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Cover Page Footnote

The author wishes to thank Professor Dave Markell fo rhis helpful comments on earlier drafts, and Jim Alves for his time and insight into the issue of TMDLs.

FLORIDA'S IMPAIRED WATERS RULE: IS THERE A "METHOD" TO THE MADNESS?

CYNTHIA D. NORGART*

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I. INTRODUCTION

The Clean Water Act ("CWA") recently celebrated its 30th anniversary. Since the early 1970s, lawmakers have been conscious of the significant threat of pollution in our nation's waters, and have worked with environmentalists and scientists to write legislation with water protection in mind. While the progress has no doubt been successful, the statistics are still somewhat frightening. Oliver Houck notes that "[o]nly 19 percent of the nation's rivers, lakes, and estuaries have been assessed for pollution."[1] Over 40 percent of the nation's waters that have been assessed under the CWA still do not meet water quality standards set by states and the Environmental Protection Agency ("EPA").[2] That means that roughly 300,000 miles

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1. OLIVER A. HOUCK, THE CLEAN WATER ACT TMDL PROGRAM: LAW, POLICY, AND IMPLEMENTATION 4 (2d ed. 2002).

2. United States EPA, *Overview of Current Total Maximum Daily Load Program and Regulations, at* http://www.epa.gov/owow/tmdl/overviewfs.html (last visited Mar. 1, 2004).

of rivers and shorelines and approximately 5 million acres of lakes are impaired.[3] Sadly, an overwhelming 218 million people live within 10 miles of impaired waters.[4] And these estimations are only for the small percentage of waters that have been assessed. One can only imagine what shape the rest of the waters are in.

The CWA was written with the intention of protecting our nation's waters. While its task is a great one, its goals are laudable. The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[5] The CWA sets technology-based effluent limitations, which are the minimum amount of pollutant discharges allowed in water bodies from point sources.[6] The CWA also requires states to establish designated uses for their water bodies and then set water quality standards so that each water body is suitable for its designated use.[7] The water quality shall be set at such a standard as "to protect the public health or welfare, enhance the quality of water and serve the purposes of [the CWA]."[8] Water quality standards are used as a back up when technology-based effluent limitations are not enough to attain the water quality goals of the CWA.[9]

The Total Maximum Daily Load ("TMDL") program is one of the tools provided for in the CWA to achieve its water quality goals.[10] Each state is required under section 303 (d)(1)(A) to identify waters where the effluent limitations are not stringent enough to achieve the applicable water quality standards.[11] This section requires states to establish a priority ranking for those waters identified, based on severity of the pollution and the uses.[12] In accordance with the priority ranking, the states are then required to establish the TMDL for pollutants identified under section 304(a)(2).[13] Stated simply, TMDLs establish the maximum levels of pollutants that a water body can take in without exceeding water quality standards.

For the first twenty-five years or so, the CWA focused its regulations and enforcement on point source pollution. Therefore, TMDLs, with their application to both point and nonpoint sources, were not implemented during this time. It was not until the late

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3. *Id.*
4. *Id.*
5. 33 U.S.C. § 1251(a) (2003).
6. *Id.* § 1311(b)(1)(A).
7. *Id.* § 1313(c)(2)(A).
8. *Id.* § 1313(c)(2)(A).
9. *See id.* at § 1313(d).
10. 33 U.S.C. § 1313(d).
11. *Id.* § 1313(d)(1)(A).
12. *Id.*
13. *Id.* § 1314(a)(2).

1980s, when environmental groups began challenging the EPA in court to enforce the TMDL program, that CWA regulation began shifting towards inclusion of nonpoint source pollution and the TMDL program came to the forefront. This was the case in Florida in the late 1990s, when the EPA was compelled, due to court action brought by environmental groups, to establish TMDLs for waters on Florida's 1998 section 303(d) list, if the State failed to do so.[14]

Just prior to this consent decree, concerns over flaws in the 1998 section 303(d) list[15] prompted the Florida Legislature to enact the Watershed Restoration Act which authorized the Florida Department of Environmental Protection ("FDEP") to implement a methodology for listing waters and setting TMDLs.[16] The FDEP followed through by adopting chapter 62-303, *Florida Administrative Code*, in 2001. This rule, entitled "Identification of Impaired Surface Waters" ("IWR" or "Rule"), was enacted to provide a methodology for identifying impaired water bodies for which TMDLs will be established.[17] This Rule was not created to everyone's satisfaction, however. Many concerned citizens and environmental groups have voiced their strong opposition to the Rule arguing among other things that the Florida legislature did not have proper authority to create it; it will fail to adequately list all waters in need of repair; and it unlawfully modifies Florida's water quality standards.[18]

While the rule has held up to several legal challenges by concerned environmental groups,[19] the criticisms raised regarding the methodology behind it poses the question of how can we deal with scientific uncertainty when making important decisions that will affect the health of both humans and the environment. Florida's rule includes a detailed statistical approach that involves discarding some of the data if it falls into certain exceptions. The proponents of this approach hold that this is necessary because

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14. Florida Wildlife Fed'n, Inc. v. Browner, No. 4:98CV356-WS (N.D. Fla., Tallahassee Division, Apr. 22, 1998).

15. These concerns, which were brought to the attention of FDEP by the regulated industries, centered around two main issues: (1) that the list was based on insufficient science, which resulted in the inclusion of too many waters that were not in fact impaired, and (2) that the list did not provide an administrative point of entry under Florida's Administrative Procedures Act, which would allow the interested public to contest agency listing decisions. The FDEP agreed that these issues would best be resolved through legislation. Interview with Jim Alves, Attorney, Hopping Green & Sams (Nov. 17, 2003).

16. *See* FLA. STAT. § 403.067 (2003).

17. *See* FLA. ADMIN. CODE ANN. r. 62-303 (2003).

18. *See* Lane v. Dep't of Envtl. Prot., Fla. Admin. Order, Case Nos. 01-1332RP, 01-1462RP-01-1467RP, and 01-1797RP (May 13, 2003); Lane v. Dep't of Envtl. Prot., 846 So. 2d 511 (Fla. 1st DCA 2003); Florida Pub. Interest Research Group Citizen Lobby, Inc. v. United States Envtl. Prot. Agency, No: 4:02CV408-WS (N.D. Fla., Tallahassee Division, May 29, 2003).

19. *See id.*

statistical outliers should not be considered when deciding whether waters are impaired. On the other hand, critics of the approach argue that this data is important as it is indicative of whether or not a water body is impaired. Much of the controversy surrounding Florida's IWR, while not expressly stated, comes down to one side taking the "better to be safe than sorry" approach, and the other side focusing on the "prove it before you fix it" approach. This is the case for just about all environmental issues. Generally, the environmental activists are the side pushing for the precautionary approach, while the industry groups are analyzing the science to see just how close they can get without crossing the threshold line of actual harm that is defined in federal environmental laws. The precautionary principle[20] embodies the approach taken by environmental groups. Florida's rule is just one more instance where this overarching human and environmental health versus risk and economic efficiency battle plays out.

The purpose of this paper is not only to analyze the issues that have been raised in litigation challenging Florida's new rule, but also to explore the bigger question of how to deal with scientific uncertainty when it comes to environmental issues. Part II of this paper will provide the necessary background in order to thoroughly understand the issues regarding Florida's IWR. I will provide an overview of the CWA and how the TMDL program fits into it. In this background I will also include a brief overview of some of the litigation that has come up in the context of states implementing TMDL programs. In Part III, I will provide a detailed analysis of Florida's IWR, as well as Florida's water quality standards. Understanding what water quality standards are is important to understanding how Florida assesses when they have not been met. I will then discuss the specific issues and controversies surrounding Florida's new rule. The arguments I will focus on are 1) whether the methodology is adequate to list all of the waters actually in need of repair; and 2) whether the rule is a revision to Florida's water quality standards.

In Part IV, I will explain how the precautionary principle plays out in the issues that have risen over Florida's rule. In this section I will discuss first what the precautionary principle is before delving into its connection with the arguments against Florida's listing methodology. Lastly, in Part V, I will offer my conclusion on the rule, including whether the environmental groups are right about

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20. *See* Jonathan B. Wiener, *Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems*, 13 DUKE J. COMP. & INT'L L. 207, 207 n.11 (2003); John S. Applegate, *The Taming of the Precautionary Principle*, 27 WM. & MARY ENVTL. L. & POL'Y REV. 13 (2003).

it and whether the IWR will meet the goals intended by the CWA and the Florida Legislature.

II. THE CLEAN WATER ACT AND TOTAL MAXIMUM DAILY LOADS

The TMDL program is just one tool utilized under CWA regulation to achieve its goals of cleaner water. The CWA applies a water quality standards approach through TMDLs that allows states to designate specific uses for water bodies and implement a plan for achieving those uses. This section provides a detailed look at the CWA and the TMDL program, which will allow for a better understanding of Florida's methodology rule.

A. Clean Water Act Background

The Federal Water Pollution Control Act Amendments of 1972, which have come to be known as the CWA, came about due to a growing public concern for pollution of our nation's waters.[21] One of the most important goals of this Act is to prohibit "the discharge of pollutants into the navigable waters."[22] The focus of the CWA post-1972 was on effluent limitations.[23] The Act defines "effluent limitation" as "any restriction . . . on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters."[24] As defined in the CWA, a "point source" is "any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged."[25] Point source does not include "agricultural stormwater discharges and return flows from irrigated agriculture."[26] These sources have come to be known as nonpoint sources.[27] Under the CWA, dischargers must limit their pollution to meet nationally established effluent standards which are specified in National Pollution Discharge Elimination System (NPDES) permits.[28]

It was not until a series of citizen suits did enforcement of the CWA return to a focus on ambient-based water quality standards

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21. United States EPA, *Clean Water Act History*, *at* http://www.epa.gov/region5/water/cwa.htm (last visited Mar. 1, 2004).

22. 33 U.S.C. § 1251(a)(1) (2003).

23. NATIONAL RESOURCE COUNCIL, ASSESSING THE TMDL APPROACH TO WATER QUALITY MANAGEMENT 13 (National Academies Press 2001), *at* http://books.nap.edu/books/0309075793/html/index.html (last visited Mar. 1, 2004); *see also* United States EPA, *Water*, *at* http://www.epa.gov/history/topics/fwpca/05.htm (last visited Mar. 1, 2004).

24. 33 U.S.C. § 1362(11) (2003).

25. *Id.* § 1362(14).

26. *Id.*

27. *See* Nat'l Wildlife Fed'n v. Gorsuch, 693 F.2d 156, 166 n.28 (D.C. Cir. 1982).

28. NATIONAL RESOURCE COUNCIL, *supra* note 23, at 13.

which the Act was originally based on prior to 1972.[29] One of the reasons why technology-based effluent limitations, such as NPDES permits, were not achieving the goals of "fishable and swimmable" waters was the fact that they only regulate point source pollution.[30] Water quality standards allow CWA regulation to address nonpoint source pollution,[31] which the interested public has come to see as a significant threat to our waters. The CWA requires states to come up with their own water quality standards which the EPA has the authority to reject.[32] States first set out designated uses for all of their water bodies, e.g., recreation, fishing, and agricultural, and then set the quality of water required to achieve those uses.[33] Water quality standards are to be established taking into consideration "their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and . . . their use and value for navigation."[34] Because the goal of water quality standard regulation is to meet desired water body uses, it does not discriminate against the type of pollution. In other words, whether the pollution came from a point source or a nonpoint source does not matter, instead the focus of water quality standard regulation is ridding waters of any pollutant that is causing it to not achieve its designated uses.

B. What is a Total Maximum Daily Load?

A TMDL is the maximum amount of a pollutant that a water body can absorb and still maintain its designated uses.[35] This includes wasteload allocations from point sources, and load

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29. HOUCK, *supra* note 1, at 34.

30. NATIONAL RESOURCE COUNCIL, *supra* note 23, at 1.

31. While the CWA does not provide any teeth for actually enforcing the cleanup of impaired waters caused by nonpoint source pollution, the 9th Circuit, for example, has concluded that TMDL lists should include waters impaired by both point and nonpoint source pollution, as well as those impaired only by nonpoint source pollution. For a more detailed discussion of this issue, see *Pronsolino v. Nastri*, 291 F.3d 1123 (9th Cir. 2002) (suggesting that perhaps the federal government will enforce this by threatening to take away grant money to states that fail to implement TMDLs for waters impaired by nonpoint source pollution).

32. 33 U.S.C. § 1313.

33. *Id.*

34. *Id.* §1313(c)(2)(A).

35. United States EPA, *Introduction to TMDLs*, *at* http://www.epa.gov/owow/tmdl/intro.html (last visited Mar. 1, 2004); *see also* NATIONAL RESOURCE COUNCIL, *supra* note 23, at 20. As defined in Florida's Impaired Waters Rule, "designated use" means "the present and future most beneficial use of a body of water as designated by the Environmental Regulation Commission." FLA. ADMIN. CODE ANN. r. 62-302.200(8) (2003). Examples of designated uses include drinking, fishing, swimming, and shellfish harvesting. *See* Florida Department of Environmental Protection, *The Total Maximum Daily Load Program- Overview, at* http://www.dep.state.fl.us/water/tmdl/docs/TMDL_Program_Overview.pdf (last visited Mar. 1, 2004).

allocations from nonpoint sources and natural background conditions.[36] The EPA expects the TMDL program to accomplish the goals of cleaner water, better use of science, better protection for water bodies, and better working relationships among people and organizations.[37] The TMDL program under the CWA contains three key steps. First, states are required to list waters for which "effluent limitations . . . are not stringent enough to implement any water quality standard applicable to such waters."[38] The states must then establish a priority ranking of these waters based on the "severity of the pollution and the uses to be made of such waters."[39] Lastly, the states must identify the TMDL at an amount necessary for impaired waters to meet the applicable water quality standards with seasonal variation and a margin of safety.[40]

Meeting these requirements has shown to be one of the toughest challenges for states regarding water regulation since the CWA first came about.[41] Recent lists of impaired waters submitted to EPA show about 21,000 polluted river segments, lakes, and estuaries.[42] According to the National Research Council ("NRC"), more than 40,000 TMDLs are required for these impaired waters.[43]

C. Recent Litigation over State Implementation of TMDLs

Although TMDLs have been required by the CWA for over thirty years, not until recently have states and the EPA developed any.[44] Oliver Houck explains that section 303(d) provides the structure where states identify impaired waters and establish TMDLs, and if the states do not follow through, then the EPA does it for them.[45] However, neither the states nor the EPA did anything for a long time.[46] It was not until several environmental citizen groups began bringing legal actions against the EPA in recent years did the states and the EPA begin to take the TMDL program more seriously.[47] These challenges have resulted in court orders and consent decrees requiring the EPA to ensure that TMDLs are established.[48]

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36. United States EPA, *supra* note 2; 40 C.F.R. § 130.2(i) (2003).
37. United States EPA, *supra* note 2.
38. 33 U.S.C. § 1313(d)(1)(A).
39. *Id.*
40. *Id.* § 1313(d)(1)(D).
41. NATIONAL RESOURCE COUNCIL, *supra* note 23, at 2.
42. *Id.*
43. *Id.*
44. United States EPA, *supra* note 2.
45. HOUCK, *supra* note 1, at 5.
46. *Id.*
47. *Id.*
48. *Id.*

Recent litigation surrounding TMDLs has raised many issues regarding implementation of the TMDL program and the listing of impaired waters.[49] While this paper focuses on the issues litigated regarding the methodology in Florida's IWR, it is worth mentioning TMDL issues being litigated elsewhere. Some of these include when the EPA must set TMDLs, and whether impaired waters include nonpoint sources.

In deciding when the EPA must step in and set TMDLs, courts consider the doctrine of "constructive submission."[50] Under this theory, a state's lack of submission of TMDLs, either by a lengthy delay or a complete failure to do so, is itself considered a submission.[51] This constructive submission then triggers the EPA to act. The Ninth Circuit in *San Francisco Baykeeper v. Whitman* refused to invoke this doctrine.[52] Agreeing with the Tenth Circuit, the court held that a state must clearly and unambiguously refuse to submit any TMDLs.[53] While California did not submit any TMDLs until fifteen years after the initial deadline, the fact that it had established a TMDL completion schedule and "dedicated substantial resources to the development of its TMDL program," precluded the court from applying the constructive submission doctrine.[54]

The court in *Friends of the Wild Swan, Inc. v. EPA* reached a different conclusion regarding the constructive submission doctrine.[55] It held that while the constructive submission doctrine did not trigger the EPA's duty to prepare TMDLs, the EPA did act arbitrarily and capriciously by failing to disapprove Montana's submission of only 130 TMDLs.[56] According to the court, the CWA required that states develop TMDLs promptly, and that Montana's submission of only 130 TMDLs was inadequate.[57]

Another issue that has been litigated is whether the section 303(d) lists are to include water bodies impaired by nonpoint sources of pollution. The Ninth Circuit has concluded that the section 303(d) list includes waters impaired by both point and

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49. For a review of TMDL litigation over the past few years, see James R. May, *Recent Developments in TMDL Litigation: 1999-2002*, ALI-ABA COURSE OF STUDY 135 (Oct. 23-25, 2002).

50. *See, e.g.*, San Francisco Baykeeper v. Whitman, 297 F.3d 877 (9th Cir. 2002); Northwest Envtl. Advocates v. EPA, 268 F. Supp. 2d 1255 (D.Or. 2003); Am. Littoral Soc'y v. EPA, 199 F. Supp. 2d 217 (D.N.J. 2002).

51. *Id.*

52. 297 F.3d 877 (9th Cir. 2002).

53. *Id.; see also* Hayes v. Whitman, 264 F.3d 1017 (10th Cir. 2001).

54. *San Francisco Baykeeper*, 297 F.3d at 880, 883.

55. 130 F. Supp. 2d 1184 (D. Mont. 1999).

56. *Id.* at 1192, 1195-96.

57. *Id.* at 1195-96.

nonpoint sources.[58] The court in *Pronsolino v. Nastri* upheld a district court's finding that the EPA was correct in identifying a water body under section 303(d), even though it was polluted only by nonpoint sources.[59] If the court reasoned otherwise, "it would be impossible 'to implement the applicable water quality standards'."[60] The court also added that since section 303(d) applies to point and nonpoint sources, by extension it applies equally to blended waters, those impaired by both sources of pollution together.[61]

In response to the large amount of litigation brought by environmental groups urging the EPA to enforce its requirement that states prepare TMDL lists, the EPA has negotiated numerous consent decrees.[62] In many of these orders, the court has established schedules for the state to follow for setting TMDLs. In 1998, several Florida environmental groups filed suit against the EPA for failure to enforce the TMDL program in Florida.[63] In 1999, the Court issued a consent decree compelling the EPA to establish TMDLs for waters on Florida's 1998 section 303(d) list by 2011 if the state of Florida fails to do so.[64] Not long before this consent decree, the Florida legislature enacted the Watershed Restoration Act, providing authority for the FDEP to create a TMDL listing methodology.[65]

III. FLORIDA'S RULE: IDENTIFICATION OF IMPAIRED SURFACE WATERS

The enabling legislation for Florida's IWR is set forth in section 403.067, *Florida Statutes* (2003). The Florida Legislature supported the adoption of a TMDL program, declaring that, "the waters of the

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58. *See* Pronsolino v. Nastri, 291 F.3d 1123 (9th Cir. 2002).

59. *Id.* at 1141. As a side note, a very interesting issue was touched on in this case that is worth noting. That is the fact that while TMDLs can be applied to nonpoint sources of pollution, there are no regulatory tools provided in the CWA to address nonpoint sources. Therefore, what tools are available for a farmer, for example, to lower the amount of agricultural runoff, a nonpoint source of pollution? What legal tools are available to enforce this nonpoint source reduction? The court in *Pronsolino* explains that the CWA leaves it up to the states to figure out how to implement and monitor the reduction of nonpoint source pollution. *Id.* at 1140. The court further suggests that federal grant money may be a mechanism in which the EPA will enforce state implementation plans. *Id.* These are issues that will have to be faced in the near future as states begin implementing their TMDL programs.

60. *Id.* at 1139 (quoting Alaska Ctr. for the Env't v. Browner, 20 F.3d 981, 985 (9th Cir. 1994)).

61. *Id.* at 1132-33, 1140.

62. For a listing of these consent decrees by state, see United States EPA, *TMDL Litigation by State*, *at* http://www.epa.gov/owow/tmdl/lawsuit1.html (last visited Mar. 1, 2004).

63. Florida Wildlife Fed'n, Inc. v. Browner No. 4:98CV356-WS (N.D. Fla., Apr. 22, 1998).

64. *Id.*

65. *See* FLA. STAT. § 403.067 (2003).

state are among its most basic resources and that the development of a total maximum daily load program for state waters . . . will promote improvements in water quality throughout the state through the coordinated control of point and nonpoint sources of pollution."[66] In this Act, the Legislature obligated the FDEP to adopt a rule methodology for determining impaired waters while keeping in consideration water quality standards codified in chapter 62-302, *Florida Administrative Code* (2003).[67] In determining whether water quality standards are being exceeded, FDEP is required to take into account "objective and credible data, studies and reports, including surface water improvement and management plans approved by water management districts [under s. 373.456] and pollutant load reduction goals developed according to [FDEP] rule."[68] FDEP's methodology rule is required to set forth:

> 1. Water quality sample collection and analysis requirements, accounting for ambient background conditions, seasonal and other natural variations;
>
> 2. Approved methodologies;
>
> 3. Quality assurance and quality control protocols;
>
> 4. Data modeling; and
>
> 5. Other appropriate water quality assessment measures.[69]

It is also important to note that TMDLs are not intended to be the sole or primary program to address water quality. Section 403.067(4), *Florida Statutes*, states:

> If the [FDEP] determines, based on the [TMDL] assessment methodology described in subsection (3), that water quality standards are not being achieved and that technology-based effluent limitations and other pollution control programs under local, state, or federal authority . . . are not sufficient to result in attainment of applicable surface water quality standards, it shall confirm that determination by

66. *Id.* § 403.067(1).
67. *Id.* § 403.067(2), (3)(b).
68. *Id.* § 403.067(3)(b).
69. *Id.*

> issuing a subsequent, updated list of those water bodies or segments for which [TMDLs] will be calculated.

Therefore, TMDLs serve as a backup when other pollution control programs fail to restore waters.

A. Florida's Listing Methodology

The IWR uses Florida's water quality standards as a basis for determining whether waters are impaired. Therefore, it is necessary to first explain what they are and what the rule provides before understanding how Florida assesses impaired waters.

1. Water Quality Standards

The enabling legislation for Florida's water quality standards is set forth in section 403.021, *Florida Statutes*. The Legislature authorized the FDEP to establish water quality standards and to take into consideration natural and scientific variability, declaring that:

> It is the intent of the Legislature that water quality standards be reasonably established and applied to take into account the variability occurring in nature. The [FDEP] shall recognize the statistical variability inherent in sampling and testing procedures that are used to express water quality standards. The [FDEP] shall also recognize that some deviations from water quality standards occur as the result of natural background conditions. The [FDEP] shall not consider deviations from water quality standards to be violations when the discharger can demonstrate that the deviations would occur in the absence of any human-induced discharges or alterations to the water body.[70]

Florida's Surface Water Quality Standards are set forth in chapter 62-302, *Florida Administrative Code*. As defined in this chapter, "water quality standards" means "standards composed of designated present and future most beneficial uses (classification of waters), the numerical and narrative criteria applied to the specific water uses or classification, the Florida antidegradation policy, and the

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70. *Id.* § 403.021(11).

moderating provisions contained in this rule."[71] The rules regarding water quality standards "are designed to protect the public health or welfare and to enhance the quality of waters of the State."[72] In promulgation of these rules, the FDEP took into consideration "the use and value of waters of the State for public water supplies, propogation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation."[73] The water quality standards rules "are based upon the best scientific knowledge related to the protection of the various designated uses of waters of the State."[74] It is the water quality standards set forth in this chapter upon which Florida's IWR is based. TMDLs must be set for waters where effluent limitations are not stringent enough to meet these water quality standards.

2. Impaired Waters Rule

Florida's IWR is set forth in chapter 62-303, *Florida Administrative Code*, entitled "Identification of Impaired Surface Waters." The intent of the Rule is to establish "a methodology to identify surface waters of the state that will be included on the state's planning list of waters" and "a methodology to identify impaired waters that will be included on the state's verified list of impaired waters, for which the [FDEP] will calculate Total Maximum Daily Loads (TMDLs)."[75] Impaired waters are described as "those not meeting applicable water quality standards."[76] The Rule notes, however, that many waters naturally do not meet water quality standards and the Rule is only intended to apply to waters that are impaired due to point source or nonpoint source pollutant discharges.[77] The IWR specifically states that it is not intended to establish new water quality criteria or standards, rather it is intended "to interpret existing water quality criteria and evaluate attainment of established designated uses as set forth in Chapter 62-302, *Florida Administrative Code*, for the purposes of identifying water bodies or segments for which TMDLs will be established."[78] As required by section 403.067, *Florida Statutes*, the Rule will not list impaired waters on the verified list:

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71. FLA. ADMIN. CODE ANN. r. 62-302.200(30) (2003).
72. *Id.* at r. 62-302.300(10)(a).
73. *Id.*
74. *Id.* at r. 62-302.300(10(b)(1).
75. *Id.* at r. 62-303.100(1).
76. FLA. ADMIN. CODE ANN. r. 62-303.100(2).
77. *Id.*
78. *Id.* at r. 62-303.100(3).

> If reasonable assurance is provided that, as a result of existing or proposed technology-based effluent limitations and other pollution control programs under local, state, or federal authority, they will attain water quality standards in the future and reasonable progress towards attainment of water quality standards will be made by the time the next 303(d) list is schedule to be submitted to EPA.[79]

The methodology used in the IWR to assess exceedances is based on binomial distribution, a statistical approach designed to provide a high amount of certainty that the outcome of the water quality assessment is correct.[80]

Binomial distribution is a statistical method which explains the possible number of times an event will occur in a set of observations.[81] It is defined by a number of observations and the probability of occurrence. Basically, an event is binary, meaning it may occur or may not. An example is the flip of a coin — it will either land on heads or it will not. Therefore, if you toss a coin ten times, the binary distribution is the statistical measurement of how many times the coin will land on heads in that sequence.[82] In relation to water quality measurements, using the binomial method means that a water body is either impaired or it is not. Therefore, if the criterion is 1.0, any measurement above this is viewed as exceeding the standard whether it is 1.1 or 10.[83] Binomial distribution has advantages over the more common statistical method used, the raw score approach.[84] The binomial method takes into account the total number of measurements taken, whereas the raw score approach does not.[85] Six out of 36 measurements above the threshold, for example, makes a stronger case for impairment than one out of six.[86]

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79. *Id.* at r. 62-303.100(5).

80. FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION PROTECTION, DOCUMENTATION FOR THE 2002 UPDATE TO THE STATE OF FLORIDA'S 303(D) LIST, 5 (Bureau of Watershed Management, Div. of Water Resource Management, Oct. 1, 2002), *available at* http://www.dep.state.fl.us/water/tmdl/docs/2002%20Update/SubmittalDoc.pdf (last visited Mar. 1, 2004).

81. *See Binomial Distribution*, *at* http://www.stattucino.com/berrie/binomial.html (last visited Mar. 1, 2004); *Binomial Probability Histogram*, *at* http://stat-www.berkeley.edu/~stark/Java/BinHist.htm (last visited Mar. 1, 2004).

82. *Id.*

83. NATIONAL RESOURCE COUNCIL, *supra* note 23, at 58.

84. *Id.* at 57.

85. *Id.*

86. *Id.*

There are two key terms used in the IWR that set out the basic framework of the listing methodology. These are planning list and verified list. "Planning list" is defined as "the list of surface waters or segments for which assessments will be conducted to evaluate whether the water is impaired and a TMDL is needed."[87] The planning list contains water bodies that fail to meet the minimum criteria for surface waters, any of its designated uses, or applicable water quality criteria.[88] The waters placed on this list are subject to less stringent measurements than those for waters on the verified list.[89] Therefore, the planning list represents waters for which there are initial indications that the water body *may* fail to meet its designated uses.

Part II of the IWR sets out the requirements for including a water body on the planning list.[90] This Part divides water quality criteria into two categories, one addresses aquatic life use support, and the other addresses protection of human health.[91] In order for a water body to be placed on the planning list because of a failure to support aquatic life, it must either 1) exceed the aquatic life-based water quality criteria set forth in 62-303.320, *Florida Administrative Code*; 2) fail to meet biological assessment thresholds for its water body type as required by 62-303.330, *Florida Administrative Code*; 3) be acutely or chronically toxic as set forth in 62-303.340, *Florida Administrative Code*; or 4) exceed the nutrient thresholds of 62-303.350, *Florida Administrative Code*.[92] Part II further sets out when a water body will be placed on the planning list for primary contact and recreation use support, fish and shellfish consumption use support and drinking water use support and protection of human health.[93] Rule 62-303.360 provides exclusions for factors not related to chronic discharges of pollutants, such as red tides, sewage spills.

The IWR utilizes a binomial distribution approach in determining whether a water body exceeds aquatic life-based water

87. FLA. ADMIN. CODE ANN. r. 62-303.200(11) (2003).

88. *Id.* at r. 62-303.300(1). "It should be noted that water quality criteria are designed to protect either aquatic life use support, which is addressed in Rules 62-303.310-.353, F.A.C., or to protect human health, which is addressed in Rules 62-303.360-.380, F.A.C." *Id.* "Water quality criteria" is defined in the IWR as "elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports the present and future most beneficial uses." *Id.* at r. 62-303.200(22).

89. *See* r. 62-303.300.

90. *Id.* at r. 62-303.300-.380.

91. *See id.*

92. FLA. ADMIN. CODE ANN. r. 62-303.300-.380.

93. *Id.* at r. 62-303.360-.380.

quality criteria.[94] It requires a minimum sample size of ten and then determines impairment based upon the number of exceedances relative to the total number of samples.[95] This statistical method is set out in Tables 1 and 2 of the IWR.[96] Table 1 provides the number of exceedances needed for a given sample size to be placed on the planning list with at least an 80 percent confidence that the criteria exceedance rate is greater than or equal to 10 percent. To place a water body on the verified list, Table 2 provides the number of exceedances with at least a 90 percent confidence that the criteria exceedance rate is greater than or equal to 10 percent for the sample size.[97] Rule 62-303.320(7)(a) requires that data used in the IWR assessment be collected and analyzed in accordance with chapter 62-160, *Florida Administrative Code*, FDEP's Quality Assurance Rule, to ensure credibility. The purpose of the Quality Assurance Rule is to ensure that data used by FDEP are "appropriate and reliable, and are collected and analyzed by scientifically sound procedures."[98] The rule applies to all activities conducted by FDEP that involve environmental data or reports.[99] It provides for the "minimum field and laboratory quality assurance, methodological and reporting requirements of the [FDEP]."[100]

"Verified list," on the other hand, means "the list of impaired water bodies or segments for which TMDLs will be calculated."[101] The verified list contains impaired waters that meet the requirements for the planning list and the additional requirements of rules 62-303.420-.480, *Florida Administrative Code*.[102] It is the waters contained in the verified list for which TMDLs will be established. Part III of the IWR provides the requirements for a water body to be placed on the verified list.[103] The structure of these requirements is similar to Part II for the most part, however, the requirements for being placed on the verified list are heightened.

To be placed on the verified list, a water body must first meet the planning list requirements in Part II, and the additional

94. *Id.* at r. 62-303.320.
95. *Id.*
96. *See id.* at r. 62-303.320(1), Table 1; r. 62-303.420(2), Table 2.
97. *Id.*
98. FLA. ADMIN. CODE ANN. r. 62-160.110(1).
99. *Id.* at r. 62-160.110(2).
100. *Id.* at r. 62-160.110(1).
101. *Id.* at r. 62-303.200(21).
102. *Id.* at r. 62-303.400(1). Rules 62-303.420-.480, *Florida Administrative Code*, include exceedances of aquatic life-based water quality criteria, biological impairment, toxicity, interpretation of narrative nutrient criteria, primary contact and recreation use support, fish and shellfish consumption use support, and drinking water use support and protection of human health.
103. FLA. ADM. CODE ANN. r. 62-303.400-.480.

requirements of Part III.[104] The data used for placing water bodies on the verified list cannot be more than 7.5 years old, whereas the planning list considers data up to 10 years old.[105] The same binomial distribution is used in Part III, but the sample size requirement is twenty.[106] In addition, certain classes of data are excluded from consideration in determining waters that will be placed on the verified list such as permit violations, mixing zones, and major storm events.[107]

There are several other exclusions provided for in the IWR. Water bodies will not be identified as impaired if their impairment is due solely to natural background conditions or results from physical alterations in the water body not related to pollutants.[108] The IWR also does not intend to include on the verified list "waters where designated uses are being met."[109] Moreover, if a water body "is expected to attain water quality standards in the future and is expected to make reasonable progress towards attainment of water quality standards by the time the next 303(d) list is scheduled to be submitted to EPA, the segment shall not be listed on the verified list."[110] The FDEP is directed to determine that based on "whether existing or proposed technology-based effluent limitations and other pollution control programs under local, state, or federal authority are sufficient to result in the attainment of applicable water quality standards."[111] In other words, water bodies will not be placed on the verified list if they can be cleaned up through other programs or if their impairment is due to causes beyond the reach of TMDLs (meaning natural conditions or impairment not related to pollutants).

Once water bodies are placed on the verified list, the IWR requires the FDEP to prioritize the waters, taking into account the severity of the impairment and the designated uses of that water body.[112] According to rule 62-305.500(1), Florida Administrative Code, water bodies are designated as high, medium, or low priority.[113] This provision goes on to set out the criteria for each designation, the highest priority being those waters "where the impairment poses a threat to potable water supplies or to human

104. *Id.* at r. 62-303.400(1).
105. *Id.* at r. 62-303.400(2); r. 62-303.320(3).
106. *Id.* at r. 62-303.420(2).
107. *Id.* at r. 62-303.420(5).
108. FLA. ADM. CODE ANN. r. 62-303.100(2).
109. *Id.*
110. *Id.* at r. 62-303.600(2).
111. *Id.* at r. 62-303.600(1).
112. *Id.* at r. 62-303.500(1).
113. FLA. ADM. CODE ANN. R. 62-303.500(1).

health."[114] It is according to this prioritization that the TMDL development schedule will be set for waters on the verified list.[115]

What is the purpose of a two-list process like this? Essentially, the planning list is a screening mechanism. This type of process helps to, in a sense, weed out water bodies that are not in need of TMDLs even though at first glance they appear to be impaired. While the EPA does not specifically call for a system such as this, the two list process is very effective and improves monitoring and listing decisions. The NRC endorses a two-list approach like this one in its report, *Assessing the TMDL Approach to Water Quality Management*.[116] The two list process "moves forward from a position of limited information to more information; from uncertainty to more certainty; and from inaction to progressively larger and possibly more costly actions."[117] The NRC explains that states have placed too many water bodies on their current 303(d) lists without using adequate data.[118] Having a preliminary list (called the planning list in Florida) allows the state to conduct a more complete assessment "that would involve additional monitoring and appropriate analysis of new data to reduce the uncertainty about their condition."[119] It is not until waters have been adequately assessed that they are moved to the verified list for TMDL development.[120] The NRC further explained the importance of having a two list assessment:

> Determining whether there should be some minimum threshold of data available when evaluating waterbodies for attainment of water quality standards is an issue of great concern to states. On the one hand, many call for using only the "best science" in making listing decisions, while others fear that many impaired waters will not be identified in the wait for additional data. The existence of a preliminary list addresses these concerns by focusing attention on waters suspected to be impaired without imposing on stakeholders and the agencies the consequences of TMDL development, until additional information is developed and evaluated.[121]

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114. *Id.* at r. 62-303.500(2)(a).
115. *Id.* at r. 62-303.500.
116. NATIONAL RESOURCE COUNCIL, *supra* note 23, at 5, 50-56.
117. *Id.* at 52.
118. *Id.* at 5, 52.
119. *Id.* at 52.
120. *Id.*
121. *Id.* at 53.

Finally, the IWR provides for a delisting procedure.[122] Pursuant to this part, waters on the planning list that did not make it to the verified list are removed from the State's planning list.[123] The data used to place that water body on the planning list cannot be used as the sole basis for listing that particular water body on future planning lists.[124] Water bodies on the verified list will only be removed after completion of a TMDL for all pollutants causing the impairment or upon a showing that the water body now meets its established water quality standard.[125]

B. Arguments against Florida's Rule

Not everyone has been pleased with Florida's new Rule. From the time the FDEP proposed the IWR, many environmental protection groups and activists voiced their opposition. The opposition included, among others, environmental organizations such as Santa Rosa Sound Coalition, Clean Water Network, Sierra Club and Florida Public Interest Research Group ("PIRG"). In a public comment letter to FDEP, one member of the Santa Rosa Sound Coalition noted;

> After the lengthy delay in establishing a "total maximum daily load" (TMDL) program in Florida, it is a great disappointment that the Florida Department of Environmental Protection's first step is a blatant rejection of the excellent principles of the Clean Water Act. The long anticipated TMDL process was supposed to put deteriorating U.S. waterbodies on an effective course toward restoration. Instead, DEP has devised a system to perpetuate the damage.[126]

Linda Young of the Clean Water Network, who has also been vocal about her opposition to Florida's IWR, expressed more disappointment. In her public comment letter to the FDEP she urged it "to abandon [its] efforts to undermine the Clean Water Act."[127] She went on to say;

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122. FLA. ADMIN. CODE ANN. r. 62-303.720 (2003).
123. *Id.* at r. 62-303.720(1).
124. *Id.*
125. *Id.* at r. 62-303.720(2).
126. Public Comment Letter from Frances Dunham, Santa Rosa Sound Coalition, to Daryll Joyner, FDEP (Dec. 4, 2000) (on file with FDEP).
127. Public Comment Letter from Linda Young, Clean Water Network, to Daryll Joyner, FDEP (Dec. 29, 2000) (on file with FDEP).

> It is unfortunate that apparently some of our legislators, our Governor and some of his agency employees are more concerned with protecting the economic interests of favored polluters across the state, than in protecting the right of millions of Floridians to have clean water for drinking, fishing, swimming and other recreational activities.[128]

The Sierra Club expressed its disagreement with Florida's new rule succinctly when it said, "[t]he very foundation of the proposed rule creates the genesis for a failed TMDL program for Florida."[129] Florida PIRG issued a report concerning the proposed IWR entitled, *Cleaning Up Florida's Waters: The Case for a Stronger Impaired Waters Rule*.[130] In its policy recommendations it states that "Florida's proposed Impaired Waters Rule is riddled with shortcomings and loopholes."[131]

In 2001, several environmental groups challenged the proposed IWR in the Division of Administrative Hearings (DOAH).[132] They argued that the Rule is an "invalid exercise of delegated legislative authority," within the meaning of chapter 120, *Florida Statutes*.[133] Among their reasons were that the IWR creates a two-list methodology not provided for in the enabling statute, and that it improperly excludes data from consideration, also not provided for in the enabling statute.[134] In his Final Order, the Administrative Law Judge ("ALJ") disagreed and concluded that Florida's IWR is not an "invalid exercise of delegated legislative authority."[135] The petitioners subsequently appealed this decision. The First District Court of Appeals affirmed the ALJ's decision in 2003.[136] The environmental groups' final challenge (to date) was against the EPA in federal court.[137] There they argued that the IWR was, in effect, a change to Florida's water quality standards. That challenge also

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128. *Id.*

129. Public Comment Letter from Maurice Coman, Florida Chapter, Sierra Club, to Daryll Joyner, FDEP (October 12, 2000) (on file with FDEP).

130. FLORIDA PIRG EDUCATION FUND, CLEANING UP FLORIDA'S WATER: THE CASE FOR A STRONGER IMPAIRED WATERS RULE (Feb. 2002).

131. *Id.* at 34.

132. *See* Lane v. Dep't of Envtl. Prot., Fla. Admin. Order, Case Nos. 01-1332RP, 01-1462RP-01-1467RP, and 01-1797RP (May 13, 2002).

133. *Id.* at 3.

134. *See* Lane, Fla. Admin. Order, Case Nos. 01-1332RP, 01-1462RP-01-1467RP, and 01-1797RP.

135. *Id.* at 405.

136. Lane v. Dep't of Envtl. Prot., 846 So. 2d 511 (Fla. 1st DCA 2003).

137. Florida Pub. Interest Research Group Citizen Lobby, Inc. v. United States EPA, No. 4:02CV408-WS (N.D. Fla., Tallahassee Division, May 29, 2003) (order granting summary judgment).

failed when the Court disagreed and granted Defendant's Motion for Summary Judgment.[138]

While there have been several arguments in opposition to the IWR, the two that this paper focuses on are the flaws in the methodology and that the Rule is a revision to Florida's water quality standards.

1. Methodology

Since the IWR was proposed, environmental groups have expressed disagreement with the methodology used for assessing impaired waters. Most importantly, they argue that because of the methodology's strict statistical methods, its effect will be to neglect waters that are actually polluted and in need of remediation. Florida PIRG argues that the Rule has a "hesitant mentality of doing nothing until it is absolutely certain that a waterway is excessively contaminated."[139] PIRG suggests correcting this by 1) listing a water whenever its exceedance rate is above 10 percent, regardless of the number of samples; 2) considering data more than 7.5 years old when no recent data exists; and 3) not requiring seasonal variety, rather use any data that points to impairment regardless of what season it came from.[140]

Several environmental groups argued in their petitions before DOAH in 2001,[141] that the methodology of the IWR was flawed. They argued mainly that several provisions of the IWR serve to limit the consideration of relevant data and therefore directly violate the CWA and 40 C.F.R. section 130.7(b)(5), which requires that all credible data be considered.[142] They set forth several arguments explaining how Florida's IWR limits the consideration of relevant data. First, they argued that several provisions of the Rule limit the number of samples that can be considered for TMDL assessment, either temporally or by number.[143] Among these provisions are those that exclude older data, set requirements on how the samples are to be collected, and exclude statistical

138. *See id.*

139. FLORIDA PIRG EDUCATION FUND, *supra* note 130, at 34.

140. *Id.*

141. Petition for an Administrative Determination that DEP Proposed New Rule 62-303 Violates Section 403.067, Florida Statutes, and 33 USC 1252 Et Seq., and Otherwise Constitutes an Invalid Abuse of Delegated Legislative Authority, Case Nos: 01-1462RP-01-1467RP (DOAH April 13, 2001).

142. *Id.*

143. Save Our Bay, Air, and Canals, Inc., Petition For an Administrative Determination that DEP Proposed New Rule 62-303 Violates Section 403.067, Florida Statutes and 33 U.S.C. 1251 Et. Seq., and Otherwise Constitutes an Invalid Abuse of Delegated Legislative Authority, Case No. 01-1463RP, 7 (DOAH April 13, 2001).

outliers.[144] They also claimed that the binomial distribution method in Florida's IWR is not a valid scientific way of determining impairment because it does not "account for the severity of exceedances of water quality criterion, past history of exceedances, and nature of pollutants."[145]

Further, they argued that rule 62-303.100(2), which explains that Florida's rule does not intend to include waters that are impaired by pollution due to natural causes, is inconsistent with rule 62-303.360(3).[146] The latter provision provides that sewage spills and medical wastes will not be included in assessment of recreation use support. According to the environmental groups, because sewage spills and medical wastes are not natural causes, they should not be excluded.[147] Moreover, advisories, warnings, and closures, also mentioned in rule 62-303.360(3), should be included in assessments because they are credible data that, at the very least, can be corroborative of other data.[148]

The environmental advocates also had contention with rule 62-303.600, *Florida Adminstrative Code*. This rule provides that if a water body is expected to achieve water quality standards in the future because of existing pollution control mechanisms then it should not be placed on the verified list. The petitioners argued that this does not provide realistic protection for impaired waters because "[i]f pollution control mechanisms are already in effect, and the water segment is still impaired, it is clear that those mechanisms have not provided the needed protection."[149] Further, the provision does not provide any standard for determining the meaning of "reasonable progress."[150]

While the environmentalists and concerned citizens disagree with the methodology used in the IWR, the state and many regulated industries find it is a fair and objective way to assess impairment. According to Daryll Joyner, the FDEP official who wrote most of the IWR, "[t]he new methodology is more accurate and more protective than the informal methodology that was in place."[151] The IWR uses "better science and more reliable sampling and

144. Petitioners specifically noted rules 62-303.320(3)(b), (4), (6), 62-303.340, 62-303.350(c), 62-303.351(1)(b), 62-303.352(1)(b), (1)(c), 62-303.351(1), 62-303.380, 62-303.400(2), 62-303.420(1), (2), (5), 62-303.430(2), 62-303.440(1)(b), (3), 62-303.450(1), 62-303.480, and 62-303.720(1). *Id.*

145. *Id.* at 9, 17.

146. *Id.* at 13-14.

147. *Id.*

148. *Id.* at 14.

149. *Id.* at 26.

150. *Id.*

151. John M. Dunn, *Environment: Defining "Dirty,"* FLORIDA TREND, (Aug. 2003), *available at* http://www.floridatrend.com/issue/default.asp?a=5015&s=2&d=8/1/2003.

monitoring methods," according to Joyner and other FDEP officials.[152] Jim Alves, a Tallahassee attorney who represents industry groups, says, "[y]ou shouldn't spend the resources of regulated industries, cities, counties, and states to clean up water unless you can validate the data. It's bad environmental policy to spend money on a problem that doesn't exist."[153] The ALJ, in *Lane et al. v. Department of Environmental Protection*, also stated his opinion on the methodology set forth in the IWR:

> It is not feasible, due to limited resources, to examine a water body at every point to determine its true overall condition. Rather, samples must be taken over time and inferences drawn from the sampling results, taking into consideration the "variability [of water quality] occurring in nature" and "that some deviations from water quality standards occur as the result of natural background conditions" (as the Legislature observed in Subsection (11) of Section 403.021, Florida Statutes). The process is, necessarily, characterized by a lack of certainty and the possibility of error.[154]
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> * * *
>
> Identifying impaired surface waters is an inexact science. Complete accuracy and precision cannot be guaranteed. As pointed out in the NRC Publication, there is always "the possibility of both Type I error (a false conclusion that an unimpaired water is impaired) and Type II error (a false conclusion that an impaired water is not impaired)." Consequently, there is no one correct methodology for identifying impaired surface waters.[155]

The ALJ thus concluded that the methodology used in Florida's IWR is not an invalid exercise of delegated legislative authority.[156] He pointed out that any methodology is going to have inaccuracies.

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152. *Id.*

153. *Id.*

154. Lane v. Dep't of Envtl. Protection., Fla. Admin. Order, Case Nos. 01-1332RP, 01-1462RP- 01-1467RP, and 01-1797RP, 102 (May 13, 2002).

155. *Id.* at 343; *see also* Elizabeth Mishalanie & Charles Ramsey, *Obtaining Trustworthy Environmental Data: Sampling and Analysis Issues*, 13 NAT. RESOURCES AND ENV'T 522 (Spring 1999).

156. Lane, Fla. Admin. Order, Case Nos. 01-1332RP, 01-1462RP- 01-1467RP, and 01-1797RP, at 432.

There is no perfect science. However, these inaccuracies do not amount to unlawfulness.

After analyzing these arguments, it is my conclusion that those set forth by the environmental groups challenging the IWR do not take into consideration the fact that there can never be complete accuracy when measuring water quality. Science is inexact, therefore, to argue that one measurement showing evidence of impairment is enough to list a water body does not follow common sense. Elizabeth Mishalanie and Charles Ramsey, in their article regarding sampling issues, explain that all measurements are actually estimates which are affected by the errors of bias and variability.[157] They go on to explain that, "[a]ccuracy is difficult to assess and impossible to prove. To prove accuracy, a true value must be known to compare to an estimated value; but if the true value is known, then there is no need to make any measurements."[158] The methodology set up in Florida's IWR is meant to take into account the fallibility of scientific measurements. In this way, the state can be more accurate and more confident that the water bodies it is fixing in fact are in need of repair.

2. Revision to Water Quality Standards

In *Florida Public Interest Research Group Citizen Lobby, Inc., et al. v. EPA*, the Plaintiffs claimed that certain provisions of the IWR constitute revisions of Florida's water quality standards, and that the EPA failed to review those provisions to determine their consistency with the CWA.[159] Section 303 of the CWA requires states to submit new or revised water quality standards to the EPA for its review,[160] and the EPA has a nondiscretionary duty to determine if the water quality standards are consistent with the CWA.[161]

Rule 62-302.530 of Florida's water quality standards states that the criteria set for aquatic life, primary contact and recreation, fish and shellfish consumption, and drinking water uses, unless otherwise stated, are "not to be exceeded at any time."[162] Plaintiffs argue, though, that certain provisions of the IWR modify Florida's water quality standards rule by allowing more than one exceedance before identifying a water body as impaired.[163] The specific

157. Mishalanie & Ramsey, *supra* note 155, at 522.
158. *Id.*
159. No. 4:02CV408-WS (N.D. Fla., Tallahassee Division, May 29, 2003).
160. *See* 33 U.S.C. § 1313(c) (2003).
161. *Florida Pub. Interest Research Group Citizen Lobby, Inc.*, No. 4:02CV408-WS.
162. FLA. ADMIN. CODE ANN. r. 62-302.530 (2003).
163. Florida Pub. Interest Research Group Citizen Lobby, Inc., Brief in Support of Plaintiffs'

provisions they refer to are binomial distribution, exclusion of data/minimum sample size, toxicity and biological impairment.[164] Plaintiffs argued that binomial distribution is a revision to Florida's water quality standards because it is a statistical method that allows a certain number of exceedances of water quality criteria depending on the number of samples before a water body is considered impaired.[165] Plaintiffs next claimed that certain provisions of the IWR "exclude the use of data collected during certain events such as 'upsets or bypasses from permitted facilities' or 'rain in excess of the 25-year, 24-hour storm'."[166] In addition, they argued the minimum sample size required by the IWR revised Florida's water quality standards.[167]

The Plaintiffs further argued that rules 62-303.340 and 62-303.440 on toxicity were also a change to Florida's water quality standards because they require two samples indicating toxicity before a water is determined to be impaired.[168] They also claimed that the provisions on biological criteria are a revision to Florida's water quality standards because they require two failed bioassessments before determining that a water body is impaired.[169] Lastly, Plaintiffs claimed that provisions in the IWR revise the narrative standard set forth in Florida's water quality standards rule by establishing a maximum chlorophyll, a concentration, and a minimum TSI level.[170]

In response, the EPA argued that the IWR is not a revision to Florida's water quality standards.[171] The EPA explained that in order to revise those standards, the FDEP is required by Florida's Administrative Procedure Act ("APA") to follow certain rulemaking procedures.[172] Instead, the FDEP specifically stated in the IWR that it does not intend to modify its water quality standards.[173] Moreover, the EPA noted that the IWR cannot be a revision to Florida's water quality standards because the EPA has not approved

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Motion for Summary Judgment, Case no: 4:02CV408-WS, 6 (N.D. Fla., Tallahassee Division, Mar. 14, 2003).

164. *Id.*

165. *Id.*

166. *Id.* at 8.

167. *Id.*

168. *See id.* at 9.

169. *Id.*; *see* FLA. ADMIN. CODE ANN. r. 62-303.430 (2003).

170. *Id.* at 11-12; *see also* r. 62-302.530(48)(b); 62-303.350; 62-303.450; 62-303.351; 62-303.353.

171. United States Envtl. Prot. Agency Reply Memorandum in Support of Defendant's Motion for Summary Judgment, Case no: 4:02CV408-WS (N.D. Fla, Tallahassee Division, May 28, 2003).

172. *Id.* at 12; *see also* FLA. STAT. § 120.54(3)(a)(1) (2003).

173. *Id.*; *see also* r. 62-303.100(3).

it as such.[174] Finally, the EPA argues, even if the IWR were inconsistent with Florida's water quality standards it would not matter because the EPA approves states' 303(d) lists by considering their existing, EPA approved, water quality standards.[175]

The FDEP, as Defendant Intervenor, argued that Plaintiffs' arguments were based on erroneous theories: the "one exceedance" theory and the "screening measures equal standards" theory.[176] Based upon Plaintiffs' "one exceedance" theory, the FDEP claimed that a single exceedance of a water quality criterion would be enough to determine a water body is impaired.[177] FDEP argues that it is absurd to believe such a conclusion.[178] Common sense tells us that one bad sample is not enough to identify an entire water body as impaired.[179] The FDEP further argues that this theory conflicts with state law which requires the FDEP to "take into account the variability occurring in nature," and "recognize the statistical variability inherent in sampling and testing procedures."[180]

According to the FDEP, Plaintiffs also based their argument on a "screening measures equal standards" attack on Florida's biological integrity standard and narrative nutrient criterion.[181] This theory plays out in the Plaintiffs' argument that the FDEP "cannot use any sort of screening measure or indicator to determine attainment with its biological integrity standard or narrative nutrient criterion, without those screening measures morphing into standards themselves."[182] The FDEP countered by explaining that "the various screening mechanisms or indicators found in the [IWR] are just that and were not established to be the specific levels or concentrations designed to protect the designated use of a waterbody as is required of a water quality standard."[183] The FDEP argued that water quality standards are required to protect designated uses,[184] and since the screening mechanisms provided for in the IWR are not designed to protect designated uses, they are not revisions to water quality standards.[185]

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174. *Id.* at 13; *see also* 40 C.F.R. 131.21(c)(2)(table).
175. *Id.* at 13-14.
176. Florida Dep't of Envtl. Prot. Memorandum in Support of Its Motion for Summary Judgment, No: 4:02CV408-WS, 2 (N.D. Fla., Tallahassee Division, April 2003) [hereinafter FDEP Memorandum].
177. *Id.* at 7.
178. *Id.* at 7-8.
179. *Id.*
180. *Id.* at 9; FLA. STAT. § 403.021(11) (2003);;*see also* § 403.067(3)(b).
181. FDEP Memorandum, *supra* note 176, at 2-3, 17-20.
182. *Id.* at 3.
183. *Id.* at 19.
184. FLA. ADMIN. CODE ANN. r. 62-302.300(3) (2003).
185. FDEP Memorandum, *supra* note 176, at 2-3, 19-20.

The Court in *Florida Public Interest Research Group Citizen Lobby, Inc. v. EPA* held that "the State of Florida, through the IWR, has neither formally, nor in effect, established new or modified water quality standards or policies generally affecting those water quality standards."[186] The Court explained that according to 40 C.F.R. section 130.7(d)(2):

> If Florida's listing methodology has resulted in a section 303(d) list that is inconsistent with the state's existing, EPA-approved water quality standards codified in chapter 62-302, the EPA would be required to disapprove the list, in whole or in part, and make its own listing decisions as appropriate.[187]

Therefore, "[t]he listing methodology set forth in the IWR . . . cannot possibly have the effect of revising Florida's water quality standards or policies affecting those standards, provided that the EPA complies — as it must — with the requirements of the CWA."[188]

In other words, Florida did not make any changes to its existing water quality standards because it did not formally follow the required procedure for making such changes. Moreover, if the effect of Florida's methodology is to modify its existing water quality standards, the EPA would not approve its resulting impaired waters list. The EPA is required to base its approval of 303(d) lists on states' existing water quality standards that have previously been approved by the EPA. If Florida had revised these standards through the IWR, then the 303(d) list would not be consistent with the "old" standards, which the EPA would look to in making its decision. Furthermore, the EPA has expressed its approval of a listing methodology that stands apart and separate from a state's water quality standards. The EPA document entitled *Consolidated Assessment and Listing Methodology- Toward a Compendium of Best Practices* ("CALM Document"), provides guidance on monitoring and assessment methodologies relative to TMDLs.[189] The EPA's guidance on how a state should describe how it assesses attainment of its water quality standards provides, "[t]he description may be included in the approved [water quality standards] or in other implementing regulations or policies and

186. No: 4:02CV408-WS, 13 (N.D. Fla., Tallahassee Division, May 29, 2003).
187. *Id.* at 12.
188. *Id.*
189. United States EPA, *CALM Document*, 3-2, *available at* http://www.epa.gov/owow/monitoring/calm.html (last visited Mar. 1, 2004).

procedures such as the state . . . listing methodology."[190] Therefore, the FDEP did not violate EPA policy by creating a listing methodology separate from its water quality standards rule.

It is my view that the listing methodology and water quality standards are separate and distinct. Water quality standards are just that — standards. They describe what the quality of water should be. A listing methodology is just that — a scientific method for determining waters that are impaired. The methodology, in other words, is a way of measuring waters in order to determine if they are meeting the standards. Revising the actual method of measuring impairment does not in any way change the standards set for water quality.

IV. THE PRECAUTIONARY PRINCIPLE

The precautionary principle is not expressly mentioned in Florida's IWR, nor the litigation surrounding it. However, it certainly is a subtle, underlying theme apparent in the controversy over Florida's methodology. Therefore, it is worth bringing to the forefront to examine it a little more.

A. What is the Precautionary Principle?

There are many definitions of the precautionary principle. In fact, the principle is often criticized for its indefiniteness and its lack of explicit direction.[191] The precautionary approach does, however, boil down to one theme: it is better to be safe than sorry. In relation to environmental issues, this means that when something poses a risk to human and environmental health, it is better to take action even if the scientific support is lacking. This principle has been cited many times in international environmental issues. In 1992, the Rio Declaration stated:

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[192]

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190. *Id.* at 3-2.

191. *See* Applegate, *supra* note 20, at 16-17.

192. United Nations Conference on Environment and Development: Rio Declaration On Environment and Development, U.N. Doc. A/CONF.151/5/Rev.1, Principle 15 (June 13, 1992), reproduced at 31 I.L.M. 874, 879.

In his article, *The Taming of the Precautionary Principle*, John Applegate explains that two fundamental regulatory principles are embodied by the precautionary principle:

> 1) anthropogenic harm to human health and the environment should be avoided or minimized through anticipatory, preventive regulatory controls; and to accomplish this,
>
> 2) activities and technologies whose environmental consequences are uncertain but potentially serious should be restricted until the uncertainty is largely resolved.[193]

These policies reflect "the value judgment that protection of human and environmental health trumps quantitative measures of risk and economic efficiency."[194]

It is hard not to agree with this principle, especially when considering the harm that pollution can cause to humans and the environment. Where the issue gets sticky is when someone (a corporation or the government, for example) is stuck paying for the precaution. Most people would not want to spend money and resources on something if they cannot prove it will have any effect. Similarly, industries and the government, the entities most often charged with the bill for ridding the world of environmental harms, would much rather analyze the situation and gather concrete evidence before spending their money and resources on an environmental risk. It is this risk assessment that forms the basis of many environmental decisions in this country.[195] According to some, risk assessment "has often stood in the way of protecting human health and the environment," yet to others (again, the government and industry types) it is the "sound science" approach.[196]

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193. Applegate, *supra* note 20, at 13.

194. *Id.*

195. Much of the environmental regulation in the U.S., though, is consistent with the theory of the precautionary principle. *See* Wiener, *supra* note 20, at 220-21; Applegate, *supra* note 20, at 13-15, 68-69, 71-72; Joel Tickner, Carolyn Raffensperger & Nancy Myers, *The Precautionary Principle in Action: A Handbook, Written for the Science and Environmental Health Network*, 3, *available at* http://www.biotech-info.net/handbook.pdf (last visited Mar. 1, 2004).

196. Tickner, Raffensperger & Myers, *supra* note 195, at 14.

B. False Positives and False Negatives

Where the precautionary principle shows up in the context of Florida's IWR, is with the problem of false positives and false negatives. Florida's methodology undoubtedly runs the risk of excluding water bodies from the verified list that are in fact impaired. The reason this would happen is because of the uncertainties and inexactness of science.[197] Due to the variability of scientific measurements, it is entirely possible that data samples could miss a water body that is actually impaired. This problem is viewed as a false negative, "risks thought to be minor that turn out to be serious."[198] False positives, on the other hand, are "risks thought to be serious that turn out to be minor."[199]

The NRC describes these in the context of TMDLs as Type I error, "a false conclusion that an unimpaired water is impaired," and Type II error, "a f alse conclusion that an impaired water is not impaired."[200] The choice on which type of mistake is preferable "will depend on the consequences of the resulting actions (more monitoring, costs to do a TMDL plan, costs to implement controls, possible health risk) and who bears the cost (public budget, private parties, etc.)."[201] As seen in arguments over Florida's methodology, the environmental groups would rather err on the side of false positives because they view one measurement of impairment as one too many, whereas the state and industry groups prefer to err on the side of false negatives because the costs of repairing an unimpaired water body are too great.

It seems to me that the best approach is to err on the side of false negatives for several reasons. First of all, it is more cost effective to implement TMDLs for waters which we are certain are actually in need of them. Taking the precautionary approach and erring on the side of false positives would be wasting time and resources by cleaning up waters that are not impaired, and that could easily and effectively be identified as such with a sound scientific methodology as the one in Florida's IWR. Moreover, it is unlikely that the false negatives would go unnoticed forever. The TMDL program continues to measure waters — just because a water body is determined to be unimpaired does not mean that it will be assumed to be unimpaired forever. Because the IWR is based on a valid scientific approach, it is not likely that a mistake

197. *See* Mishalanie & Ramsey, *supra* note 155.
198. Wiener, *supra* note 20, at 223.
199. *Id.*
200. NATIONAL RESOURCE COUNCIL, *supra* note 23, at 56.
201. *Id.* at 57, n.8.

will never be uncovered. At some point, a water body that is actually impaired will be identified as such.

V. CONCLUSION

In Part II.B. of this paper I mentioned some expectations that the EPA has for the TMDL program. Those included accomplishing cleaner water, better use of science, better protection for water bodies, and better working relationships among people and organizations.[202] Does Florida's IWR meet those goals? My answer is yes. While the true answer remains to be seen in the years to come as the methodology is put to use, it has certainly stood up in the face of criticism and legal challenge. Not only have the courts approved it, but the EPA and NRC support the methodology that Florida has created. Moreover, since the new Rule has been in effect, no one has complained about waters not being listed that are in fact polluted.[203] It is quite possible that the frightening statistics presented by Oliver Houck are frightening because they are based on flawed data. It may be that, were those statistics based on a sound methodology like Florida's, they might not be so frightening after all.

While the inexactness of science may lead to some impaired waters getting overlooked, I believe that Florida has created a rule based on a sound statistical approach, which will result in a better overall assessment of water quality than the previous method did. This approach will allow better protection for water bodies because resources will not be dispensed on unnecessary action. The risk of a small number of false negatives is more acceptable than the risk of a large number of false positives. I believe that the approach desired by environmental groups would result in the latter. While I commend the precautionary principle in theory, it does not always reach the best result in reality. If action were taken on every possible threat that is not backed up by sound evidence, it only takes away resources that could be spent on threats that are in fact real. Therefore, it is better to focus on waters that are listed using a consistent, sound statistical method. I believe that this type of list will actually present reality much better than the old approach did.

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202. *See* United States EPA, *supra* note 2.

203. Interview with Jim Alves, Attorney, Hopping Green & Sams (Nov. 17, 2003).