *VT. L. REV.* 51, 55 n.20 (1976). [Return to text.](#)

[27] The EPA has general authority to develop comprehensive programs to control water pollution under 33 U.S.C. § 1252. Section 402 gives the EPA authority over the most important of these, the NPDES permit program. *See id.* § 1342. [Return to text.](#)

[28] Water movements in shipping channels shift and pile up bottom sediments, and the resulting shallows pose a hazard to navigation. Therefore large dredges are used to deepen the channel by excavating this built-up material. Once extracted, the material is often referred to as "dredged spoil." Heavy weather increases the amount of dredging needed, and this amount therefore varies both by season and by year. *See generally* Allan Bakalian, *Regulation and Control of United States Ocean Dumping: A Decade of Progress, an Appraisal for the Future*, 8 *HARV. ENV'T'L L. REV.* 193 (1984). Data available for 1979, a fairly representative year, show that more than 70 million cubic yards of dredged materials were dumped into oceans off the coasts of the United States. *See id.* at 204. The proportion of dredged spoil was almost eight times that of all other categories (e.g., sewage sludge, industrial wastes) combined. *See id.* [Return to text.](#)

[29] Senator Ellender, for example, was concerned that SB 2770, the bill which resulted in the CWA, did not differentiate the disposal of dredged material from that of other effluents: "[O]ne of the main deficiencies of this bill is that it treats dredged materials the same as industrial waste, sewage sludge, or refuse introduced into a river system, lake, estuary, or ocean. The disposal of dredged material does not involve the introduction of new pollutants; it merely moves the material from one location to another." *LEGISLATIVE HISTORY (1972)*, *supra* note 12, at 1386 (statement of Sen. Ellender in Senate debate). [Return to text.](#)

[30] "The strict adherence to the [EPA's] published standards would result in 90 percent of the ports and harbors of the United States being closed, until such time as land disposal areas are provided. This would create a catastrophic situation with respect to our foreign and domestic commerce." *Id.* at 1387 (statement of Sen. Ellender in Senate debate); "Will the Senator please tell me why . . . the Corps of Engineers only with respect to dredging should not be subject to

what [i.e., EPA's § 404 certification of discharges] we are requiring of every other agency?" *Id.* at 1388 (question by Sen. Muskie in Senate debate);

"In order to get their job done. This project [thirty diked dredged spoil disposal sites for the Great Lakes which Congress had earlier that year voted the Corps the funds to build] has got to stand by and wait and wait and wait for the application. The new agency [EPA] has not been in operation very long. I do not charge them with wrongdoing but they need time to develop."

*Id.* (response of Sen. Stennis). [Return to text.](#)

[31] The Corps was already exercising its authority under section 10 of the RHA to regulate discharges into waters which were actually navigable, *see infra* note 64. SB 2770, however, included dredged spoil, rock, sand and cellar dirt in its list of pollutants, which the EPA was to regulate under the NPDES. Whenever a discharge of these materials took place in navigable waters, therefore, both agencies would have permitting authority. Moreover, it seemed that the NPDES, by covering dredged spoil, would authorize the EPA to regulate the vast discharges caused by the Corps' own channel maintenance. *See Power, supra* note 12, at 522. [Return to text.](#)

[32] Senator Ellender proposed section 404, which Congress enacted in substance, to exempt regulation of dredged material from the NPDES. *See* LEGISLATIVE HISTORY (1972), *supra* note 12, at 1388 (statement of Sen. Muskie in Senate debate) ("What Senator Ellender's amendment would do would be to exempt dredging."); *Power, supra* note 12, at 522; *Blumm, supra* note 24, at 415. [Return to text.](#)

[33] "If polluted discharges from municipal and industrial sources are controlled as required by this bill, the disposal of dredged material in open water presents no significant problem." LEGISLATIVE HISTORY (1972), *supra* note 12, at 1386 (statement of Sen. Ellender in Senate debate);

"The Secretary and the Administrator shall act promptly on dredging permits essential for the maintenance of interstate commerce because of the seasonal nature of dredging and the need to preschedule scarce dredging equipment. It is expected that until such time as feasible methods for disposal of dredged and fill material are available, unreasonable restrictions shall not be imposed on dredging activities essential for the maintenance of interstate and foreign commerce."

*Id.* at 325 (report of the Conference Committee). [Return to text.](#)

[34] "In fact, Congress intended that section 404 in the 1972 act would in its initial implementation end the open water disposal of dredge spoil. Quite the contrary has been the case." SENATE REPORT NO. 370, 95th Cong., 1st Sess. 68 (1977), *reprinted in* 4 Environmental Policy Division, Congressional Research Service, A LEGISLATIVE HISTORY OF THE CLEAN WATER ACT OF 1977, 95th Cong., 2d Sess., Ser. No. 95-14, at 701 (1978) [hereinafter LEGISLATIVE HISTORY (1977)]; "[T]he [Conference] Committee expects the [EPA] Administrator and the Secretary [of the Army] . . . to identify land-based sites for the disposal of dredged spoil and, where land-based disposal is not feasible, to establish diked areas for such disposal. [T]he only justification for continuing to utilize open water disposal is the cost of alternatives." LEGISLATIVE HISTORY (1972), *supra* note 12, at 177-78 (statement of Sen. Muskie). [Return to text.](#)

[35] Congress was pursuing this strategy even before it enacted the CWA. Two years earlier, it authorized the Corps to build and operate "contained disposal facilities" as part of the River and Harbor Act of 1970, Pub. L. 91-611, 84 Stat. 1823 (codified as amended at 33 U.S.C. § 1293a. (1994 & Supp. II 1996)). Part of this section concerns agreements with state and local governments to acquire "lands" necessary for the facilities. *Id.* § 1293a(c). An early example of an alternative to open-water disposal of dredged spoil was a Corps project to build thirty diked disposal sites for harbors in the Great Lakes. *See* LEGISLATIVE HISTORY (1972), *supra* note 12, at 1386; *see supra* note 30 (response of Sen. Stennis). [Return to text.](#)

[36] Senator Muskie, the main proponent of the CWA, did not want to exempt the Corps from its prohibitions. He therefore opposed Senator Ellender's amendment but could not prevent it. "[T]here is no question that the Secretary of the Army should retain authority to permit dredging operations for the purpose of navigable water and channel maintenance. It is a mission-oriented agency, and this is its mission. . . . [B]ut, conversely, spoil disposal should be

subject to EPA regulations." LEGISLATIVE HISTORY (1972), *supra* note 12, at 1388 (statement of Sen. Muskie in Senate debate). [Return to text.](#)

[37] *See infra* notes 45-48 and accompanying text. [Return to text.](#)

[38] Senator Muskie expressed this concern:

"[T]he Corps of Engineers . . . is not equipped to evaluate the environmental impact of these dredging activities. It is equipped to make judgments on what is needed for navigation . . . . [W]hat Section 401 would require is that [EPA evaluate] the pollution potential of the proposed dredge spoil and the environmental impact of disposing of dredge spoil in particular locations or sites . . . . If we eliminate those two checks by the only agency we have to evaluate environmental damage and make dredgers exempt [i.e., by enacting section 404 as proposed], as no one else is under this bill, from this kind of monitoring and supervision, it means releasing them from all control."

LEGISLATIVE HISTORY (1972), *supra* note 12, at 1388 (statement of Sen. Muskie in Senate debate). Senator Muskie offered his own amendment, subsection 402(m), as an alternative to section 404. This provision would have given the EPA authority to regulate disposal of dredged material in waters not under RHA jurisdiction, on the basis of certain environmental effects. Section 402(m) would have required the EPA to consider the effects of disposal of dredged material on municipal water supplies, on shellfish beds, on wildlife, and on fisheries. *See id.* at 1392-93. These effects are reflected in the terms of subsection 404(c), under which the EPA may veto a permit proposal which the Corps has approved. 33 U.S.C. § 1344(c) (1994 & Supp. II 1996). [Return to text.](#)

[39] 33 U.S.C. § 1344(a) . [Return to text.](#)

[40] *See* 33 C.F.R. §§ 320.1(a)(1), 320.4(a)(2)(i) (1998); *see also* O'Hagan, *supra* note 10, at 1075-76 (1991). For a critical analysis of the public review process, *see* Power, *supra* note 12, at 547-56. [Return to text.](#)

[41] *See* 33 C.F.R. § 320.4(a)(2)(iii) (1998). [Return to text.](#)

[42] *See id.* § 320.4(a)(2)(ii). [Return to text.](#)

[43] Except as section 404(b)(2) provides, no permit may issue for a discharge of dredged or fill material "if there is a practicable alternative . . . which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 C.F.R. § 230.10(a) (1998). *See* Oliver Houck, *Analysis of Alternatives Under Section 404 of the Clean Water Act and Similar Environmental Laws*, 60 U. COLO. L. REV. 773, 774 (1989). Where the EPA's guidelines do not indicate that a permit for a disposal site should be granted, section 404(b)(2) authorizes the Corps to consider also the economic impact of its decision on navigation and anchorage. 33 U.S.C. § 1344 (b)(2). [Return to text.](#)

[44] *See* *Bersani v. Robichaud*, 850 F.2d 36, 38 (2d Cir. 1988) (upholding time-of-market-entry theory). [Return to text.](#)

[45] *See* 40 C.F.R. § 230.10(a) (1998), 33 C.F.R. § 320.4(b)(4) (1998). EPA first published its guidelines, in interim final form, at 40 Fed. Reg. 41,292 (1975). [Return to text.](#)

[46] *See* 33 U.S.C. § 1344(a). [Return to text.](#)

[47] *See id.* § 1344(b)(1). [Return to text.](#)

[48] Section 403(c) establishes the following criteria, stated here in general terms, for ocean discharges:

the effect of the disposal of pollutants on human health or welfare;

the effect of the disposal of pollutants on marine life;

the effect of the disposal of pollutants on esthetic, recreational, and economic values;

- the persistence and permanence of the effects of the disposal of pollutants;
- the effect of the disposal of pollutants at varying rates, volumes, and concentrations;
- other possible locations and methods of disposal or recycling, including land-based alternatives;
- the effect of the disposal of pollutants on alternate uses of the oceans.

*Id.* § 1343(c). [Return to text.](#)

[49] *See* U.S. Const. art. I, § 8, cl. 3. [Return to text.](#)

[50] The CWA prohibits the discharge of pollutants into "waters of the United States," unless with a permit. 33 U.S.C. §§ 1311(a), 1362(7). [Return to text.](#)

[51] The Corps at first took the physical limits of its jurisdiction under section 404 to be much the same as those it observed under RHA section 10. *See* Gerald Torres, *Wetlands and Agriculture: Environmental Regulation and the Limits of Private Property*, 34 U. KAN. L. REV. 539, 550-51 (1986); *see also* Blumm & Zaleha, *supra* note 12, at 704 ("[T]he Corps resisted [broad jurisdiction] . . . [T]o it, section 404 was simply an exemption from the new EPA permit system for its preexisting regulatory program."). [Return to text.](#)

[52] *See* *United States v. Ashland Oil & Transp. Co.*, 504 F.2d 1317 (6th Cir. 1974) (construing CWA jurisdiction, under Commerce Clause, to reach discharge of oil into stream not navigable by traditional tests); *Leslie Salt v. Froehlke*, 403 F. Supp. 1292 (N.D. Cal. 1974) (holding that Corps' CWA jurisdiction extended to salt evaporation ponds lying above reach of tide as usually measured, but below line which Corps used as measure on Pacific coast), *modified and rev'd in other part*, 578 F.2d 742 (9th Cir. 1978); *United States v. Holland*, 373 F. Supp. 665 (M.D. Fla. 1974) (holding that federal jurisdiction extended to filling in mangrove swamps above line of mean high tide);. [Return to text.](#)

[53] By tradition, this boundary has most often been the line of mean high tide. *See Leslie Salt*, 403 F. Supp. at 1294 (discussing methods of determining the line of high tide to establish the boundary of navigable waters). [Return to text.](#)

[54] The Corps kept its existing regulations despite significant decisions such as *Holland* and *Ashland Oil*. *See* Power, *supra* note 12, at 522. Extending jurisdiction above the level of the high tide line in order to protect wetlands makes it necessary to delineate the boundary between water and land by some other measure. It is more difficult to determine precisely the landward boundary of United States waters by using markers which tend not to change abruptly, for example soil or vegetation characteristics, than by using the traditional standard, the mean of nineteen years' measurements of the two daily high tide lines. Moreover, this delineation will often be made in flat land, where small differences in elevation correspond to large differences in the horizontal reach of water's edge. It is reasonable to assume that the Corps was not eager to burden itself with the regulatory difficulties which this new approach entailed. [Return to text.](#)

[55] *National Resources Defense Council v. Callaway*, 392 F. Supp. 685 (D.D.C. 1975). *See* Blumm & Zaleha, *supra* note 12, at 705 n.55. [Return to text.](#)

[56] *See* James T.B. Tripp, *Public Inputting in the Permitting Process: The Section 404 Example*, NAT. RESOURCES & ENV'T, Winter 1987, at 23. [Return to text.](#)

[57] *See* Blumm, *supra* note 24, at 412, 417; *see* Ablard & O'Neill, *supra* note 26, at 53-54. [Return to text.](#)

[58] *United States v. Riverside Bayview Homes*, 474 U.S. 121 (1985). [Return to text.](#)

[59] The Court ruled that it was not unreasonable for the Corps to interpret section 404 to include wetlands "adjacent to but not regularly flooded by rivers, streams, and other hydrographic features more conventionally identifiable as

'waters'." *Id.* at 131-32 & n.8. [Return to text.](#)

[60] *See, e.g.,* National Mining Ass'n v. United States Army Corps of Eng'rs, 145 F.3d 1399, 1401 (D.C. Cir. 1998). The Supreme Court upheld the validity of the Corps' regulation under the CWA, but only as it applies to a wetland "that actually abuts on a navigable waterway." *Riverside Bayview Homes*, 474 U.S. at 135. The Court also found that under the CWA, the term "navigable waters" encompasses "at least some waters that would not be deemed 'navigable' under the classical understanding of that term." *Id.* at 133. [Return to text.](#)

[61] Rivers and Harbors Appropriation Act of 1899, ch. 425, 30 Stat. 1152. The significant provisions of the RHA are codified at 33 U.S.C. §§ 403, 404, 406-09, 411-15 (1994 & 1996 Supp. II). [Return to text.](#)

[62] "Congress enacted two separate statutory frameworks. Section 10 of the 1899 Act [RHA] covers the act of dredging, while Section 404 [of the CWA] covers the disposal of the dredged material." Ablard and O'Neill, *supra* note 26, at 93. [Return to text.](#)

[63] "Under section 10 . . . [the Corps] construes [navigable waters] to embrace dredge and fill activities within actually navigable waters, while under section 404 . . . it construes the term so as to regulate dredge and fill in waters that are not only navigable in fact, but may include freshwater wetlands." *United States v. Cumberland Farms of Conn., Inc.*, 826 F.2d 1151, 1158 (1st Cir. 1987); "The principal difference [between the two statutes] is that section 404 reaches only discharges while [RHA] section 10 applies to activities modifying channels without regard to whether there has been a discharge." WILLIAM RODGERS, ENVIRONMENTAL LAW § 4.6 (1986); *see* Ablard & O'Neill, *supra* note 26, at 93. *See also* Blumm, *supra* note 24, at 418. [Return to text.](#)

[64] *See* National Mining, 145 F.3d at 1404-05 & n.5 [Return to text.](#)

[65] Congress' chief reason for enacting the RHA was to aid navigation. 32 CONG. REC. 2297 (1899), *cited in* Hoyer, *supra* note 12, at 25 n.47; *see id.* at 25-26; *see also* Ablard and O'Neill, *supra* note 26, at 51, 55 n.20. [Return to text.](#)

[66] *See* 33 U.S.C. § 403 (1994 & Supp. II 1996). [Return to text.](#)

[67] *See supra* notes 28 and 31 and accompanying text. [Return to text.](#)

[68] *See* 33 U.S.C. § 407 ; *see also* Ablard & O'Neill, *supra* note 26, at 55-56. [Return to text.](#)

[69] *See* Hoyer, *supra* note 12, at 25-26; *see, e.g.,* Miami Beach Jockey Club v. Dern, 86 F.2d 135, 136 (D.C. Cir. 1936) (requiring permit decision to be based "exclusively on evidence directed to the question whether, in light of present-day conditions with relation to commerce and navigation [the construction] will obstruct the navigable capacity of the waterway . . ."). [Return to text.](#)

[70] The Fish and Wildlife Coordination Act, ch. 55, 48 Stat. 401 (1934), was extensively amended in 1958 and again in 1970. It is codified as amended at 16 U.S.C. §§ 661-666c. (1994 & Supp. II 1996). [Return to text.](#)

[71] The FWCA requires the Corps to consult with the United States Fish and Wildlife Service, the Department of Interior, and with applicable state agencies administering wildlife resources in the area of a proposed project. The purpose of this consultation is to conserve these resources and to provide for their improvement in the project's design. The Corps must engage in this consultation whenever a channel is to be deepened or a "[b]ody of water otherwise controlled or modified for any purpose whatever . . . by any department or agency of the United States, or by any public or private agency under Federal permit . . ." 16 U.S.C. § 662 (1994 & Supp. II 1996). For a discussion of the FWCA requirements and their relation to section 404 permitting, *see Lake Erie Alliance v. Corps of Engineers*, 526 F. Supp. 1063, 1080-81 (W.D. Pa. 1981). [Return to text.](#)

[72] *Zabel v. Tabb*, 430 F.2d 199 (5th Cir. 1970) (holding that Congress' power to regulate interstate commerce included the power to assure a stable environment for fish and wildlife in estuaries), *rev'g* 296 F. Supp. 764 (M.D. Fla. 1969). [Return to text.](#)

[73] The Fifth Circuit held that the combined effect of NEPA, a 1958 amendment to the FWCA, and a 1970 House Committee report was to leave "no doubt that the Secretary [of the Army, acting through the Corps] can refuse on conservation grounds to grant a permit under the [RHA]." Zabel, 430 F.2d at 214. [Return to text.](#)

[74] See William L. Want, *Federal Wetlands Law: The Cases and the Problems*, 8 HARV. ENVTL L. REV. 1, 13 (1984); Margaret N. Strand, *Federal Wetlands Law: Part I*, 23 ENVTL. L. REPTR. 10,185, 10,190 (1993). [Return to text.](#)

[75] See *United States v. Standard Oil Co.*, 384 U.S. 224 (1966) (holding that section 13 reached discharge of 300 gallons of aviation gasoline as "refuse" which threatened navigation); Strand, *supra* note 74, at 10,190; *United States v. Republic Steel Corp.*, 362 U.S. 482 (1960) (holding that accumulated discharge of industrial waste particles in fluid suspension, partially obstructing river channel, was not within § 13 exception for liquid sewerage). For a very thorough analysis of section 13 and the RHA generally, see Robert L. Potter, Comment, *Discharging New Wine Into Old Wineskins: The Metamorphosis of the Rivers and Harbors Act of 1899*, 33 U. PITT. L. REV. 483 (1972). [Return to text.](#)

[76] See Exec. Order No. 11,574, 35 Fed. Reg. 19,627 (1970) (authorizing the Refuse Act Permit Program (RAPP)); see also 35 Fed. Reg. 20,005 (1970) (detailing RAPP). [Return to text.](#)

[77] See *Kalur v. Resor*, 335 F. Supp. 1, 9 (D.D.C. 1971) (invalidating the Refuse Act Permit Program as far as the Corps' authority to issue permits to discharge refuse into nonnavigable waterways which lead into navigable waters). [Return to text.](#)

[78] CWA section 402 transferred to the EPA the Corps' former authority under RHA section 13 to issue permits for discharges into navigable waters. See 33 U.S.C. § 1342(5) (1994 & Supp. II 1996). However, section 13 retains, at least potentially, a legal force independent of the CWA. See *United States v. Pennsylvania Indus. Chem. Corp.*, 411 U.S. 655 (1973) (holding that effectiveness of § 13's prohibition of discharges does not depend on a regulatory program involving permits); Ablard & O'Neill, *supra* note 26, at 56 n.29; see generally *Kalur v. Resor*, Comment, *Water Quality, and NEPA's Application to EPA*, 2 ENVTL L. REPTR. 10,025 (1972). [Return to text.](#)

[79] By suddenly placing thousands of industries in violation of the Refuse Act, the *Kalur* decision stimulated the replacement of the section 13 program with the CWA. See *Power*, *supra* note 12, at 512-13. [Return to text.](#)

[80] The Corps' 1986 regulations specifically exempted "de minimis, incidental soil movement occurring during normal dredging operations" from the permit requirement. 51 Fed. Reg. 41,206, 41,232 (1986). Although its 1977 regulations had not also made this specific exemption, see Part 323—Permits for Discharges of Dredged or Fill Materials Into Waters of the United States, 42 Fed. Reg. 37,144 (1977), the Corps' district offices generally observed it at that time. See *Clean Water Act Regulatory Programs*, 58 Fed. Reg. 45,008, 45,013 (1993) ("[This] practice [exemption of small-volume, incidental discharges] . . . was also viewed by many Corps districts as consistent with the thrust of guidance dating from the late 1970's regarding de minimis discharges associated with normal dredging activities."). The pertinent part of a "regulatory guidance letter" (RGL) from 1982, issued by the Corps to communicate its policy to district offices, also illustrates this policy: "[D]e minimis discharge occurring during normal dredging operations, such as the drippings from a dragline bucket, is not considered to be a § 404 discharge." Office of Corps of Engineers Regulatory Guidance Letter 81-4 (June 3, 1982), *quoted in Reid v. Marsh*, 20 Env'tl. Rep. Cas. (BNA) 1337, 1339 (N.D. Ohio 1984). [Return to text.](#)

[81] "Section 404 clearly directs the Corps to regulate the discharge of dredged material, not the dredging itself . . . ." *Permits for Discharges*, 51 Fed. Reg. at 41,210 (preamble to 1986 regulations). [Return to text.](#)

[82] "[D]redging operations cannot be performed without some fallback . . . ." *Id.* [Return to text.](#)

[83] "[H]owever, if we were to define . . . [incidental] fallback as a 'discharge of dredged material,' we would, in effect, be adding the regulation of dredging to section 404 . . . ." *Id.* [Return to text.](#)

[84] "[W]e do not believe [adding the regulation of dredging to section 404] was the intent of Congress." *Id.* [Return to text.](#)

[85] *See* Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008, 45,016 (1993). The total area of the development was about 1800 acres. *See id.* [Return to text.](#)

[86] *See id.* [Return to text.](#)

[87] The agencies pointed to their increased awareness of the damage caused by drainage of wetlands to explain why they had reversed their earlier position and now advocated effects-based regulation. *See id.* at 45,015. [Return to text.](#)

[88] *See* American Mining Congress v. United States Army Corps of Engi'gs, 951 F. Supp. 267 (D.D.C. 1997), in which the plaintiffs claimed that the Tulloch rule "(1) is inconsistent with the language and intent of the CWA; (2) is arbitrary, capricious, and otherwise not in accordance with law . . . because it exempts navigational dredging, which is generally done by the Corps, and exempts landclearing from a grandfather clause; (3) violates plaintiffs' due process rights under the Fifth Amendment to the Constitution because it (a) is vague, and (b) shifts to regulated parties the burden of showing that their activities are not covered; and (4) was promulgated in violation of the procedural requirements of the APA." *Id.* at 270 (citations omitted). In granting summary judgment for the plaintiffs, the District Court for the District of Columbia addressed only the first of these claims. *See id.* [Return to text.](#)

[89] *See* National Mining Ass'n v. United States Army Corps of Eng'rs, 145 F.3d 1399, 1403 (D.C. Cir. 1998). In their comments accompanying the Tulloch Rule, the agencies argued at length that the CWA authorized them to regulate redeposits on the basis of the effect of the activity producing them. Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008, 45,012 (1993) (emphasis added). For example, they stated that:

"EPA and the Corps do not believe that . . . [under the CWA] redeposition of dredged material is only regulated if it is "moved" from one "place" to another. Rather than focus simply on the spatial relationship between where the excavation and redeposition occur . . . [to determine] jurisdiction under Section 404, this rule will regulate an activity (involving a discharge to any part of waters of the U.S.) taking into account the *effect of the activity on the aquatic environment.*"

*Id.* (emphasis added). [Return to text.](#)

[90] National Mining, 145 F.3d at 1403-04, also contains several secondary arguments, which are discussed briefly here. The appellants urged the court to review the Tulloch Rule under the very lenient standard of judicial review which a Supreme Court case construing a bail statute, *United States v. Salerno*, 481 U.S. 739 (1987), established for facial challenges to federal statutes. *See* National Mining, 145 F.3d at 1406. The court termed this a "last-ditch" argument, but then took pains to refute it. The court refused to accept that the facial nature of the challenge, by itself, required it to depart from the *Chevron* standard, or from its own precedents regarding administrative rulemaking. *See id.* at 1407-08. The court noted in passing that a facial challenge is sometimes improper, as when its success depends on an assumption that the agency will act in bad faith. *See id.* It said that the challenge here, however, was rather that the agencies exceeded their statutory authority by applying Tulloch faithfully. *See id.* at 1408.

The agencies also argued that Congress' exemption of minor deposits from certain activities in subsection 404(f) was evidence that it considered section 404 in general to cover incidental fallback. *See id.* at 1405; *see also* discussion *infra* Part III.B. for a description of subsection 404(f). In this argument, Congress' use of the phrase "discharge of dredged or fill material" to describe the consequences of activities listed in section 404(f)(1) showed that it believed incidental fallback to be a type of discharge. *See id.* at 1405. The *National Mining* court, however, was not persuaded by this reading of subsection 404(f). It said that Congress could just as easily have been addressing activities which produced actual discharges, and not merely incidental fallback. *See id.*

A final argument challenged the district court's issuance of a nationwide injunction setting aside the Tulloch Rule. The District of Columbia Circuit upheld the district court's use of this remedy, citing its own rule that "when a reviewing court determines that agency regulations are unlawful, the ordinary result is that the rules are vacated—not that their application to the individual petitioners is proscribed." *Id.* at 1409 (citation omitted). The court also cited Justice Blackmun's dissenting opinion in *Lujan v. National Wildlife Federation*, 497 U.S. 871, 913 (1990), for a rule which it took to be the unanimous opinion of the Supreme Court justices on this question. This is that a broadly applicable administrative rule is invalid generally when a single plaintiff wins a claim that it has injured him. *See id.* at 1409.

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[91] The Corps defines "dredged material" as "material that is excavated or dredged from waters of the United States." 33 C.F.R. § 323.2(c) (1998). [Return to text.](#)

[92] *See supra* note 20. [Return to text.](#)

[93] In a recent Fourth Circuit case mentioned in *National Mining*, Judge Niemeyer also accepted that "[s]oil may be definitionally transformed, through the act of excavation, from a part of the wetland into "dredged spoil," a statutory pollutant . . . ." *United States v. Wilson*, 133 F.3d 251, 259 (4th Cir. 1997). [Return to text.](#)

[94] *See National Mining Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399, 1404 (1993). [Return to text.](#)

[95] *See id.* [Return to text.](#)

[96] *See id.* [Return to text.](#)

[97] *Id.* The court also noted that oral argument had revealed the "unreasonableness" of the agencies' statutory interpretation. For example, counsel for the agencies agreed that under their interpretation of section 404, the Corps could require a permit to ride a bicycle across a wetland, although the Tulloch Rule seemed to exempt that activity for the time being. *See id.* at n.4. (citations omitted). [Return to text.](#)

[98] *See id.* at 1404. [Return to text.](#)

[99] *See id.* at 1404-05. [Return to text.](#)

[100] This question has been important in other cases construing CWA provisions. *See Dubois v. United States Dep't of Agric.*, 102 F.3d 1273, 1296-99 (1st Cir. 1996) (holding that movement of pollutants between waters of different quality is an "addition" requiring a permit under section 402, although not necessarily true of such movement within the same water); *United States v. Wilson*, 133 F.3d 251, 259-60 (4th Cir. 1997) (opinion of Niemeyer, J.) (ruling that "addition" requires either introduction of new material from outside the area at issue, or increase in amount of material already there); *National Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 174-75 (D.C. Cir. 1982) (upholding EPA's interpretation that chemical and other changes in quality of water behind dam were not regulable under section 402, because not originating in the "outside world" and therefore not an "addition"); *National Wildlife Fed'n v. Consumers' Power*, 862 F.2d 580, 584-85 (6th Cir. 1988) (holding that transfer of fish parts to and from Lake Michigan by passage through dam turbines was not an "addition" covered by section 402 of the CWA because material came from the water itself); *but see Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897, 923 (5th Cir. 1983) (finding that an "addition," as included in the definition of "discharge," can be a redeposit and need not come from an outside source); *accord, Rybachek v. EPA*, 904 F.2d 1276, 1285 (9th Cir. 1990); *accord, Wilson*, 133 F.3d at 272-74 (Luttig, J., concurring in judgment but arguing that sidecasting is regulable as an "addition"). [Return to text.](#)

[101] *National Mining Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399, 1405 (D.C. Cir. 1998). [Return to text.](#)

[102] *See* 33 C.F.R. § 323.2(c) (1998). [Return to text.](#)

[103] *See* cases cited *supra* note 100. [Return to text.](#)

[104] Recalling that this was not a new observation, the court quoted from *Avoyelles*: "'Dredged' material is by definition material that comes from the water itself. A requirement that all pollutants must come from outside sources would effectively remove the dredge-and-fill provision from the statute." *National Mining*, 145 F.3d at 1405 (citation omitted). [Return to text.](#)

[105] *See id.* [Return to text.](#)

[106] *See id.* [Return to text.](#)

[107] *Id.* [Return to text.](#)

[108] *Id.* [Return to text.](#)

[109] *See Chevron U.S.A., Inc. v. National Resources Defense Council*, 467 U.S. 837 (1984). Under the *Chevron* test, a court first decides whether "Congress has directly addressed the precise question at issue." (Step I) ERNEST GELLHORN & RONALD M. LEVIN, *ADMINISTRATIVE LAW AND PROCESS IN A NUTSHELL* 81, 89 (1997). If so, the court must "give effect to the unambiguously expressed intent of Congress." *See id.* If, however, it decides the statute in question was "silent or ambiguous with respect to the specific issue," the court must then determine if the agency made a "reasonable interpretation" of the statute. (Step II) *See id.* It should be noted that *Chevron* doctrine is both less absolute and more complicated than this formula, standing alone, might suggest. *See id.* [Return to text.](#)

[110] Courts must decide if an agency's interpretation of a statute was "permissible," or as *Chevron* alternatively phrased it, "reasonable." Courts have often conducted the Step II analysis much as they approach the question of "reasoned decisionmaking" in deciding whether an agency action is "arbitrary and capricious." GELLHORN & LEVIN, *supra* note 109, at 81, 86. [Return to text.](#)

[111] *See National Mining Ass'n*, 145 F.3d at 1410. [Return to text.](#)

[112] *See id.* [Return to text.](#)

[113] *See id.* [Return to text.](#)

[114] 33 U.S.C. § 1344(a) (1994 & Supp. II 1996). Subsections 1344(b) and(c) also address the specification of disposal sites. [Return to text.](#)

[115] *See National Mining*, 145 F.3d at 1410. [Return to text.](#)

[116] *See id.* at 1406. [Return to text.](#)

[117] *See id.* at 1403-04, 1410. [Return to text.](#)

[118] *See id.*, at 1410; *see supra* note 20. [Return to text.](#)

[119] *Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897 (5th Cir. 1983). [Return to text.](#)

[120] *Id.* at 923; the court in *Avoyelles* limited its statement that redeposits may be considered additions to redeposits of dredged material. *See id.* [Return to text.](#)

[121] *See National Mining*, 145 F.3d at 1406. "[T]he activities in this case did not involve a "de minimis" disturbance; hence we have no reason to determine whether "de minimis" disturbances are exempted from the act." *Avoyelles*, 715 F.2d at 923. [Return to text.](#)

[122] *See Avoyelles*, 715 F.2d at 920-23. [Return to text.](#)

[123] "The term *fill material* means any material used for the primary purpose of replacing an aquatic area of dry land or of changing the bottom elevation of a waterbody. The term does not include any pollutant discharged into the water primarily to dispose of waste, as that activity is regulated under section 402 of the [CWA]." 33 C.F.R. § 323.2(e) (1998) (emphasis in original). [Return to text.](#)

[124] "[W]e do not believe that a decision whether there was a discharge of dredged material was necessary here, since we have concluded that there was a discharge of fill material." *Avoyelles*, 715 F.2d at 924. As one author has observed, "Thus, under *Avoyelles*, the CWA regulates activities in wetlands based on what is put into the wetlands, not what is taken out." Strand, *supra* note 74, at 10,218. [Return to text.](#)

[125] *United States v. M.C.C. of Fla*, 772 F.2d 1501 (11th Cir. 1985). [Return to text.](#)

[126] *See National Mining Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399, 1406 (D.C. Cir. 1998). [Return to text.](#)

[127] *See M.C.C.*, 772 F.2d at 1506. [Return to text.](#)

[128] The agencies have stated that sidcasting has "always been regulated under Section 404." Clean Water Act Regulatory Programs, 58 Fed Reg. 45,008, 45,013 (1993). However, this question is unsettled. In *United States v. Wilson*, 133 F.3d 251 (4th Cir. 1997), a three-judge panel of the Fourth Circuit divided on the question whether sidcasting is an "addition" under the CWA. *See Wilson*, 133 F.3d at 258-60 (opinion of Niemeyer, J); *see id.* at 272-75 (opinion of Payne, J.). Judge Luttig joined neither opinion. [Return to text.](#)

[129] *See Wilson*, 133 F.3d at 257, 259. [Return to text.](#)

[130] *Rybachek v. EPA*, 904 F.2d 1276 (9th Cir. 1990). [Return to text.](#)

[131] *See National Mining*, 145 F.3d at 1406. [Return to text.](#)

[132] *See Rybachek*, 904 F.2d at 1285. [Return to text.](#)

[133] *See National Mining Ass'n*, 145 F.3d at 1406. [Return to text.](#)

[134] *See id.*; *Rybachek*, 904 F.2d at 1285. [Return to text.](#)

[135] The Tulloch Rule reached incidental fallback by redefining the phrase "discharge of dredged material" to include "any addition, including any redeposit, of dredged material, including excavated material, into waters of the United States which is incidental to any activity, including mechanized landclearing, ditching, channelization, or other excavation." 33 C.F.R. § 323.2(d)(1)(iii) (1998). [Return to text.](#)

[136] The agencies stated that:

"[W]e do not view [a de minimis] exception as compelled by the [CWA]. [N]onetheless, the agencies believe that the better approach in this case is to maintain a narrow exception for those activities that have only a de minimis effect on waters of the U.S. This . . . will help improve the efficiency and effectiveness of the program by focusing limited agency resources on activities having more than inconsequential environmental effects."

Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008, 45,022 (1993). This statement, which offered the conventional justification for de minimis exemptions, may have been making a virtue of necessity. A Supreme Court ruling, made the year before the agencies published the Tulloch Rule, casts doubt on their authority to read this exemption out of the CWA. *See Wisconsin Dep't of Revenue v. William Wrigley, Jr., Co.*, 505 U.S. 214, 231 (1992). Evaluating the elimination of a de minimis exemption as a material issue in a tax case, the Court ruled that:

"[T]he venerable maxim *de minimis non curat lex* (the law cares not for trifles) is part of the established background of legal principles against which all enactments are adopted, and which all enactments (absent contrary indication) are deemed to accept . . . [I]t would be especially unreasonable to abandon normal application of the *de minimis* principle where [a statutory provision] operates in . . . stark, all-or-nothing fashion . . . ."

*Id.* [Return to text.](#)

[137] *See Regulatory Programs*, 58 Fed. Reg. 45,008, 45,017 (1993). [Return to text.](#)

[138] "[I]t is virtually impossible to conduct mechanized landclearing, ditching, channelization, or excavation in waters

of the United States without causing incidental redeposition of dredged material (however small or temporary) in the process." *Id.* [Return to text.](#)

[139] *See id.* [Return to text.](#)

[140] "[M]ost corps districts normally followed the practice of not regulating such activities so long as their discharges of dredged material were limited to *small-volume*, "incidental" discharges. Regulatory Programs, 58 Fed. Reg. at 45,013 (preamble to Tulloch Rule) (emphasis added). [Return to text.](#)

[141] The exemption applied to "any incidental addition, including reposit, of dredged material associated with any activity that does not have or would not have the effect of destroying or degrading an area of waters of the United States." 33 C.F.R. § 323.2(d)(3)(i) (1998). [Return to text.](#)

[142] "[A]n activity associated with a discharge of dredged material degrades [a U.S. water] if it has more than a de minimis (i.e., inconsequential) effect on the area by causing an identifiable individual or cumulative adverse effect on any aquatic function." 33 C.F.R. § 323.2(d)(5) . [Return to text.](#)

[143] Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008, 45,020 (1993). [Return to text.](#)

[144] 33 C.F.R. § 323.2(d)(3)(i)(1998). [Return to text.](#)

[145] "There has been widespread concern that many activities that are normally considered routine would be prohibited or made extremely difficult because of the complex regulatory procedures." LEGISLATIVE HISTORY (1977), *supra* note 34, at 897 (statement of Sen. Randolph, explaining purpose of section 404(f)(1) exemptions); *see* Power, *supra* note 12, at 504. [Return to text.](#)

[146] "New subsection (f) of section 404 provides that Federal permits will not be required for narrowly defined activities specifically identified in paragraphs (A)-(F) that cause little or no adverse effects either individually or cumulatively. To assure that the extent of these exempted activities will not be misconstrued, paragraphs (f)(1)(D) and (E) and (f)(2) provide common sense limitations to protect the chemical, biological, and physical integrity of the Nation's waters." LEGISLATIVE HISTORY (1977), *supra* note 34, at 420 (statement of Rep. Harsha). [Return to text.](#)

[147] "The drainages exemption is intended to put to rest, once and for all, the fears that permits are required for draining poorly drained farm or forest land of which millions of acres exist . . . ." *Id.* at 1042 (statement of Sen. Muskie); "[W]e are reluctant to draw any inference other than that Congress emphatically did not want to impede these bucolic pursuits." *National Mining Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399, 1405 (D.C. Cir. 1998); "Congress enacted in the 1977 amendments a delicate balance of exceptions that protected wetlands while permitting routine activities to go on unimpeded." *United States v. Huebner*, 752 F.2d 1235, 1241 (7th Cir. 1985). [Return to text.](#)

[148] Section 404(f)(1) exempts, for example, discharges from normal plowing and harvesting, as well as discharges caused by maintaining drainage ditches, repairing levees, or digging stock ponds and sedimentation basins. 33 U.S.C. § 1344(f)(1) (1994 & Supp. II 1996). Section 404(f)(1) exempts these discharges from the CWA's general prohibition, subject to two conditions. First, they must not violate the provisions of § 404(f)(2). *See id.* Second, they must not violate section 307 of the CWA , which prohibits toxic discharges. *See id.* [Return to text.](#)

[149] Section 404 (f)(2) provides, in pertinent part, that:

"Any discharge of dredged or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced, shall be required to have a permit under this section."

33 U.S.C. § 1344(f)(2) . [Return to text.](#)

[150] *See, e.g., United States v. Akers*, 785 F.2d 814 (9th Cir. 1986) (interpreting section 404(f)(2) to reach continuing

agriculture previously exempt under section 404(f)(1), because expansion through diking changed wetland hydrology); Huebner, 752 F.2d 1235 (holding that section 404(f)(2) "recaptured" digging in irrigation channels for purpose of restoring land used as cranberry bogs, before section 404(f) took effect, to that use). [Return to text.](#)

[151] See James T.B. Tripp & Michael Herz, *Wetland Preservation and Restoration: Changing Federal Priorities*, 7 VA. J. NAT. RESOURCES L. 221, 236-45 (1988); Kevin O'Hagan, Comment, *Pumping With the Intent to Kill: Evading Wetlands Jurisdiction Under Section 404 of the Clean Water Act Through Draining*, 40 DE PAUL L. REV. 1059 (1991). [Return to text.](#)

[152] See, e.g., *Avoyelles Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897, 925 n.44, 926 (5th Cir. 1983) ("[R]ead together, the two parts of section 404(f) provide a narrow exception for agricultural and silvicultural activities that have little or no adverse effect on the nation's waters."); Strand, *supra* note 74, at 10,226. [Return to text.](#)

[153] "The recapture principle should not be restricted to discharges that are exempted by section 404(f)(1). Any discharge that the Corps deems exempt on the ground that it is de minimis should be subject to permit requirements if the discharge is related to a change in water use pursuant to section 404(f)(2)." Tripp & Herz, *supra* note 151, at 238. [Return to text.](#)

[154] "If section 404(f)(2) is to be narrowly read to apply only to section 404(f)(1) exemptions, then the Corps' power to exempt discharges should also be limited to those enumerated in that provision. Conversely, if the Corps' power to exempt de minimis discharges extends beyond section 404(f)(1), the recapture mechanism of section 404(f)(2) should also be interpreted to extend beyond section 404(f)(1) to other discharges." *Id.* at 239. [Return to text.](#)

[155] The agencies adopted this broader view of section 404's authority for effects-based regulation: "[W]e believe that Section 404(f)(2) contradicts the argument that Congress intended to preclude EPA and the Corps from considering under Section 404 the effects of activities associated with discharges of dredged and fill material, such as mechanized landclearing, ditching, channelization, and other excavation." Clean Water Act Regulatory Programs, 58 Fed. Reg. 45,008, 45,012 (1993) (preamble to Tulloch Rule). [Return to text.](#)

[156] The Seventh Circuit ruled in *United States v. Huebner*, 752 F.2d 1235, 1240-41 (7th Cir. 1985) that Congress intended section 404(f)(1) to create only a narrow exemption to section 404's general permit requirement. The Fifth Circuit also interpreted subsection 404(f) narrowly in *Save Our Community v. United States EPA*, 971 F.2d 1155, 1165 & n.15 (5th Cir. 1992). In that case, the appellate court sharply criticized the district court's reading of section 404(f)(2), in the same case, to authorize effects-based regulation of a matter outside the scope of section 404(f)(1). See *id.* at 1240-41. The Fifth Circuit said that the district court had misread its decisions in *Avoyelles Sportsmen's League v. Marsh*, 715 F.2d 897 (5th Cir. 1983) and *Orleans Audubon Society v. Lee*, 742 F.2d 901 (5th Cir. 1984), in both of which it had construed subsection 404(f) narrowly. See *id.* [Return to text.](#)

[157] See ENV'T REP. (BNA, Inc.), Oct. 16, 1998, at 1212 (no title). [Return to text.](#)

[158] See *EPA Loss on Wetlands Excavation May Fuel Water Act Reauthorization*, INSIDE EPA, Oct. 9, 1998, at 18 [hereinafter *EPA Loss*]. [Return to text.](#)

[159] For example, the agencies urged the court to judge the Tulloch Rule's validity under the deferential standard of review that the Supreme Court has established for facial challenges to federal statutes. See *National Mining, Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399, 1407-08 (D.C. Cir. 1998). The court noted that the Supreme Court had never required a person challenging the facial validity of an administrative regulation to establish that it could not be valid under any set of circumstances. See *id.* Moreover, the court observed that the Supreme Court had at least once, in *Sullivan v. Zebley*, 493 U.S. 521 (1990), upheld a facial challenge to an administrative regulation despite its obvious validity under some circumstances. See *id.* [Return to text.](#)

[160] See *Reid v. Marsh*, 20 Env'tl. Rep. Cas. (BNA) 1337 (N.D. Ohio 1984). [Return to text.](#)

[161] "[Section 404] does not give the Corps authority to regulate . . . the dredging [itself]. Such activities may be governed only by § 10 of the Rivers and Harbors Appropriations Act. Rather, § 404 gives the Corps power to regulate

the dredging work only to the extent that it constitutes a 'discharge of dredged material.' Therefore, in processing an application for the channelization project the Corps should evaluate *only the effect of discharge resulting from the dredging activities and not the ultimate effect of proposed channel modification.*" *Id.* at 1342. (emphasis added). [Return to text.](#)

[162] See *National Mining Ass'n v. United States Army Corps of Eng'rs*, 145 F.3d 1399, 1405 (D.C. Cir. 1998). [Return to text.](#)

[163] See *supra* notes 28-35 and accompanying text. [Return to text.](#)

[164] See *EPA Loss*, *supra* note 158, at 18. [Return to text.](#)

### [III.](#) THE HOLDING IN *NATIONAL MINING*

[A.](#) *Incidental Fallback and the "Addition" Problem*

[B.](#) *Incidental Fallback in Case Law*

### [IV.](#) HOW THE TULLOCH RULE DEVELOPED

[A.](#) *The de Minimis Exemption of Incidental Fallback*

[B.](#) *The Section 404 "Recapture Clause" and Regulation by Effect*

### [V.](#) CONCLUSION

## BOOK REVIEW

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ENVIRONMENTAL LAW PRACTICE: PROBLEMS AND EXERCISES FOR SKILLS DEVELOPMENT. By Jerry L. Anderson and Dennis D. Hirsch. Carolina Academic Press: 1999.

An exasperated law professor once cried out during a particularly contentious classroom question and answer session: "No, no . . . we're getting way too practical now!"<sup>[1]</sup> If practicality is a flaw, then *Environmental Law Practice: Problems and Exercises for Skills Development* by Jerry L. Anderson and Dennis D. Hirsch will never be able to overcome its death knell of unapologetic practicality.<sup>[2]</sup> However, if practicality is sought as a tool for developing a student's ability to deal effectively with real world problems in environmental law, this volume should be one's guide.

In the jungle of environmental law,<sup>[3]</sup> this book serves to fill a gap previously unfilled. To introduce "students to the resources that environmental lawyers use and the activities in which they routinely engage."<sup>[4]</sup> Such an ambition is grand for a single volume, but this single volume does explain the rudimentary elements of environmental law practice clearly and concisely and in enough detail to permit the student to understand where to begin in attacking an environmental law issue. Several features are unique about this book. First, it explains environmental law from the views of public interest, government, and private practice attorneys. Second, the book challenges students to not only passively learn the law, but to act on that learning through thoughtful problems and exercises aimed at forcing students to put into practice what they have learned from all viewpoints. Finally, this book centers its lessons around the four most common settings in which an environmental lawyer can find one's self: environmental compliance; environmental enforcement; environmental litigation; and environmental policy.

## CHAPTER ONE: ENVIRONMENTAL COMPLIANCE

Chapter One introduces students to the basic research tools environmental lawyers must utilize to advocate on behalf of their clients and ensure their clients remain in compliance with the complex maze of statutory law and agency regulations. Specifically, Chapter One goes through a quick summary of "notice and comment" rulemaking and provides an in-depth introduction to the form and content of the Code of Federal Regulations. The centerpiece of Chapter One is a problem scenario that leads the student through the process of complying with the Clean Air Act's Prevention of Significant Deterioration Program.

In the context of this problem scenario, the authors explain federal statutes in the United States Code Annotated as the starting point for research on compliance with environmental laws and regulations. Next, the role of legislative history and an introduction to the U.S. Code Congressional and Administrative News is discussed to place the statute in the context of the process that it arose out of. Then the authors explain what a regulation is and provide examples of applicable regulations in the Code of Federal Regulations. Case law does get some treatment and it is at this point that the authors include *Alabama Power Co. v. Costle*<sup>[5]</sup> to show how the courts handle the interplay of statutes, legislative history, and agency regulations. Next the authors explain the value and give an example of a preamble statement in the Federal Register that accompanies a proposed rule. Finally agency guidance documents are identified and explained as a probable source of valuable information. Through the problem scenario of ensuring compliance with the Clean Air Act's Prevention of Significant Deterioration Program, the authors effectively sketch out all the commonly useful sources of information available to environmental lawyers working on such an issue.

Chapter One concludes with a broad discussion of an environmental lawyer's duties when counseling a client on an ambiguous legal issue. This discussion begins with an excerpt from a law review article on exactly this topic.<sup>[6]</sup> Next there is a brief recitation of some applicable ABA Model Rules of Professional Conduct. Chapter One closes with another excerpt from a law review article on the interplay of legal ethics, environmental law, and rules of professional conduct.<sup>[7]</sup> This final section of Chapter One does not lay out the law in a black letter manner, but introduces the student to applicable rules and thoughtful commentary on how those rules fit into an environmental law context. This approach challenges the student to actively participate in the discussion by completing the attending exercises and

problems, without being dogmatic in approach.

## CHAPTER TWO: ENVIRONMENTAL ENFORCEMENT

Chapter Two introduces the student to the process of enforcing environmental laws, from the perspective of the agency, the perspective of a private attorney who represents some entity against whom an enforcement action is being brought, and the perspective of a private attorney working in the public interest by bringing a private citizens' enforcement action. Though these three perspectives normally diverge, Chapter Two introduces students to the process of enforcement from each perspective and draws out the similarities and differences inherent in those divergent positions. Chapter Two provides enough of a brief, but thorough overview to allow the student to know where to begin when faced with an enforcement action, no matter which perspective the student, as a lawyer, may be advocating.

Chapter Two begins with a description of the agency enforcement process including: self-reporting obligations, inspections, different types of enforcement actions, and administrative practice considerations. Next, there is a discussion of the different sources of the law that will be useful to an environmental practitioner when dealing with an enforcement action. This includes a discussion of the EPA's different types of enforcement response policies and a brief discussion of how unpublished case opinions and administrative law opinions also play an important role in the research universe the student should be aware of regarding environmental enforcement. The first major division of Chapter Two ends with a discussion of the different issues that can arise in environmental enforcement including: defenses, penalty amounts, and other issues like public relations and the degree of agency discretion available. These issues are discussed in a common-sense manner, with the emphasis on putting this knowledge to work in practice.

Chapter Two also includes an extensive discussion on citizen suit enforcement of environmental laws. While the first major division of Chapter Two applied mostly to agency lawyers and private practice lawyers, this division of the chapter relating to citizens suits speaks directly to public interest lawyers. First the authors describe the process of information gathering for a large citizen suit enforcement action. Finally the discussion delves into the various issues that are common to citizen suits, including: pre-suit notice, requirements of diligent prosecution, standing issues, whether the defendant is "in violation," potential recovery, and issues particular to suits against the EPA or state agencies.

The subject matter of Chapter Two, environmental enforcement, could encompass many volumes in its own right, but the authors give environmental enforcement just enough coverage to make students aware of the basic process of enforcement from all three positions commonly found in an enforcement action. While not exhaustive in its coverage, Chapter Two does provide enough of an introduction to environmental enforcement to allow the student, as a lawyer, to understand how to begin the process of advocacy, no matter the position being advocated.

## CHAPTER THREE: ENVIRONMENTAL LITIGATION

In many ways environmental litigation is no different from any other litigation, but there are usually some specific types of litigation issues that arise in environmental litigation. To introduce students to those issues Chapter Three is divided into two principle parts. The first introduces students to issues that normally arise in Superfund litigation, one of the most common types of contemporary environmental litigation. The second part of Chapter Three introduces students to more common issues that can occur in environmental litigation. Again the litigation issues that are highlighted in Chapter Three can apply equally to public interest, government, and private practice attorneys. All potential student perspectives derive a benefit from the discussion.

The Superfund litigation discussion begins with a basic explanation of the Superfund remediation process. Next is a more detailed explanation of the Superfund liability scheme, including a detailed fact scenario that can be used by the student to critically think about and act on the basic explanation provided in the text. It is this detailed fact scenario that sets this book apart from others that strive to reach the same audience. The Shenandoah Superfund Site scenario is set out in great detail and every other facet of the chapter somehow brings the student back to examine the lessons of the text, in connection with that fact scenario. This active learning paradigm is what sets this book apart from others. The Superfund litigation issues highlighted are: section 107 liability, joint and several liability, consistency with the National Contingency Plan, choice of remedies, section 107(b) defenses, and statutes of limitations. The Superfund litigation discussion ends with an excerpt from a law review article that concisely explains Superfund litigation issues

in a way that perfectly sums up the authors' discussion.[\[8\]](#)

The remainder of Chapter Three is devoted to introducing the student to other important issues that frequently arise in environmental litigation. First, the authors use another law review excerpt[\[9\]](#) to explain the particular issue of successor liability in environmental litigation generally and in Superfund litigation in particular. Next, there is a brief explanation of issues involving municipal solid waste, followed by brief explanations of interim landowner liability and innocent landowner liability. Individual liability and section 106 penalties are also all discussed in the context of environmental litigation generally and in the context of Superfund litigation particularly. Chapter Three comes to a close with a brief explanation of Superfund cost allocation, including the Gore factors,[\[10\]](#) and settlement. The second part of Chapter Three explains issues that arise in environmental litigation, but still focuses that explanation on the context of Superfund litigation. However, the tenor of the explanation is not so geared toward Superfund litigation that the student could not apply that explanation to other types of environmental litigation. Chapter Three provides a brief, but thorough explanation of the issues that arise in Superfund litigation particularly and other types of environmental litigation generally.

#### CHAPTER FOUR: ENVIRONMENTAL POLICY

Chapter Four introduces the student to environmental policy and policymaking in the context of administrative rulemaking. The central focus of Chapter Four is to introduce the rulemaking process to the student in a way that provides an explanation of the public interest, government, and private practice attorney's roles in that rulemaking process. While a quick overview of "notice and comment" rulemaking was included in Chapter One, Chapter Four provides a detailed explanation of the "notice and comment" rulemaking process. This explanation of rulemaking is followed by an explanation of the various ways that a lawyer can enter the rulemaking process. Finally, Chapter Four, and the book as a whole, ends with a brief explanation of the evolving environmental justice movement.

Rulemaking is the central mechanism that a lawyer can use to effectuate a client's wishes in shaping environmental policy.[\[11\]](#) Chapter Four provides a detailed explanation of the federal informal, or "notice and comment," rulemaking process. This explanation begins with discussion of the requirements for the EPA to publish a notice of proposed rulemaking. Next there is an explanation of the public comment process, followed by an explanation of the requirements for the final agency rule. Beyond this basic outline of "notice and comment" rulemaking, the authors also provide the student with a brief explanation of how environmental lawyers can use an advanced notice of proposed rulemaking to their advantage and how the process of negotiated rulemaking works. The rulemaking process discussion ends with an explanation of how some environmental statutes provide for additional rulemaking procedures. Rulemaking is the elemental tool for the environmental lawyer involved in environmental policy making. The knowledgeable environmental lawyer, however, needs to know how to involve one's self in the rulemaking process.

Chapter Four next explains how the environmental lawyer can become involved in the rulemaking process. To begin, the authors provide three ways that a private practice or public interest lawyer can initiate rulemaking in the EPA. A private practice or public interest lawyer can sue the agency to enforce environmental statutory deadlines. Or, a private practice or public interest lawyer can petition the EPA to issue a rule to fill a perceived need. Or, a private practice or public interest lawyer can sue the EPA to enforce "notice and comment" rulemaking requirements. For this last option, the authors explain four exceptions to "notice and comment" rulemaking procedures: (1) the exception for "interpretive rules," (2) the exception for "general statements of policy," (3) the exception for rules of "agency organization, procedure, or practice," and (4) the "good cause" exception.[\[12\]](#) The authors' explanation of involvement in the rulemaking process ends with a admonishment to private practice or public interest lawyers to advocate clients' interests at the earliest stage of the rulemaking process, because once the rulemaking process gets going the EPA becomes too entrenched in its own position to be seriously swayed by any amount of lawyering. However, the authors also explain the final agency rule can be challenged in court after its final promulgation by the agency and briefly sketch out that process.

Chapter Four and the book is brought to a conclusion with an introduction to the environmental justice movement. This brief overview of environmental justice quickly touches on the facts of environmental discrimination, federal actions that promote environmental justice, and environmental justice litigation. This introductory explanation of the environmental justice movement barely lasts four pages. The remainder of Chapter Four is devoted to the EPA's Interim

Guidance for Investigating Title VI Administrative Complaints Challenging Permits,<sup>[13]</sup> followed by a set of problems meant to get the student to think critically about environmental discrimination and the environmental justice movement.

### CRITIQUES AND CONCLUSIONS

As a whole the book achieves the goals of the authors, to introduce students to the resources environmental lawyers use and the activities they routinely engage in. However, the book does suffer from several weaknesses. The most obvious weakness is the lack of detailed discussion on various issues brought to the fore. The explanations and discussions the book does engage in are thorough, given their brevity, but the student is left with only a thumbnail sketch of issues. For a book that only strives to introduce these issues to students, a thumbnail sketch may be sufficient. However, the nature of the problems and exercises the authors use in the book often require more knowledge or information than is available in the text. The problems and exercises are frequently more involved than the text adequately provides for.

If this book is used in an advanced environmental law class, where students already have an underlying knowledge of the basic resources of environmental law, then it will be a valuable resource. For knowledgeable students the problems and exercises will be an interesting and realistic way to put into practice what they already know and what the text has added to that knowledge. However, if this book were used in an introductory environmental law class, then the problems and exercises may overwhelm students because of their detail and complexity. Again, the explanations of various issues in the book are brief, but thorough. For the advanced environmental law student, these explanations will suffice. For beginning students, however, the explanations may not provide enough black letter law to make the practice tips, problems, and exercises truly instructional.

The problems and exercises in the book are what the authors use to tie the legal explanations together with real-world practicality. The practicality of this book is its hallmark. In the contemporary field of legal education where there is a concern for being too practical, this book is welcome convergence of concise explanations of environmental legal issues and practicality.

[1] To protect the innocent, the "exacerbated professor" shall retain his anonymity. [Return to text.](#)

[2] See JERRY L. ANDERSON & DENNIS D. HIRSCH, ENVIRONMENTAL LAW PRACTICE: PROBLEMS AND EXERCISES FOR SKILLS DEVELOPMENT (Carolina Academic Press 1999). [Return to text.](#)

[3] Angus Macbeth, *Forward to* JERRY L. ANDERSON & DENNIS D. HIRSCH, ENVIRONMENTAL LAW PRACTICE: PROBLEMS AND EXERCISES FOR SKILLS DEVELOPMENT at xiii (Carolina Academic Press 1999) ("[E]nvironmental law has become a jungle. Or, if you prefer a different metaphor, an excruciating maze. Or a paper palace . . ."). [Return to text.](#)

[4] JERRY L. ANDERSON & DENNIS D. HIRSCH, ENVIRONMENTAL LAW PRACTICE at xix (1999). [Return to text.](#)

[5] 636 F.2d 323, 394-98 (D.C. Cir. 1979). [Return to text.](#)

[6] See David Dana, *Environmental Lawyers and the Public Service Model of Lawyering*, 74 OR. L. REV. 57, 58-62 (1995). [Return to text.](#)

[7] See J. William Futrell, *Environmental Ethics, Legal Ethics, and Codes of Professional Responsibility*, LOY. L.A. L. REV. 825, 834-35 (1994). [Return to text.](#)

[8] See Jerry L. Anderson, *The Hazardous Waste Land*, 13 VA. ENVTL. L.J. 1 (1993). [Return to text.](#)

[9] *Id.* [Return to text.](#)

[10] See, e.g., *Environmental Transp. Sys., Inc. v. ENSCO, Inc.*, 969 F.2d 503, 508-09 (7th Cir. 1992) (explaining the "Gore factors" provide a non-exhaustive, but valuable roster of equitable apportionment considerations). [Return to text.](#)

[11] JERRY L. ANDERSON & DENNIS D. HIRSCH, ENVIRONMENTAL LAW PRACTICE at 193-94 (1999). [Return to text.](#)

[12] It is in this explanation of the exceptions to "notice and comment" rulemaking procedures that the authors rely most heavily on case law. *See, e.g., Tabb Lakes, Ltd. v. United States*, 715 F. Supp. 726 (E.D. Va. 1988), *aff'd* 885 F.2d 866 (4th Cir. 1989); *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, 998 F. Supp. 946 (N.D. Ill. 1998); *McLouth Steel Prods. Corp. v. Thomas*, 838 F.2d 1317 (D.C. Cir. 1988); *Brock v. Cathedral Bluffs Shale Oil Co.*, 796 F.2d 533 (D.C. Cir. 1986); *Department of Labor v. Kast Metals Corp.*, 744 F.2d 1145 (5th Cir. 1984); *Batterton v. Marshall*, 648 F.2d 694 (D.C. Cir. 1980). [Return to text.](#)

[13] *See* 40 CFR § 7.10 *et seq.* (1997). [Return to text.](#)

CHAPTER TWO: ENVIRONMENTAL ENFORCEMENT

CHAPTER THREE: ENVIRONMENTAL LITIGATION

CHAPTER FOUR: ENVIRONMENTAL POLICY

CRITIQUES AND CONCLUSIONS

## 1999 RECOMMENDED WEB SITES FOR OCEAN AND COASTAL LAW

Amy Voigt\*

### I. Introduction

The United Nations General Assembly declared 1998 the International Year of the Ocean in order to raise awareness of the oceans and the need to protect and conserve our marine resources through actions at the global, regional, and national levels. The oceans of the world are vital to all yet belong to no one. It touches every aspect of our lives from commerce to recreation to medicine. As Earth becomes less about national and regional divisions and more like one global village, due in great part to the advent of the World Wide Web, governments, industry, and individuals alike have come to realize that many of the issues we face in our own backyard others around the world face as well. In order to prevent a few from taking control of a resource of the many and to prevent a "tragedy of the commons," international law has been created in the form of the Convention on the Law of the Sea. It is laws such as this on a global scale and interpretations of it on a national scale that has caused the proliferation of this important, and often hotly contested, body of jurisprudence.

For a few years now, this *Journal* has made a commitment to helping its readers utilize the Internet as an integral and economically feasible way to conduct legal research on all kinds of environmental and land use topics. With the enormous scope of this area of the law, however, it becomes necessary to narrow the field a bit in order to better explore what information the Internet has to offer. In recent observance of the International Year of the Ocean in 1998 and the growing importance of our global seas and shores, this review has compiled a variety of recommended web sites focused on this area of law and policy.

The addresses are categorized under various topic areas for easy reference. These topic areas are Federal Government Agencies and Organizations, Florida Government Agencies and Organizations, Libraries and Directories, Magazines and Online News Services, Miscellaneous Oceans and Coastal Sites, Non-Profit and Other Activist Organizations, Non-U.S. Agencies and Information, Other State/Regional Agencies and Organizations, and Research Facilities, Organizations, and Projects. With the ever-growing popularity of the Internet as a forum of communication and shared knowledge, the number of web sites available are astronomical. Therefore, this list is far from inclusive but is meant instead to give a flavor for what is accessible through the Internet.

### II. Federal Government Agencies and Organizations

- National Marine Fisheries Service (NMFS) - NOAA Fisheries

URL: <http://www.nmfs.gov>

The NMFS provides services and products to support domestic and international fisheries management operations, fisheries development, trade and industry assistance activities, enforcement, protected species and habitat conservation operations, and the scientific and technical aspects of NOAA's marine fisheries program. This site contains links to specific projects that are going on in the NMFS along with access to the eight regional fishery management councils and the different science centers around the United States. In addition, links to the resource laws that guide the NOAA fisheries.

- National Ocean Service

URL: <http://www.nos.noaa.gov>

This agency advocates for coastal and ocean stewardship through partnerships with scientific, management, and public policy groups. This site is their homepage, which contains links to educational programs, scientific data such as nautical charts, and information on the national marine sanctuaries and dealing with oil and chemical spills. This is an excellent site for updates on current events and news.

- National Oceanic and Atmospheric Administration (NOAA)

URL: <http://www.noaa.gov>

This is the main page for NOAA and is your springboard to all the agencies and offices under their umbrella. This includes the National Environmental Satellite Data and Information Service (NESDIS); the National Weather Service (NWS); the Office of Oceanic and Atmospheric Research (OAR); the National Ocean Service; and the National Marine Fisheries Service (NMFS). These individual agency sites will be discussed in more detail later.

Along with these listings, NOAA gives you links to relevant legislative & public affairs and highlights special events and announcements affecting the air and the sea, including NOAA's State of the Coast report which acts as a report card on the nation's efforts to advance responsible stewardship of the oceans and coastal areas.

- Tropical Prediction Center/National Hurricane Center

URL: <http://www.nhc.noaa.gov>

This is a necessary bookmark for anyone living in a coastal region of the United States or abroad. The National Hurricane Center provides satellite imagery, aircraft reconnaissance pictures, historical data on hurricanes and cyclones along with updated advisories during storm seasons in both the Atlantic/Gulf region and the East Pacific region.

- United States Coast Guard

URL: <http://www.uscg.mil>

The U.S. Coast Guard's area of responsibility is defined by the U.S. Exclusive Economic Zone (EEZ) encompassing 2.5 million square miles of sea and 90,000 miles of coastline. This site contains all sorts of great info about the enforcement, jurisdiction, and responsibilities of the U.S. Coast Guard and the links jump to everything from marine safety and environmental protection to an award-winning clearinghouse on recreational boating safety regulations, news, and issues.

- U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds

URL: <http://www.epa.gov/OWOW>

This is a great informational site. It not only covers ocean and coastal protection issues such as pollution, reef protection, and dredging, but also contains links to important marine topics such as wetlands, estuaries, and restoration projects. Each link describes educational and scientific programs and ongoing news within that area of study as well as how to get in touch with administrators in each field.

- United States Federal Maritime Commission (FMC)

URL: <http://www.fmc.gov>

The FMC is an independent government agency who is responsible for the regulation of shipping in the foreign trades of the United States. This includes protecting U.S. shippers and carriers from restrictive or anti-competitive foreign rules and regulations, piracy by foreign flag carriers, and maintains electronic tariff filings on all carriers operating between the United States and other countries.

This site includes links to current complaint filings, Commission rules, news releases, and most notably the Commission's new final rules that will be effective May 1, 1999.

- United States Maritime Administration

URL: <http://www.marad.dot.gov>

This site is a good way to learn about and keep up with the U.S. merchant marines—a major participant in domestic and foreign waterborne commerce. Links from this page include the regulations governing the U.S. Maritime Administration and publications from the Administration.

- United States Geological Survey (USGS) Coastal and Marine Geology Program

URL: <http://marine.usgs.gov>

Their mission is to investigate geologic issues of coastal and marine areas under the themes of Environmental Quality and Preservation, Natural Hazards and Public Safety, Natural Resources, and Earth Sciences Information and Technology.

This page includes links to the 5-year national plan for geologic research on issues affecting the nation's coastal and marine realms; current research projects of the Marine Geology Program; listings for related research centers; and the Coastal and Marine Program newsletter, *Soundwaves*.

### III. Florida Government Agencies and Organizations

- Florida Coastal Management Program (FCMP)

URL: <http://www.dca.state.fl.us/ffcm>

The FCMP is Florida's lead agency on state coordination of governmental activities related to the protection, preservation, and development of Florida's coastal resources.

This site contains a link to the Florida State Clearinghouse, which circulates applications for federal activities, including federal permits and funding, to government agencies that have statutory authority over some part of the activity. This is a good site for those who want information on projects within the state of Florida and the progress of the necessary permits. Also, the public commenting process for each permit is explained. Please note this site is still under construction so be patient for a little while longer.

- Florida Department of Environmental Protection, Bureau of Beaches and Coastal Systems

URL: <http://www2.dep.state.fl.us/water/beaches>

This site provides access to Bureau rules, fees, publications, and various types of data and technical reports in an easy to use PDF format and Microsoft Word format. In the coming months, Coastal GIS data will be added but for now there is plenty to keep the interested coastal watcher busy. This includes links to DEP's Beach Erosion Control Program, Coastal Construction Control Line Permitting Program, shoreline surveying activities, and general research analysis studies.

It's not an outstanding springboard site, but it does contain a lot of useful information

- Florida Department of Environmental Protection, Division of Marine Resources

URL: <http://www.dep.state.fl.us/marine>

Includes links to its five bureaus and to the director of the division, which is always helpful. The best services offered are the links to the Bureau of Marine Resource Regulation and Development and the Office of Fisheries and Assistance Services.

This is a good site for practical use by fishermen or anyone actively involved in the industry, however it is not very good for any extensive research.

- Florida Game and Fresh Water Fish Commission

URL: <http://fcn.state.fl.us/gfc/gfchome.html>

An informative and easy to use web site containing some excellent information on the Florida panther, the state animal, as well as general sections for the casual nature watcher and the avid hunter on news, viewing areas, seasons, trails, and the like.

In their links section, there are links to other wildlife resource agencies in every other state in the Union, other federal agencies, other Florida agencies, various wildlife and hunting links, and non-profit organizations.

- Florida Marine Fisheries Commission

URL: <http://www.dep.state.fl.us/mfc>

Note: This URL will be changing in the near future due to the unification of the Marine Fisheries Commission and the Game and Fresh Water Fish Commission to form the Fish and Wildlife Conservation Commission-so be watching.

The best part about this website is its related links page. This is a great page to use to access any of the other Florida marine regulatory agencies, commercial fishing groups and organizations, nationwide fisheries commissions, recreation activities, and sportsman magazines.

- Florida Water Management Districts

URL: <http://fcn.state.fl.us/nwfwmd> (Northwest Florida)

<http://www.srwmd.state.fl.us> (Suwannee River)

<http://sjr.state.fl.us> (St. Johns River)

<http://www.swfwmd.state.fl.us> (Southwest Florida)

<http://www.sfwmd.gov> (South Florida)

These sites are listed together because each is very area specific and some are not very extensive. The most informative of these are the South Florida and St. Johns sites.

- Florida's Wetlands Evaluation & Delineation Section

URL: <http://www2.dep.state.fl.us/weds/weds.html>

The site is provided by Florida's Department of Environmental Protection and is a main access point to information on Florida's wetlands. Information includes what a Florida wetland is and how they are delineated along with access to publications and regulations.

Provides links to sites dealing with the classification of plants and soils, the study of hydrology, and the study of wetlands and wetland policy.

#### IV. Libraries and Directories

- Cambridge Scientific Abstracts: Environmental RouteNet

URL: <http://www.csa.com/routenet/newaccess.html>

You can either subscribe to this service or access it as a guest, which is what the address above is used for. Either way, this is a clearinghouse of information news, periodicals, etc. dealing with all sorts of environmental issues, including oceans and coastal issues.

This site is *very* user friendly and easy to maneuver. None of the resources are readily accessible online, unfortunately, but you are able to search for relevant texts online and then find out how to order them from Cambridge.

- Centre for Maritime and Regional History

URL: <http://www.fimus.dk/idxeng.htm>

This is a site based in Denmark and can be read in English or Danish. It is basically a clearinghouse of sorts on the study of maritime history with special fields in coastal communities of the North Atlantic, the North Sea, and the Baltic from the Middle Ages to the present. This web page is recommended for anyone interested in information on international fisheries and marine politics and issues.

- Council on Ocean Law: UNCLOS pages

URL: <http://www.oceanlaw.org/index.html>

This web site is primarily a reference center, document library, and guide to information related to the development and application of ocean law, including the United Nations Convention on the Law of the Sea (UNCLOS), its status and application, the U.S. positions and actions with regard to the Convention, and ocean policy issues in the United States and other countries.

It gives links to the 1982 UNCLOS, the 1994 Agreement regarding the UNCLOS, and the Agreement on Straddling Stocks along with other great links. This site is still a work in progress and is gladly taking suggestions to make it better.

- Intergovernmental Oceanographic Commission

URL: <http://ioc.unesco.org/iocweb>

The objectives of the IOC include developing and facilitating international environmental programs to study global oceans, providing international leadership in planning and establishing an operational global ocean observing system, and lending assistance and education for global ocean observation programs.

Their lead page gives IOC headlines for the week on everything from research projects to upcoming symposiums in the field. There is also access to EURASLIC-Directory of European Aquatic Science Libraries and Information Centres. It is fairly small, but it can be searched by library or by subject within a variety of mediums.

- National Wetlands Inventory

URL: <http://www.nwi.fws.gov>

This site is sponsored by the U.S. Fish and Wildlife Service, Division of Habitat Conservation, and was created to generate information about the characteristics, extent and status of the Nation's wetlands and deepwater habitats. The page includes information on maps, products and services, publications, and even a Q & A page where you can ask "Dr. Wetland" all you pressing wetland questions.

- NOAA Coastal Services Center Coastal Information Directory

URL: <http://www.csc.noaa.gov/CID>

This is a general directory that searches a variety of databases and libraries throughout the United States for descriptions of coastal data, information, and products. Ways to search include by subject keyword or by state.

- NOAA Seattle Regional Library

URL: <http://www.wrclib.noaa.gov>

This is labeled as an index to desktop resources for the Northwestern United States through the University of Washington and NOAA's Western Regional Center. Because this is a NOAA library, it contains information on both oceanography and fisheries biology and atmospheric sciences. A very convenient and fairly extensive research library.

- Ocean Law and Policy

URL: <http://www.sils.org/find-ocean.htm>

This is a resource library sponsored by the Society of International Law in Singapore. It is very informative and contains links to UN organs; texts of major international instruments dating back to 1946; institutions in Singapore and through Asia, the Pacific, and the United States; and journals and yearbooks on ocean law and policy. A definite bookmark for anyone with international oceans law development.

- Oceanography and Earth Science Institutions Directory

URL: <http://scilib.ucsd.edu/sio/inst/index.html>

One of the most extensive directories I've seen on the topic. It provides many U.S. links, admittedly biased toward California and the Pacific coast, but these include federal agencies, California State agencies, U.S. non-governmental institutions and coordinating bodies, and non-U.S. and international institutions and coordinating bodies.

Another definite bookmark for international and domestic oceans and coastal policy and research.

- Ocean-Science Related Acronyms

URL: <http://toast.pmel.noaa.gov/admin/scripts/acronyms.plx>

Sponsored by the Pacific Marine Environmental Laboratory, this site is very handy for those of us who come across an acronym that we either do not know what it stands for or what the organization does. This search page provides the answers to both of these questions and will always be useful with the array of new groups popping up all the time.

- The WWW Virtual Library: Fish

URL: <http://www.actwin.com/WWWVL-Fish.html>

This site is a springboard for finding information and resources on aquariums as a hobby, fish biology (ichthyology), aquatic environmentalism, and sport fishing.

- The WWW Virtual Library: Oceanography

URL: <http://www.mth.uea.ac.uk/ocean>

An outstanding clearinghouse on oceanography research. You can search by subject heading, geographical location, and organization as well as find links to marine study societies, publications, and upcoming conferences.

## V. Magazines and Online News Services

- Beachcombers Alert!

URL: <http://www.beachcombers.org/frmain.htm>

This is a newsletter put out by the Beachcombers and Oceanographers' International Association and provides pictures and clippings on the wide variety of debris that end up on U.S. shores. Quite an eye-opening sight.

- International Marine Science Newsletter Newsroom

URL: <http://ioc.unesco.org/iocweb/news/newsroom.htm>

This is a publication of the Intergovernmental Oceanographic Commission (IOC) and has over fifty news stories at a time on its page that can be downloaded on oceans and coastal developments in countries all around the globe. No subscriptions required.

- Sea Technology Magazine

URL: <http://www.sea-technology.com>

This magazine comes both in electronic and print form and is the ocean marine industry's authority for ocean design, engineering, and applications of equipment and services. It's unclear if the issues are available online every month, but this month it is, so check it out. If you like what you see, subscriptions are available.

- Year of the Ocean 1998

URL: <http://www.enn.com/yoto>

The Environmental News Network put this site together, which updates its news page just about every weekday with great information from around the world and information on ocean and marine exhibits and conferences.

Links involve the ocean's effects on everything from commerce to arts and entertainment. This is a really great site to use to keep current on news and information about the marine environment.

## VI. Miscellaneous Oceans and Coastal Sites

- The Coastal Advocate

URL: <http://cyboard.com/CoastalAdvocate/index.html>

The Coastal Advocate is a lobbying firm that provides consulting and lobbying services to coastal interests on the Atlantic and Gulf coasts. It serves property owners, business firms, and communities along the entire East Coast, primarily in New Jersey and Florida.

This is a useful page for those groups that may need advocacy help on a local or state level and can be joined online.

- Ocean Nutrition Canada

URL: <http://www.ocean-nutrition.com/oceannutritioncanada/index.htm>

For all you health buffs out there, this is the page for Ocean Nutrition Canada, an Atlantic seacoast company that specializes in research, development, and production of marine based health and nutritional products. Health supplements and other products can be ordered online and the recipe bank is a definite plus.

- Personal Watercraft Industry Association

URL: <http://www.pwia.org>

PWIA was formed in 1987 as part of the National Marine Manufacturers Association. Its goals are to promote safe and responsible operation of personal watercraft and to work with federal, state, and local agencies that have regulatory responsibilities for recreational boating.

It includes links on model legislation, law enforcement efforts, environmental protection and safety education, and "hot" issues in the personal watercraft industry.

## VII. Non-profit and Other Activist Organizations

- Center for Marine Conservation (CMC)

URL: <http://www.cmc-ocean.org>

The CMC is a non-profit organization dedicated solely to protecting ocean environments and conserving the global diversity of marine life as well as the promotion of citizen advocacy of these issues. This site gives an explanation of what the CMC is, links to their press releases, and an outline of the organization's platform and their action plan.

This is great for the citizen advocate who wants to get involved in ocean and coastal issues and includes e-petitions and membership opportunities.

- Marine Conservation Biology Institute

URL: <http://mcbi.org>

The Marine Conservation Biology Institute is a non-profit organization based in Washington dedicated to safeguarding life in the sea by advancing the multidisciplinary science of marine conservation biology. This group holds workshops on emerging marine conservation issues, conducts lectures at various universities and legislative bodies, organized the first symposium on Marine Conservation Biology, and releases articles on marine conservation issues.

Relevant links include monthly updates on emerging developments in the field and interesting factoids on the marine

environment.

- Ocean Voice International (OVI)

URL: <http://www.ovi.ca>

OVI is a non-profit environmental organization based in Canada whose main goals are to advocate for responsible ocean use and maintenance of biodiversity, specifically coral reefs. This page includes links to some of the group's past projects, information on how you can join, and details on how to obtain a subscription to their publication, *Seawinds*.

- San Diego Oceans Foundation

URL: <http://www.sdoceans.org/findex.htm>

The San Diego Oceans Foundation is a non-profit organization that advocates for education and responsible use of the oceans in the San Diego and California area. Some of the interesting links are to ongoing projects the Foundation is working on along with all sorts of great info on the boating, fishing, and diving scenes in the San Diego area.

- Save Our Seas

URL: <http://planet-hawaii.com/sos>

Since Hawaii is completely made up of islands, its coastal environment is of high priority. This site contains all sorts of updates on Hawaiian reef conditions and campaigns to protect the coral reefs and marine life in the Hawaiian Islands.

Available links include President Clinton's executive order on coral reefs and a wealth of websites on the celebration of the 1998-Year of the Ocean.

## VIII. Non-U.S. Agencies and Organizations

- Canadian Department of Fisheries and Oceans

URL: [http://www.dfo-mpo.gc.ca/home\\_e.htm](http://www.dfo-mpo.gc.ca/home_e.htm)

The main areas this department covers are marine safety/environmental protection and conservation/sustainable resource use. This is an excellent springboard site into information on Canadian regulations and governmental programs in this area. The links of interest page gives the user access to the Canadian governmental agencies in this area, fisheries and oceans related sites, and other Canadian environmental sites.

This page is available in English or French.

- Environment Australia

URL: <http://kaos.erin.gov.au/erin.html>

This particular address is for the main search page, which contains a wealth of information on Australian environmental policy and projects. A very simple pull-down menu allows you to search any number of environmental topics including "Coasts and Marine" issues.

The links provided here give access to both governmental and non-governmental agencies along with general research information. This is a great site for those seeking a springboard into Australian environmental policy.

- Ocean and Law of the Sea Home Page

URL: <http://www.un.org/Depts/los>

This page is the official site for information and documents related to UNCLOS and is sponsored by the United Nations, Division for Ocean Affairs and the Law of the Sea. Links from this site include international organizations and institutions connected with the Convention, current press releases, and tribunal procedures and cases appearing before the International

Tribunal for the Law for the Sea.

- Oceans Conservation

URL: <http://www.oceansconservation.com/title/title.htm>

This site is affiliated with Canada's Department of Fisheries and Oceans and its areas of focus include information on marine protected areas, integrated management, and marine ecosystem health. Also available is a database on Canada's Oceans Act, which delineates and provides guidance for managing Canada's EEZ, and provides access to other statutory acts and regulations governing ocean commerce and conservation.

## IX. Other State and Regional Agencies and Organizations

- The California Resources Agency Wetlands Information System

URL: <http://ceres.ca.gov/wetlands>

This page is a compilation of public and private sector information including maps; environmental documents; agency roles in wetlands management, restoration, and mitigation activities; regulatory permitting and wetland policies.

- Cleanup, Spill Response, and Tank Programs

URL: <http://www.deq.state.or.us/wmc/cleanup/clean.htm>

This site is sponsored by the Oregon Department of Environmental Quality, Waste Management and Cleanup Division and is the site for information on all sorts of procedures, regulations, and news on oil and chemical spills off the coast of Oregon. It contains links to their projects on site and spill response and other environmental issues.

- Georgia Coastal Resources

URL: <http://www.ganet.org/dnr/coastal>

This is a thorough general springboard site for information and programs dealing with the education and protection of its coastal and marine life, courtesy of Georgia's Department of Natural Resources.

- Oregon Department of Fish and Wildlife

URL: <http://www.dfw.state.or.us>

This state agency's page nicely laid out and easy to maneuver style makes gaining access to information simple. It includes links to general information on fish and wildlife in the area as well as education efforts, research projects, and current events. From this site users can jump to other related Oregon agencies such as the Oregon Marine Board and the Oregon Resources Department.

- Puget Sound Water Quality Action Team

URL: [http://www.wa.gov/puget\\_sound](http://www.wa.gov/puget_sound)

The Action Team is a sub-agency of the Governor's office and is made up of the heads of ten state agencies, a city and a county representative, a representative of federally recognized tribes, and others. Its top priority is developing the work plan that will guide protection of Puget Sound over the next two years.

Includes links to the Puget Sound Water Quality Protection Act; the Work Plan; their publication; and information on education and news events.

## X. Research Facilities, Organizations, and Projects

- Alfred Wegener Institute for Polar and Marine Research

URL: <http://www.awi-bremerhaven.de/index.html>

This is the site of Germany's leading institute for polar and marine research. Their work and this site are focused on research of the ocean-ice-atmosphere system, polar communities, and the geological history of the polar continents and seas. There are links to the various branches of the Institute on geosciences, biology, and oceanic and atmospheric physics.

- Caribbean Marine Research Center (CMRC)

URL: <http://www.cmrc.org>

The CMRC is an independently owned research facility on Lee Stocking Island, Bahamas, a privately owned island. Recently, the facility became a NOAA National Undersea Research Center.

This is a very user-friendly site. The main page has a picture map that you can surf from and at the bottom of each link page is the same map to keep searching easy. Some of the links include info on specific and general projects at the facility along with ways for scientists to find out how they can use the facility. An excellent site for scientific info on the biodiversity of Florida and the Caribbean.

- CSIRO Division of Marine Research

URL: <http://www.marine.csiro.au>

Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) created its Marine Research Division in 1997 and has the responsibility for maintaining 16.1 million square miles of marine resources. This site lists recent press releases on news related to the division's jurisdiction as well as offering information on the activities of their research vessels, products and services offered by the division, and how to contact various CSIRO administrators.

- The French Institute of Research and Exploitation of the Sea

URL: <http://www.ifremer.fr/anglais/institut/index.htm>

IFREMER is a French research facility under the auspices of the Ministries of Research and Technology, Fisheries, and Equipment and Transport. This site, available in both French and English, has links to the marine programs undertaken by the facility in ecosystem modeling, aquaculture, and ocean engineering to name a few. Links are provided to all of the Institute's facilities across France.

- Joint Oceanographic Institutions (JOI)

URL: <http://www.joi-odp.org>

The JOI is a consortium of U.S. academic institutions on research planning and management of the ocean sciences. Managed institutions include the international Ocean Drilling Program (ODP), the U.S. Science Support Program (USSSP), the SeaNet Planning Office, and the Secretariat for the Nansen Arctic Drilling Program. This site includes links to its individual member institutions, a list of their various publications, and a variety of related academic marine colleges and foreign ODP sites.

- Monterey Bay Aquarium Research Institute

URL: <http://www.mbari.org>

A main focus of this site is developing state-of-the-art technology to improve scientific study of the oceans. It gives updates of its current research vessels along with current news on its technological developments.

- Mote Marine Laboratory

URL: <http://www.marinelab.sarasota.fl.us>

Located in Sarasota, FL, this is an independent, non-profit research organization and much of the lab's efforts are directed toward the Southwest Florida coastal region. There are explanatory links to many of its ongoing projects including its Dolphin Research Program, shark research, sea turtle and marine mammal research and conservation, and manatee research.

- National Undersea Research Center

URL: <http://www.uncwil.edu/nurc>

Located at the University of North Carolina at Wilmington, this is the overseer for the six regional National Undersea Research Centers, of which the Caribbean Marine Research Center is one. Links to each can be found here along with general information on ocean and coastal science and technology. A link is in the works to provide an online catalog to all of the Centers' publications.

- Office of Naval Research (ONR)

URL: <http://www.onr.navy.mil>

The ONR coordinates and promotes the science and technology programs of the U.S. Navy and Marine Corps through universities, government laboratories, and non-profit and for-profit organizations. This site gives an inside look at the two military organizations and protocol to conduct scientific research including how to submit proposals, work on grants and contracts, and provides links to relevant regulations.

- Tampa Bay Estuary Program

URL: <http://www.tbep.org>

This page is geared toward those who are practitioners and advocates of and for the Tampa Bay. It contains up to date information on the state of the bay, the goals and research programs of the Estuary Program and what it has accomplished so far. A good site for the individual marine watcher on how they can get involved in preserving this one-of-a-kind ecosystem.

- Virginia Institute of Marine Science (VIMS)

URL: <http://www.vims.edu>

This is an academic program sponsored by the College of William and Mary that is not linked to the JOI site, but is worth mentioning if interested in doing marine research. It contains a fairly good library with access to a wide array of medical and scientific indexes as well as general reference books and VIMS publications. The best information available here is that of the Virginia/Atlantic area.

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1. G.A. Res. 131, U.N. GAOR 2d Comm., 49th Sess., 92d plen. mtg. at 12, U.N. Doc. A/RES/49/131 (1994).
2. United Nations, Public Inquiries Unit, U.N. Launches Expanded Internet Site on International Year of the Ocean, U.N. Doc. PI/1075 SEA/1590 (1998).
3. Notwithstanding any fees applicable for Internet access.