

**THE LOCATION AND COMMUNITY
DEMOGRAPHICS OF TARGETED ENVIRON-
MENTAL HAZARDOUS SITES IN FLORIDA**

Submitted in Part to the Florida Environmental Equity and Justice Commission

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The founding principle upon which this nation was established is that all persons were initially created equal and are entitled to have their individual human dignity respected. This guarantee of equal treatment has been carried forward in explicit provisions of our federal and state constitutions. It is not by chance that the words “Equal Justice Under Law” have been placed for all to see above the entrance to this nation’s highest court.¹

I. INTRODUCTION

On a basic level, notions of justice and equity are fundamental principles to which our legal and political systems aspire. Likewise, in facing environmental concerns, justice and equity are emerging standards.² In response to a question on what “environmental equity and justice” is, Representative Josephus Eggelletion, Jr., said: “It is a debate about everyone having equal access to environmental protection.”³ Thus, the goal of environmental justice is to administer the protections afforded by our legal and political systems justly and equally to all individuals and communities, not to distribute pollution.

In 1994, the Florida Legislature created the Environmental Equity and Justice Commission (Commission).⁴ The seventeen member commission, appointed by Governor Lawton Chiles, included representatives from the state legislature, state and local

1. Powell v. Allstate Ins. Co., 652 So. 2d 354, 358 (Fla. 1995) (Anstead, J., writing for the majority).

2. See PAT COSTNER & JOE THORNTON, PLAYING WITH FIRE: HAZARDOUS WASTE INCINERATION (A GREENPEACE REPORT) 49 (1991) (“Protection of public health and the environment is, in its entirety, a matter of political and social justice.”).

3. Maribel N. Nicholson & Ralph A. DeMeo, *Air of Equality: An Analysis of Florida’s Environmental Equity and Justice Act*, 68 FLA. BAR J. 112, 112 (Oct. 1994). The Legislature found that “the term ‘environmental equity’ generally refers to consideration of the distribution of environmental risks across population groups and to governmental policy responses to such risk distribution.” 1994 Fla. Laws 94-219 (whereas clause of session law).

4. 1994 Fla. Laws ch. 94-219 (codified at FLA. STAT. §§ 760.85-.853 (1995)).

government agencies, business and industry, environmental advocacy groups, and grass-roots community organizations.⁵ The enabling legislation charged the Commission with the task of determining whether environmental hazards are disproportionately located in minority and low income communities in Florida.⁶ Thus, Florida became one of the first states to sponsor and fund a state-wide study into the issues of environmental justice. The Commission was organized into six reporting subcommittees: (1) Rules and Non-Rules Policies of the Florida Department of Environmental Protection (DEP); (2) Health Effects and Risks; (3) Enforcement and Evaluation; (4) Local Government Site Placement; (5) Case Studies; and (6) Proximity and Demographic Analysis.⁷

This article comprises the proximity and demographic analysis report to the Commission. Accordingly, Part II of this article reviews the environmental justice movement in the United States and cites previous research on environmental equity and justice issues in Florida. Part III discusses the methodology that the Commission used for the proximity and demographic analysis. Part IV presents and discusses the results of the Commission's analyses, discussing the demographic characteristics of Florida, the

5. See FLA. STAT. §§ 760.85(2)(a)-(k) (1995). The members of the Commission were Representative Josephus Eggleton, Jr., Eugene Ravenel, Lee Ann Clements, President Frederick Humphries, Charlan Jackson-Sanders, Cynthia Laramore, Pepe Menendez, Marible Nicholson-Choice, Julian Perez, Stan Posey, Debbie Romanello, Suzi Ruhl, Andree Sanders, Dan Thompson, Senator William Turner (co-sponsor), Peter Ware, and Margaret Williams. Representative Eggleton, co-sponsor of the enabling legislation, served as chairperson of the Commission.

6. See 1994 Fla. Laws ch. 94-219. The Legislature declared there is an affirmative interest in determining within Florida whether penalties assessed against violators in sites located in white communities are disproportionately larger than penalties assessed against polluters in minority communities; whether hazardous waste site evaluations are conducted more slowly and start of cleanup efforts are delayed longer in minority communities; and whether containment as opposed to cleanup is more frequently selected in minority communities.

Id. (whereas clause of session law).

7. Section 760.85(5), *Florida Statutes* (1995) requires that "[t]he commission shall conduct a scientific analysis, including case studies, and submit a written report to the Speaker of the House of Representatives . . ." FLA. STAT. § 760.85(5) (1995). It is this scientific analysis that is presented in this article.

blockgroup proximity to targeted sites, and the relationship between proximity and demographics. Finally, this article concludes that targeted environmental hazardous waste sites are disproportionately located in minority and low income areas in Florida and urges that further research is necessary to expand the scope of the Commission's analyses.

II. BACKGROUND

A. *Environmental Equity and Justice Issues*

The environmental justice movement can be traced back to the late 1970s and early 1980s. Large-scale tragedies—such as the poisoning of the entire community of Love Canal⁸ by 21,800 tons of buried toxic chemicals in 1978⁹ and Union Carbide's 1984 release of a highly toxic pesticide in Bhopal, India which killed more than 2000 people and injured over 200,000 others¹⁰—raised world-wide consciousness to the potential magnitude of environmental tragedies in the modern world.¹¹ But it was not only wide-scale tragedies, such as those in Love Canal or Bhopal, that concerned many Americans; many began to realize the potential for negative effects from many of the facilities that existed in their own

8. See MICHAEL H. BROWN, *LAYING WASTE: THE POISONING OF AMERICA BY TOXIC CHEMICALS* 24-27 (1980); see also Sidney M. Wolf, *Public Opposition to Hazardous Waste Sites: The Self-Defeating Approach to National Hazardous Waste Control Under Subtitle C of the Resource Conservation and Recovery Act of 1976*, 8 B.C. ENVTL. AFF. L. REV. 463, 467 n.13 (1980) (describing the Love Canal tragedy).

9. See LOIS M. GIBBS, *DYING FROM DIOXIN: A CITIZEN'S GUIDE TO RECLAIMING OUR HEALTH AND REBUILDING DEMOCRACY* xvii (1995); see also Ronald A. Christaldi, *Book Review, Dying from Dioxin: A Citizen's Guide to Reclaiming Our Health and Rebuilding Democracy*, 11 J. LAND USE & ENVTL. L. 467, 467-68 (1996) (offering background on the Love Canal tragedy and reviewing Gibbs' book).

10. See Paul Shrivastava, *Bhopal: Anatomy of a Crisis* 64-67 (1987); see also WARD MOREHOUSE & M. ARUN SUBRAMANIAM, *THE BHOPAL TRAGEDY: WHAT REALLY HAPPENED AND WHAT IT MEANS FOR AMERICAN WORKERS AND COMMUNITIES AT RISK* vii (1986); Symposium, *The Bhopal Tragedy: Social and Legal Issues*, 20 TEX. INT'L L.J. 267, 269 (1985).

11. See generally Viki Reath, *The Media's Perspective*, 9 ST. JOHN'S J. LEGAL COMMENT. 531 (1994) (commenting that "the media will have an impact on the environmental justice movement . . . [because] there is a sense of reality that comes through the television, newspapers, and magazines").

communities.¹² On a fundamental level, questions concerning the value of human health and the environment in relation to monetary and industrial interests arose.¹³ In an effort to respond to these concerns,¹⁴ Congress passed the Emergency Planning and Community Right to Know Act of 1986 (EPCRA),¹⁵ empowering citizens with critical information, raising environmental awareness, and purporting to offer environmental protections.¹⁶

In 1983, the federal government, led by the District of Columbia delegate and the chairman of the Congressional Black Caucus, Walter Fauntroy, directed the United States General Accounting Office (GAO) "to determine the correlation between the location of hazardous waste landfills and the racial and economic status of surrounding communities."¹⁷ This was the first wide-scale review of environmental justice studies.¹⁸ The GAO study concluded that three out of four communities where hazardous waste landfills were sited contained a majority of African Americans.¹⁹

12. See Douglas L. Anderton et al., *Hazardous Waste Facilities: "Environmental Equity" Issues in Metropolitan Areas*, 18 EVALUATION REV. 123, 123-24 (1994).

13. See, e.g., Heather Fisher Lindsay, *Balancing Community Needs Against Individual Desires*, 10 J. LAND USE & ENVTL. L. 371, 373 (1995) (presenting a radical challenge to traditional views on property and questioning the current level of significance placed on human health and the environment where profits are concerned); cf. Frank B. Cross, *Natural Resource Damage Valuation*, 42 VAND. L. REV. 269, 302-09 (1989) (describing how market valuation operates).

14. See *Carbide Accident May Speed Controls, Right-to-Know, Emergency Response Rules*, 16 Env'tl. Rep. (BNA) 635 (Aug. 16, 1985).

15. Pub. L. No. 99-499, tit. III, § 300(a), 100 Stat. 1729 (1986) (codified as amended at 42 U.S.C. §§ 11001-11050 (1988 & Supp. V 1993)); see Sidney M. Wolf, *Fear and Loathing About the Public Right to Know: The Surprising Success of the Emergency Planning and Community Right-to-Know Act*, 11 J. LAND USE & ENVTL. L. 217, 218-19 (1996); see also Steven J. Christiansen & Stephen H. Urquhart, *The Emergency Planning and Community Right to Know Act of 1986: Analysis and Update*, 6 B.Y.U. J. PUB. L. 235, 235-36 (1992).

16. EPCRA has two main objectives. The first objective is "to provide the public access to information concerning hazardous chemicals in the community." Christiansen, *supra* note 15, at 236. The second objective is "to use [the provided information] to formulate and administer local emergency response plans in case of hazardous chemical release." *Id.*

17. See Anderton et al., *supra* note 12, at 126.

18. See *id.*

19. See U.S. GENERAL ACCOUNTING OFFICE, *SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES* 3 (1983); see also Anderton et al., *supra* note 12, at 126.

In 1987, the United Church of Christ Commission for Racial Justice (CRJ) found a significant correlation between the number of minorities in a community and the existence of a toxic waste site exists in that area.²⁰ The CRJ report stated that “three out of every five Black and Hispanic Americans live[] in communities with uncontrolled toxic waste sites.”²¹ This led some to conclude that minorities were disproportionately harmed both at their jobs and in their communities.²²

However, despite the resounding conclusions of the CRJ study and the fact that it has been revisited with similar results,²³ critics have consistently challenged the findings of the CRJ study. Some have suggested that market dynamics, not race or poverty, is the most significant factor in the siting of these undesirable land uses.²⁴ Others studies have challenged the methodology of the CRJ study,²⁵ the reliability of the data used,²⁶ and even the conclusions of the study.²⁷

20. See UNITED CHURCH OF CHRIST COMMISSION FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES 13 (1987) [hereinafter United Church of Christ].

21. *Id.* (“This figure represents more than 15 million African Americans and 8 million Hispanics. Approximately 2 million Asian/Pacific Islanders and 700,000 American Indians lived in such communities.”).

22. See Robert D. Bullard, *Anatomy of Environmental Racism and the Environmental Justice Movement*, in CONFRONTING ENVIRONMENTAL RACISM, VOICES FROM THE GRASSROOTS 15 (R. Bullard ed., 1993); see also Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619, 620 (1992).

23. See generally BENJAMIN A. GOLDMAN & LAURA FITTON, TOXIC WASTES AND RACE REVISITED: AN UPDATE OF THE 1987 REPORT ON THE RACIAL AND SOCIOECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES (1994).

24. See, e.g., Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1388-92 (1994) (discussing market dynamics and the distribution of undesirable land uses).

25. See Vicki Been, *Analyzing Evidence of Environmental Justice*, 11 J. LAND USE & ENVTL. L. 1, 2-8 (1995). *Contra* Colin Crawford, *Analyzing Environmental Justice Evidence: A Suggestion for Professor Been*, 12 J. LAND USE & ENVTL. L. 104 (1996).

26. See Been, *supra* note 25, at 8-12; see also Vicki Been, *What's Fairness Got to do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001, 1009 n.39 (1993).

27. See JOHN MICHAEL OAKES ET. AL., SOCIAL AND DEMOGRAPHIC RESEARCH INSTITUTE (SADRI), ENVIRONMENTAL INEQUITY, INDUSTRIAL SITING, AND THE STRUCTURE OF AMERICAN CITIES 2-3 (1994) [hereinafter SADRI study]; see also Douglas L. Anderton et al., *Environmental Equity: Evaluating TSDF Siting Over the Past Two Decades*, Waste Age, July 1994, at 100. Although the SADRI study found no significant correlation between race and

The Environmental Justice movement has created two paths of inquiry. The first considers the distribution of both benefits and burdens.²⁸ Regardless of the process, if the outcome results in a disproportionate number of LULUs in disadvantaged or minority communities, then an injustice exists.²⁹ The second investigative level focuses on the process and concerns itself with whether the same criteria are applied in each siting.³⁰ If the same criteria are applied at each site, no injustice exists.³¹ However, these levels are not mutually exclusive. The Environmental Justice movement is concerned with both the process and the outcome.³² Given this dual concern, those concerned with issues of environmental justice and equity gather data on “the distributional implications of the way in which our society seeks to manage environmental threats and improve and protect environmental quality.”³³ The Environmental Justice movement sought a fair distribution of those hazards.³⁴

the siting of locally undesirable land uses (LULUs), it has been criticized because it was funded in part by the waste management industry. See Anderton et al., *supra* note 12, at 123-24 (authors’ note).

28. See Michael Greenberg, *Proving Environmental Inequity in Siting Locally Unwanted Land Uses*, 4 RISK: ISSUES IN HEALTH & SAFETY 235, 236 (1993).

29. See *id.* Mr. Greenberg identifies “inequities” rather than “injustices” in his discussion of the movement.

30. See *id.*

31. See *id.* (commenting that if “appropriate environmental, health, physical, legal, economic, and political criteria are applied to every area, then the results are fair even if they disproportionately burden some groups and benefit others”).

32. See Symposium, *Race, Class, and Environmental Regulation*, 63 U. COLO. L. REV. 839, 840 (1992). For an overview of the general goals and concerns of the Environmental Justice Movement, see Bullard, *supra* note 22, at 15, 17-19

33. Been, *supra* note 25, at 1; see also Richard J. Lazarus, *Pursuing “Environmental Justice:” The Distributive Effects of Environmental Protection*, 57 NW. U. L. REV. 787, 787-88 (1993). The impetus of these investigations into the distributional impacts is often traced to the protests against the siting of a landfill in an African American community in Warren County, North Carolina in 1982. See, e.g., Rachel D. Godsfil, Note, *Remediating Environmental Racism*, 90 MICH. L. REV. 394 (1991) (commenting that while the protesters’ campaign failed, the protest “focused national attention on the relationship between pollution and minority communities”).

34. See Richard J. Lazarus, *The Meaning and Promotion of Environmental Justice*, 4 MD. J. CONTEMP. LEGAL ISSUES 1, 1 (1993) (“‘Environmental Justice’ focuses on the distribution of environmental hazards across society and seeks a fair distribution of those hazards.”);

To the extent that the environmental justice debate has focused on why hazardous facilities are disproportionately located in minority or other disadvantaged communities, it has missed the mark. There are four relevant questions from a societal viewpoint. The first is whether disproportionate sitings exist. If so, the second question is whether these disproportionate sitings have detrimental effects on their host communities. If both of these questions are affirmatively answered, then one must ask whether the disproportional siting is due to a problem in the process, the outcome, or both. Finally, if it is established that such a problem exists, that its effects are negative, and that the locus of the problem is located, then potential solutions to that problem must be explored.

B. Environmental Equity and Justice Issues in Florida

In a report to the Public Interest Law Section of the Florida Bar, Dr. M. Elliot Vittes presented findings on the proximity of minority groups to Toxic Release Inventory (TRI)³⁵ facilities (SWS).³⁶ Demographic information was identified at the census block group summary level.³⁷ The proximity of Florida's block groups to the closest TRI reporting facility was measured by triangulation and reported in units of miles.³⁸ Dr. Vittes reported that race, ethnicity, and

see also Richard J. Lazarus, *Distribution in Environmental Justice: Is There a Middle Ground?*, 9 ST. JOHN'S J. LEGAL COMMENT. 481, 483-84 (1994).

35. Section 313 of EPCRA requires manufacturing facilities that surpass threshold levels measured in quantity of toxic chemicals to submit an annual report outlining that facilities use, manufacture, or processing of several hundred toxic chemicals. *See* 42 U.S.C. § 11023 (1988 & Supp. V 1993). This data is compiled by the United States Environmental Protection Agency (EPA) and is collectively known as the TRI. *See* Wolf, *supra* note 15, at 229-30. Because of the critical information that this report provides to the general public, section 313 has been called "[t]he most far-reaching, important and controversial right-to-know provision in EPCRA." *Id.* at 229.

36. *See* M. ELLIOT VITTES & PHILLIP H. POLLOCK, III, POVERTY, POLLUTION AND SOLID AND HAZARDOUS WASTE SITING: HOW STRONG ARE THE LINKS? (1994). Dr. Vittes conducted that study at the University of Central Florida in Orlando. *See* Nicholson & DeMeo, *supra* note 3, at 113.

37. *See* VITTES, *supra* note 36, at 4. The 1990 census data, the most recent data available, was used. *See id.*; *see also* MARK T. MATTSON, ATLAS OF THE 1990 CENSUS (1992) (outlining the data collected in the 1990 census).

38. *See* VITTES, *supra* note 36, at 4.

income are critical in explaining proximity.³⁹ Minority and low income households were found to be over-represented at closer proximities and under-represented at farther proximities.⁴⁰ The same results held true even when other contributing factors, such as (1) urban versus overall population; (2) manufacturing versus all workers; (3) median house age; and (4) median house value were controlled for using regression analysis.⁴¹ When Dr. Vittes included other pollution sources, such as (1) air point source emissions; (2) treaters, storers and disposers (TSDs) of Resource, Conservation and Recovery Act (RCRA)⁴² hazardous waste; and (3) National Priority List (NPL)⁴³ and non-NPL sites, his previous findings were reinforced.⁴⁴ TRI facilities represented “the closest facilities for three-quarters of the households in Florida, making them an important indicator of potential pollution exposure.”⁴⁵ Black households were over-represented at close distances to each source, and low income Black households were at a higher ratio compared to low income White households.⁴⁶ With communities ostensibly suffering detrimental environmental and health consequences,⁴⁷ the time has come for action. It is with this

39. See M. ELLIOT VITTES & PHILLIP H. POLLOCK, III, RESEARCH ON ENVIRONMENTAL EQUITY ISSUES IN FLORIDA (1994).

40. See *id.*

41. See VITTES, *supra* note 36, at 6.

42. The Resource, Conservation and Recovery Act of 1976, Pub. L. No. 94-580, 90 Stat. 2795 (1976) (codified as amended at 42 U.S.C. §§ 6921-6939e (1988 & Supp. V 1993)). RCRA is actually an amendment to the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k. See Robert L. Rhodes, *Federal Resource Conservation and Recovery Act*, in FLORIDA ENVIRONMENTAL AND LAND USE LAW 11-1, 11-3 (1991 & Supp. 1995) (outlining RCRA).

43. The NPL is a list of hazardous substance releases that are prioritized over other sites for long term evaluation and response. See 40 C.F.R. § 300.5 (1995). For a discussion of the NPL, see WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW: HAZARDOUS WASTES AND SUBSTANCES 573-77 (1992 & Supp. 1996). By 1990, the NPL had 1246 sites listed, with governmental estimates that 1700 sites could be added by the year 2020. See *id.* at 573 (1992), 68-69 n.73 (Supp. 1996).

44. See M. ELLIOT VITTES & PHILLIP H. POLLOCK, III, POVERTY, POLLUTION, AND SOLID AND HAZARDOUS WASTE SITING: THE LINKAGE FOR DIFFERENT SOURCES 44 (1994).

45. *Id.* at 50.

46. See *id.* at 46.

47. For example, the community of Pensacola, Florida has been suffering horrible effects from continual toxic poisoning. See Bill Kaczor, *Residents Live and Die Under the Shadow of Mount Dioxin*, TALLAHASSEE DEM., Feb. 18, 1996, at 10B; see also EPA to Move Families from Toxic Site, TAMPA TRIBUNE, Oct. 4, 1996, at Florida/Metro 7; Christaldi, *supra*

background that the Florida Legislature charged the Commission with the examination of the possible disproportionate location of targeted environmental hazardous sites in minority and low income communities in Florida.

C. Targeted Environmental Hazardous Sites

The term environmental hazard can refer to a wide variety of phenomena that have the potential to cause adverse health effects by emitting toxic and/or hazardous chemical and substances into the environment.⁴⁸ Targeted environmental hazardous sites were defined by the enabling legislation as “a representative sample of sites in both minority and low-income neighborhoods, as well as other socioeconomic neighborhoods.”⁴⁹ Other targeted sites included businesses and facilities regulated by DEP.⁵⁰ DEP-regulated businesses included government-owned facilities, facilities regulated by DEP through delegation to any local governments or water management districts, and Superfund NPL sites.⁵¹

The Commission subsequently selected six different types of hazardous sites for review: (1) landfills, disposal, reduction, and resource recovery sites (FLS); (2) large quantity generators (LQG); (3) NPL sites; (4) solid waste facilities (SWF); (5) TRI reporting facilities; and (6) TSD facilities. In all, 3,287 targeted environmental hazardous sites were identified and located in Florida. (See Table 1).

1. National Priority List

The most serious environmental hazardous waste sites in Florida are those listed by the EPA on the Superfund NPL. The

note 9, at n.20; Luke W. Cole, *Environmental Justice in the Classroom: Real Life Lessons for Law Students*, 96 W. VA. L. REV. 1051 (1994); Crawford, *supra* note 25 (discussing a case study in Mississippi); Greenburg, *supra* note 28, at 247-50 (discussing a New Jersey case study).

48. See H. STEVEN DASHEFSKY, ENVIRONMENTAL LITERACY 118 (1993). Hazardous waste “refers to all substances that pose an immediate or long-term danger to the health or well-being of humans or to the environment” *Id.*

49. FLA. STAT. § 760.85(5)(a) (1995).

50. *See id.*

51. *See id.*

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)⁵² was extended and amended by the Superfund Amendments and Reauthorization Act (SARA)⁵³ in 1986. This legislation classifies priority sites eligible for federally-funded cleanup and remediation.⁵⁴ Most of the NPL sites have multiple contaminants and contaminated media.⁵⁵ The primary contaminants found at the fifty-nine NPL sites in Florida include: heavy metals such as arsenic, cadmium, chromium, lead, manganese, nickel, and zinc at 78% of the sites; volatile organic compounds (VOCs) at 64% of the sites; polychlorinated biphenyls (PCBs) at 17% of the sites; pesticides and herbicides at 17%; creasotes at 16% of the sites; petrochemicals and explosives at 7% of the sites; and a broad category of other chemicals including cyanide, fluoride, nitrate, sulfate and ammonia at 5% of the sites; dioxin, acids, and gases at 2% of the sites.⁵⁶ Contaminated media include groundwater at 93% of the sites, soil at 84%, surface water at 44%, sediments at 28%, and air at 3%.⁵⁷ Different activities are responsible for hazardous waste site contamination, including recyclers, storage and disposal facilities, and landfills responsible for 43%; manufacturing facilities responsible for 22%; chemical and pesticide manufacturers responsible for 14%; petroleum and

52. Pub. L. No. 96-510, tit. I, § 101, 94 Stat. 2767 (1980) (codified as amended at 42 U.S.C. §§ 9601-9675 (1988 & Supp. V 1993)). One of the principle purposes of CERCLA was "to achieve prompt cleanup of hazardous waste sites and to impose the cost of cleanup on those responsible for contamination." Richard L. Bradford, *The Personal Injury Endorsement: An Unwarranted Straining To Obtain Insurance Coverage for Environmental Damage*, 11 J. LAND USE & ENVTL. L. 111, 115-16 (1995); see also *City & County of Denver v. Adolph Coors Co.*, 829 F. Supp. 340, 344 (D. Colo. 1993).

53. Pub. L. No. 99-499, 100 Stat. 1613 (1986) (codified as amended at 42 U.S.C. §§ 9601-9675 (1988 & Supp. V 1993)). For an overview of the SARA amendments, see Timothy B. Atkeson et al., *Analysis of the Superfund Amendments and Reauthorization Act of 1986*, in SUPERFUND DESKBOOK 1-58 (1986).

54. See 40 C.F.R. § 300.5 (1995).

55. See FLORIDA CENTER FOR PUBLIC MANAGEMENT, *COMPARING FLORIDA'S ENVIRONMENTAL RISK: RISK TO FLORIDA AND FLORIDIANS*, Technical Appendix 102 (Sept. 1995) [hereinafter *Florida's Risk*].

56. See *id.*

57. See *id.*

refining operations responsible for 9%; federal facilities responsible for 7%; and electroplating operations responsible for 5%.⁵⁸

2. Florida List Sites

Thirty-nine state-funded action sites (FLS) in Florida are managed and remediated by DEP's Bureau of Waste Cleanup.⁵⁹ Designation as a state-funded site is based upon the measurement of the relative risk to public health, the likelihood of groundwater contamination, and the potential for harmful contamination of the environment.⁶⁰ Twenty-one of these state-funded sites are active sites with on-going remediation, while eighteen have been remediated to the point where they no longer pose a threat to humans or the environment.⁶¹ Most "active sites have contaminants which have significantly impacted ground water quality."⁶² These sites include landfills and dumps, gas and/or petroleum sites, chemical manufacturers and/or processors, industrial solvent disposal sites, pesticide disposal sites, electroplaters, wood preserving sites, waste oil disposal sites, battery recyclers, and other lead recovery sites.⁶³ The multiple contaminants found in the groundwater and soil at these sites include but are not limited to polycyclic aromatic hydrocarbons (PAHs) such as benzo[a]pyrene, PCBs, perchloroethylene (PCE), dichlorodiphenyltrichloroethane (DDT), and its metabolite dichlorodiphenyldichloroethane (DDD), and metals such as arsenic, chromium, copper, lead and zinc.⁶⁴ Activities responsible for the contamination are primarily former industrial and manufacturing facilities, and gasoline service stations.⁶⁵

58. See *id.* at 338.

59. See *id.* at 220.

60. See *id.* at 338.

61. See *id.* at 42.

62. *Id.*

63. See *id.* at 102.

64. See *id.* at 103.

65. See *id.*

3. *Toxics Release Inventory*

EPCRA mandated TRI reporting.⁶⁶ Over 500 TRI facilities in Florida are required to submit estimates of their permitted and accidental release emissions to the TRI database, which provides release information for entire geographic areas.⁶⁷ Five compounds account for over 60% of the TRI releases and transfers in the state: phosphoric acid (24%), methanol (16%), ammonia (10%), hydrochloric acid (6%), and ammonium nitrate solution (4.8%).⁶⁸ The main sources for these releases and transfers are phosphate mining and the manufacture and production of fertilizer, pulp paper, and aluminum.⁶⁹ Based upon volume estimates, the most commonly released chemicals in Florida are ammonia, sulfuric acid, and chlorine.⁷⁰ Facilities which “typically use or store these chemicals include refrigeration facilities (e.g., beverage plants and supermarket warehouses), wastewater treatment plants, drinking water plants, wholesalers and chemical manufacturers” and utilities.⁷¹ In 1992 approximately 16,175 pounds of ammonia, 410 pounds of chlorine, and 96,631 pounds of sulfuric acid were accidentally released, above permitted levels, into the environment.⁷² Based upon the TRI emissions data for 1993, approximately 24,856,630 pounds of phosphoric acid, 7,398,672 pounds of ammonia, 6,576,113 pounds of methanol and 6,203,007 pounds of hydrochloric acid were released by permit into the

66. See discussion *supra* Part II.B.

67. In 1993, there were 512 reporting facilities in Florida. ENVIRONMENTAL PROTECTION AGENCY, TOXICS RELEASE INVENTORY: FLORIDA SUMMARY (1993) [hereinafter 1993 TRI]; see also Wolf, *supra* note 15, at 323, Appendix 5.

68. See 1993 TRI, *supra* note 67; see also Wolf, *supra* note 15, at 323, Appendix 5.

69. In 1993, the top ten facilities for total releases in Florida according to the TRI data from highest to lowest were IMC Fertilizer, Inc., Occidental Chemical Corp., Monsanto Co., Kaiser Aluminum & Chemical, IMC-Argico Co., Cargill Fertilizer Inc., U.S. Agri-Chemicals Corp., ITT Rayoner Inc., CF Industries Inc., and Buckeye Florida L.P. See 1993 TRI, *supra* note 67; see also Wolf, *supra* note 15, at 324, Appendix 6.

70. See 1993 TRI, *supra* note 67.

71. FLORIDA'S RISK, *supra* note 55, at 29.

72. See *id.*

environment.⁷³ Other chemicals emitted included sulfuric acid, chlorine, acetone, and toluene.⁷⁴

73. See 1993 TRI, *supra* note 67; see also Wolf, *supra* note 15, at 323, Appendix 5.

74. See FLORIDA'S RISK, *supra* note 55; see also VITTES & POLLOCK, *supra* note 39.

4. Large Quantity Generators, Treaters/Storers/Disposers and Solid Waste Facilities

LQG, TSD, and SWS sites may legally store, use, or treat toxic or hazardous substances.⁷⁵ Only some of these sites are known to have released hazardous materials into the environment. These sites are regulated and monitored by DEP to prevent accidental releases or spills and to mandate notification upon such release or spill.⁷⁶

D. Potential Adverse Health Effects

A broad range of potential adverse acute and chronic health effects are associated with exposure to the contaminants found in media at NPL and FLS, TSD, LQG, and SWS sites and toxic emissions from TRI facilities.⁷⁷ These health effects include aggravation of respiratory diseases, such as bronchitis and asthma; skin, eyes, ear, nose, mouth, and respiratory tract irritation and sensitization; damage to brain, kidneys, lungs and liver; known and possible cancer causing agents mainly via inhalation; headache, convulsions, coma, central nervous system depression and toxicity.⁷⁸

III. DATA COLLECTION AND ANALYSIS

A. Demographic Variables

Many of the prior environmental justice research studies defined the affected area in overly-broad geographic terms.⁷⁹ As a result, the studies reached conclusions from data that would not be

75. See FLA. STAT. § 403.707(1) (1995) (“[In]o solid waste management facility may be operated . . . without an appropriate and currently valid permit issued by the department”); see also FLA. ADMIN. CODE r. 64-701 (1995) (containing DEP regulations for permitting most solid waste management facilities).

76. See FLA. STAT. § 403.708(1) (1995) (prohibiting disposal of a waste other than in a manner approved by DEP); see also FLA. STAT. § 403.726 (1995) (allowing DEP to seek judicial or injunctive relief on the occurrence of an imminent hazard caused by hazardous waste).

77. See FLORIDA'S RISK, *supra* note 55, at 108.

78. See *id.*

79. See, e.g., Mark Monmonier, *Zip Codes, Data Compatibility, and Environmental Racism*, 2 GIS L. 4, 4-5 (1994).

valid if a smaller, more consistent geographic unit were examined. The Census Bureau reports demographic information in a summary form that varies according to geographic area,⁸⁰ e.g., state, county, census tract, census blockgroup, and census block.⁸¹ Blockgroups generally contain between 250 and 550 housing units, with the ideal size being 400 housing units. The Commission report was performed using the blockgroup summary level because the blockgroups offered the smallest geographic area in which all the demographic variables selected by the Commission were reported by the Census Bureau. In conducting their analysis, the Commission selected twelve demographic variables having a potential impact on the proximity and surrounding community demographics of environmental hazardous sites. (See Table 2).

B. Fifteen Study Counties

From each of the five water management districts across the state of Florida,⁸² three counties with the highest, lowest, and median population density (number of persons per square mile) were selected. (See Table 3). The fifteen selected study counties contain 1589 census blockgroups and 571 targeted environmental hazardous sites. (See Table 4).

The enabling legislation⁸³ specifically charged the Commission with the task of examining whether environmental hazardous sites in Florida were disproportionately located in minority and low income communities or other socioeconomic communities.⁸⁴ To answer this question, the density, minority, and poverty variables were stratified into three categories: high, medium, and low. Cut-off points for the categories were determined by ranking the 1589

80. See MATTSON, *supra* note 37.

81. See *id.*

82. The Water Management Districts are drawn along hydrologic boundaries. See FLA. STAT. § 373.069 (1995); see also Ronald A. Christaldi, *Sharing the Cup: A Proposal for the Allocation of Florida's Water Resources*, 23 FLA. ST. U. L. REV. 1063, 1073 (1996); Donna R. Christie, *Florida*, in WATER AND WATER RIGHTS 289 (1991 & Supp. 1995); Sidney F. Ansbacher & Doug Brown, *A Proposal for Regional Water Management Districts to Regulate Consumptive Use in Minnesota*, 10 HAMLIN J. PUB. L. & POL'Y 235, 248 (1989).

83. See discussion *supra* Part I.

84. See FLA. STAT. § 760.85 (1995).

census blockgroups in ascending order, by the %Minority, %Poverty, and #Density populations and by determining the percentages or numbers separating the lower, middle, and upper third ranges of the blockgroups. (See Table 5). The three categories allowed for a comparison of differences in proximity and demographics among blockgroups and communities with respect to environmental hazardous sites.

C. Proximity and Demographic Analyses

The proximity analysis was performed by measuring the distance from the center of a census blockgroup to the nearest targeted environmental hazardous sites. (See Figure 1). This analysis was completed for the 1589 block groups in the fifteen study counties and the 3287 targeted environmental hazardous sites. Distance or proximity was characterized in terms of high, medium, and low Minority (MIN), Poverty (POV), and Density populations.

The demographic analysis was performed by calculating the community demographics of persons and households within 0.5, 1.0, and 2.0 miles of an environmental hazardous site. (See Figure 2). This analysis was completed for the 3287 targeted environmental hazardous sites using the twelve demographic variables in Table 1. Blockgroups were weighted proportionately according to the area within the mile perimeter and the number of persons or households within the blockgroup. A weighted average of the census demographic variables was then calculated for each site. Demographics were characterized in terms of high, medium, and low Minority (MIN), Poverty (POV), and Density populations.

All raw data was generated from the Florida Department of Environmental Protection Geographical Information Systems (GIS) databases, and the Census of Population and Housing, 1990: Summary Tape File 3A (Florida), provided by the United States Bureau of the Census (1992). The GIS databases contained information on environmental hazardous sites and census blockgroups identified by geographic coordinates. The data was analyzed by regression analysis, analysis of variance, and comparison of means and was graphed using Statview Integrated Data Analysis & Presentation System, Abacus Concepts, Inc.

IV. RESULTS AND DISCUSSION

A. *Selected Demographic Characteristics of Florida and the Fifteen Study Counties*

In 1990, the minority and poverty populations of Florida were 26.7% and 12.8% respectively. Eighty-six percent of the households were not connected to a public sewer, and 56% of the population older than twenty-five held a high school degree or less. Fourteen percent of the households were not connected to a public or private water company, and 32% were renter-occupied. (See Table 6).

In the fifteen study counties, the lowest density counties were 86.4% rural, medium minority (20.4%), and high poverty (20.3%), with over 50% of households not connected to public or private company water. Seventy-five percent of the residents did not have a college degree, and 42.4% were employed in farming, forestry, fishing, precision production, craft, repair, operator, fabricator, and laborer occupations. These demographics were generally less for the median density counties and even smaller for the highest density counties. The average percent Minority, Rent, Language, and Origin for the study counties were lower than the state averages. The average percent Poverty, Water, Sewer, Occupation, Rural, and Education were higher. (See Table 6).

1. *Population Density of 1589 Blockgroups*

Population density may be a factor in the degree of exposure. Previous studies citing the proportion of minority or low income residents in a given host community did not provide information about how many people are actually exposed to environmental hazards.⁸⁵ For example, given that African Americans presently comprise 12.4% of the nation's populations,⁸⁶ a host community of 1000 residents, 20% of whom are African American, would be considered "minority," while a host community of 6000 residents, 10% of whom are African American, would not. By overlooking

85. See UNITED CHURCH OF CHRIST, *supra* note 20; see also SADRI study, *supra* note 27.

86. See U.S. NEWS & WORLD REPORT, NEW WORLD OF NATIONS: TODAY'S ALMANAC 46 (1995).

population density, the studies fail to point out that more African Americans, 600 versus 200, would be exposed to the pollution in the second, non-minority community, than in the first.

Figure 3 shows the average population density of the blockgroups in the selected study counties characterized by high, medium, and low minority and poverty blockgroup populations. There was an average of 5,900 persons per square mile in the high density blockgroups, 3,000 in the medium, and 500 in the low. (See Figure 3b). High minority blockgroups had an average of 4,000 persons per square mile, medium minority blockgroups 3,000, and low minority blockgroups 2,600. (See Figure 3a). High and medium poverty blockgroups had a population density of 3,200, and low poverty blockgroups had a population density of 2,800 persons per square mile. (See Figure 3c).⁸⁷

2. Minority and Poverty Populations of the 1589 Blockgroups

Figure 4 shows the average percent minority populations of the minority blockgroups. The high minority blockgroups were 60% minority and 27% poverty; the low minority blockgroups averaged were 2% minority and 8% poverty; and the medium minority blockgroups were 12% minority and 10% poverty. (See Figures 4a and 4b). Figure 5 shows the average percent poverty populations of the poverty blockgroups. The high poverty blockgroups were 45% minority and 30% poverty; the low poverty blockgroups were 8% minority and 4% poverty; and the medium poverty blockgroups were 13% minority and 10% poverty. (See Figures 5a and 5b). The results in Figures 4 and 5 show that the high minority and high poverty blockgroups have twice the average levels of %Minority and %Poverty populations compared to the state levels shown in Table 6.

B. Blockgroup Proximity to Targeted Sites

1. Average Blockgroup Distance to 3287 Hazardous Sites

87. Florida Department of Environmental Protection Geographical Information Systems (GIS), databases [hereinafter GIS database]; United States Bureau of the Census, Census of Population and Housing, 1990: Summary Tape File 3A (Florida) (1992) [hereinafter Census database].

Figure 6a shows that the average distance in miles from the center of a blockgroup to a targeted environmental hazardous site was: 15 miles to an FLS site, 12.5 miles to an NPL site, 8.5 miles to a TSD site, 3.5 miles to a TRI site, 3.0 miles to an LQG site, and 2.0 miles to a SWS site. When blockgroup distance was characterized by blockgroup density (See Figure 6b), there was an increase in the average distance from low density blockgroups to hazardous sites and a decrease in the average distance from high and medium density blockgroups to hazardous sites. The results in Figure 6 show that blockgroups tend to be closest to solid waste facilities (SWS) and furthest from FLS sites. Thus, blockgroup density can be a factor in the distance from a blockgroup to a hazardous site.

Figure 7 shows average blockgroup distance, characterized by the minority and poverty blockgroup populations. Figure 7a shows that the high and medium minority blockgroups were closer to hazardous sites than the low minority blockgroups. Figure 7b shows that characterization of blockgroup distance by the blockgroup poverty population did not affect the blockgroup distance to a targeted site. The results in Figure 7 show that blockgroup minority populations may be a factor in the blockgroup distance to a hazardous site.

2. Relationship Between Proximity and Demographics

The relationship between the proximity of the 3,287 targeted sites and 1,589 census blockgroups demographics is shown in Table 7. The results indicate that, except for FLS sites, as the percent minority population of the blockgroup increased the distance from the blockgroup to the nearest targeted environmental hazardous site decreased. This means that blockgroups with high minority populations have a higher number of hazardous sites located in the area and, conversely, that blockgroups with low minority populations have fewer hazardous waste sites located nearby. This relationship was also true between persons who were foreign born (%Citizen) and LQG and NPL sites; persons speaking a language other than English at home (%Language) and SWS, TRI, and TSD sites; renter-occupied households (%Rent) and FLS, LQG, NPL, and TRI sites; households not connected to public or private company water (%Water) and FLS and NPL sites; and population density

per square mile (%Density) and LQG, TRI, and TSD sites. The percent of households located in a rural area (%Rural) showed the opposite relationship. The %Rural decreased as the distance from the blockgroup to the site decreased for all of the targeted sites. Thus, blockgroups with a high percentage of rural households have a lower number of hazardous sites located in the area and, conversely, blockgroups with low percentages of rural households have a higher number of hazardous sites located nearby. This relationship was also true between %Poverty and LQG sites; %Citizen and FLS sites; %Sewer and FLS sites; and %Water and TSD sites. The regression results also showed that the no relationship between blockgroup %Poverty, %Occupation, and %Sewer and their proximity to hazardous sites, except for FLS, LQG, and SWS sites.

C. Community Demographics Around Targeted Sites

1. 3287 Targeted Environmental Hazardous Sites

This analysis calculated the demographic characteristics of communities within 0.5, 1.0, and 2.0 mile perimeters around targeted environmental hazardous sites. Perimeter circles were drawn around each site (See Figure 2), and the percentages of the twelve demographic variables, defined in Table 1, were calculated for those populations and households within the perimeter. Results are reported for communities within two mile perimeters around the 3287 targeted sites in Florida. (See Table 8).

Table 8 shows that, except for %Education, %Occupation, and %Sewer, community demographics within two miles around the targeted sites were disproportionately represented compared to the state demographics in Table 6. %Origin, %Language, %Minority, and %Rent demographics were substantially higher for communities within the two mile perimeters. %Rural and %Sewer were substantially lower. %Poverty was somewhat higher.

The summation of the total number of persons (#Persons) within two mile perimeters around each of the 3,287 sites (See Table 8) equaled 20,102,609 people which was 7,155,540 more people than the total state population of 12,947,069. This means that people and households within two miles of the targeted sites were exposed to multiple sites.

2. 571 Selected Targeted Sites in the Fifteen Study Counties

Multiple exposure occurred to a greater extent in the fifteen study counties. The summation of the total number of persons (#Persons) within two mile perimeters of the targeted sites was 15,549,333 compared to a total population of 2,862,495 in the fifteen study counties. (See Table 9).

3. 571 Sites Characterized by Minority and Poverty Demographics

Table 9 shows the community demographic within two mile perimeters around the six types of targeted sites. Figures 8 through 17⁸⁸ show the same community demographics characterized by high, medium, and low minority and poverty populations. Figure 8 shows that when community demographics around targeted sites were characterized by high, medium, and low minority populations a disproportionate representation of %Minority (See Figure 8a) and %Poverty (See Figure 8b) populations in the high minority communities existed around the targeted sites compared to the average %Minority and %Poverty within two mile perimeters shown in Table 9.

Figure 9 shows that when community demographics around targeted sites were characterized by high, medium, and low poverty populations, there was a disproportionate representation of %Minority (See Figure 9a) and %Poverty (See Figure 9b) populations in the high poverty communities existing around the targeted sites compared to the average %Minority and %Poverty within two miles shown in Table 9.

Figure 10b shows that %Occupation was disproportionate within two miles for high and medium poverty communities compared to low poverty communities and was also higher than %Occupation in Table 9. Figure 11a shows that the %Renter-occupied households were disproportionate in high and medium minority communities compared to low minority communities for all site types and was also higher than %Rent in Table 9. Figure 12b shows a similar disproportion for high and medium poverty

88. In Figures 8 through 17, any absence of bars for a particular statistic indicates a lack of data for that population-type within two miles of the specified hazardous waste site.

communities around FLS, LQG, and NPL sites. Figure 11b shows disproportion in %Education for high and medium poverty communities compared to low poverty communities for all hazardous site types and was also higher than %Education in Table 9. Figure 13b shows disproportion in %Water for high poverty communities around SWS sites compared to medium and low poverty communities and was also higher than %Water in Table 9. Figure 14b shows the same disproportion for %Rural. %Sewer in Figure 15 was comparable to the results in Table 9. Figure 16a shows disproportion in %Origin around FLS, TRI, SWS, and LQG sites. Figure 17a shows the same disproportion for %Language.

V. SUMMARY

The proximity analysis shows that the distance from census blockgroups to the nearest targeted environmental hazardous sites increased in the following order: SWS, LQG, TRI, TSD, NPL, and FLS. High and medium population density blockgroups were closer in proximity to targeted sites than in low population density blockgroups. The population density was higher in high and medium minority and poverty blockgroups than in low minority and poverty blockgroups and was closer in proximity to targeted sites than low minority blockgroups.

The %Minority population increased as the distance from the center of the blockgroup to the targeted hazardous site decreased for all sites except FLS sites. This means that blockgroups with a high percentage of minority populations had a higher number of hazardous sites located in the area and conversely in blockgroups of low minority concentrations. The same relationship held true for %Language with SWS, TRI, and TSD sites and %Renter-occupied households with FLS, LQG, NPL, and TRI sites. There was no relationship between poverty and distance, except for LQG where %Poverty decreased as the distance to the nearest targeted site decreased. The %Households in a rural area decreased as the distance from the blockgroups to all of the targeted sites decreased. This means that blockgroups with a high percentage of rural households had a lower number of hazardous sites located in the

area and conversely in blockgroups with a low percentage of rural households.

The demographic analysis shows that minority and low income populations were disproportionately represented within two miles around targeted environmental hazardous sites and that they were exposed to multiple sites. Characterization of populations by high, medium, and low minority, poverty, and density levels give a more accurate representation of those populations disproportionately represented in neighborhoods around environmental hazardous sites in Florida.

VI. CONCLUSIONS

The results of the proximity and demographic analysis report show that minority and low income communities are disproportionately impacted by multiple targeted environmental hazardous sites in Florida. Minority, poverty, and density factors can impact the distance, location, and the surrounding community demographics of targeted environmental hazardous sites. Having established these conclusions, further research is necessary.⁸⁹ First, the results indicate the critical need for health and risk exposure assessments of minority and poverty populations around environmental hazardous sites in Florida. Next, further research is necessary to expand the scope of this analysis to include the environmental hazardous site types, counties, and blockgroups not covered in this report. Finally, an analysis must be performed to determine why these disproportions exist. Is the problem in the process, the outcome, or both? Only then can solutions or remedies to any environmental injustices or inequities be implemented.

89. The Legislature specifically requested that the Commission's report include "[c]onsideration of the advisability of creating a permanent institutional review entity to deal with environmental equity issues." FLA. STAT. § 760.85(5)(j) (1995).

INDIAN FISHING RIGHTS: A LOST OPPORTUNITY FOR ECOSYSTEM MANAGEMENT

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I. INTRODUCTION

Today, the depletion of salmon and steelhead fisheries in the Northwest United States is a concern not only to commercial fishers whose livelihoods depend on the resource but also to conservationists who fear the endangerment or extinction of the species. The implementation of a comprehensive approach to fisheries management could have reduced this threat of depletion. The federal courts had the opportunity to promote regulation and conservation of the fisheries in two cases, *Sohappy v. Smith*¹ and *United States v. Washington (Boldt)*,² but failed to adopt an effective

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1. 302 F. Supp. 899 (D. Or. 1969), *aff’d in part*, 529 F.2d 570 (9th Cir. 1976).

2. 384 F. Supp. 312, 355 (W.D. Wash. 1974), *aff’d in part and rev’d in part*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976). *United States v. Washington* is popularly

management model that would address the environmental concerns of the fisheries as a whole. In these cases, Indian fishers in Oregon and Washington sought to enforce historic treaty fishing rights and invalidate state regulations that infringed upon their rights to resource allocation and habitat protection. Although the courts determined how fishery resources should be allocated among treaty and non-treaty fishers, only one court specifically addressed habitat protection and was later reversed on the issue.³ That court attempted to implement a conservation program that followed the basic tenets of what is now known as the Ecosystem Management Model.⁴

This article gives a brief overview of the history of the decisions and the federal legislation that stemmed from them and discusses the Ecosystem Management Model with respect to fishery protection. Part II provides a historical overview of the decision addressing the rights of Indian fishers, focusing on the *Boldt* and *Sohappy* decisions. Additionally, Part II recounts the legislative measures taken in response to these decisions. Part III describes the Ecosystem Management Model and its interplay with fisheries management. Finally, Part IV concludes that the rejection of the ecosystem approach may result in the serious and permanent depletion of fisheries.

II. HISTORICAL BACKGROUND

In 1854, Governor Isaac Stevens of the Oregon Territory and Joel Palmer, Superintendent of Indian Affairs, negotiated treaties that were designed to provide for "peaceful and compatible coexistence" between Indians and non-Indians and that would move the tribes from their historic lands to reservations.⁵ The tribes, concerned about their dependence on anadromous fish,

referred to as the *Boldt* decision. See H.R. REP. NO. 96-1243, at 12 (1980), reprinted in 1980 U.S.C.C.A.N. 6793, 6794.

3. See *United States v. Washington*, 506 F. Supp. 187, 190 (W.D. Wash. 1980), vacated, 759 F.2d 1353 (9th Cir. 1980), cert. denied, 474 U.S. 994 (1985); see also discussion *infra* Part II.E.

4. See Peter C. Monson, Case Note, *United States v. Washington (Phase II): The Indian Fishing Conflict Moves Upstream*, 12 ENVTL. L. 469, 481 (1982).

5. *Id.* at 355.

wanted to preserve their rights to continue fishing for these resources both on and off the reservation.⁶ Governor Stevens assured them that both Indians and American settlers alike would be able to fish off-reservation.⁷ To implement this promise, he included specific language in these treaties that provided that Indian tribes retain the right to fish “at their usual and accustomed places in common with the citizens of the territory.”⁸

In the late 1960s and early 1970s, Indian tribes and the United States filed fishing rights lawsuits in the federal courts of Oregon and Washington.⁹ The tribes claimed these rights based on the Stevens treaties that allowed members of treaty tribes to fish for salmon and steelhead in areas that were not part of the reservation.¹⁰ Decisions in these cases granted Indians increased rights to off-reservation fisheries and implicitly promised restoration of the fisheries to their historic levels, as they existed before over-exploitation and pollution.¹¹ The decisions also led to state opposition, and then non-acceptance and increased conflict between white and Indian fishers.¹²

6. *See id.*

7. *See id.*

8. Judge Robert C. Belloni, *Foreword*, 3 HASTINGS W.-N.W. J. ENVTL L. & POL'Y 7, 7 (1995) (quoting Yakima Treaty, art. III (June 9, 1855)); *see* United States v. Washington, 520 F.2d 677, 683 (9th Cir. 1975).

9. *See* United States v. Washington, 384 F. Supp. 312, 355 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976); *Sohappy v. Smith*, 302 F. Supp. 899 (D. Or. 1969), *aff'd in part*, 529 F.2d 570 (9th Cir. 1976). In the Oregon case, the tribes and the United States filed separately, but Judge Belloni consolidated the suits. *See id.* at 903. In *Boldt*, the tribes joined a suit filed by United States. *See Washington*, 384 F. Supp. at 327-30.

10. *See Sohappy*, 302 F. Supp. at 904; *Washington*, 384 F. Supp. at 330-33.

11. *Cf.* Brian R. Campbell, *Casting a Net into Turbulent Waters: Indian Salmon Fishing Rights in Canada and the United States*, 3 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 101, 113 (1995).

12. *See* Laura Berg, *Let Them Do as They Have Promised*, 3 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 8, 14-17 (1995). Fishers and state officials opposed the *Sohappy* and *Boldt* decisions legally and physically. Similar to desegregation cases, some parties responded by attempting to frustrate federal court power. *See* Puget Sound Gillnetters Ass'n v. United States Dist. Court, 573 F.2d 1123, 1125 (9th Cir. 1978), *vacated*, *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658 (1979).

In response, the federal government enacted legislation to soothe the hostilities between treaty and non-treaty fishers.¹³ Federal funds would be used to pay white fishers for their boats, equipment, and other material and thus “buy them out” of the fishery.¹⁴ The legislation also authorized federal funding to develop projects and incentives for fishery enhancement.¹⁵ Despite this legislation, subsequent court decisions, lack of funds, and lack of an ecosystem focus have quashed the hope of enriching fisheries. In fact, many of the salmon resources involved are now considered in danger.¹⁶

A. *The Sohappy and Boldt Decisions*

In *Sohappy v. Smith*,¹⁷ Judge Robert C. Belloni reviewed the Stevens treaty provisions and ruled that the State of Oregon’s restrictions on Indian treaty fishing rights were invalid.¹⁸ The court stated that the treaties entitled Indians to a “fair share” of the fish resources at “all usual and accustomed places.”¹⁹ The court would allow only limitations on the Indians’ rights that were necessary for conservation purposes,²⁰ and held that the state’s power to regulate Indian fisheries differed from its power over non-Indian fisheries.²¹

13. See Salmon and Steelhead Conservation and Enhancement Act of 1980, Pub. L. No. 96-561, 94 Stat. 3275 (1980) (codified at 16 U.S.C. §§ 3301-3345 (1995)); H.R. REP. NO. 96-1243, at 2 (1980), reprinted in 1980 U.S.C.C.A.N. 6793, 6796-97; see also Daniel J. Evans, Keynote, *Toward the Return of Pacific Salmon and Steelhead*, 16 ENVTL. L. 359, 360 (1986).

14. 16 U.S.C. § 3301(b)(1).

15. 16 U.S.C. § 3321.

16. See John V. Byrne, *Salmon is King—or is It?*, 16 ENVTL. L. 343, 344 (1986); Mary Christina Wood, *Fulfilling the Executive’s Trust Responsibility toward the Native Nations on Environmental Issues: A Partial Critique of the Clinton Administration’s Promises and Performance*, 25 ENVTL. L. 733, 770-73 (1995). The National Marine Fisheries Service is presently considering petitions to list at least some salmon species as threatened or endangered under the Endangered Species Act. See *id.*; see also Robert J. Miller, *Speaking with Forked Tongues: Indian Treaties, Salmon, and the Endangered Species Act*, 70 OR. L. REV. 543, 545-46 (1991).

17. 302 F. Supp. 899 (D. Or. 1969), *aff’d in part*, 529 F.2d 570 (9th Cir. 1975).

18. See *id.* at 911.

19. *Id.* at 907-08, 911-12.

20. See *id.* at 908.

21. See *id.*

According to *Sohappy*, when off-reservation treaty Indian fisheries are involved, “state regulatory powers are limited and bound by certain conditions and standards.”²² The regulations must be reasonable and necessary for conservation, must not discriminate against the Indians, and must be the least restrictive means of achieving the objective.²³ The protection of treaty fishing rights must be a state regulatory objective, coequal with its fish conservation objectives.²⁴ Therefore, state police powers may be used only if the continued existence of the fish resource is threatened. Indians may be permitted to fish at places and by means prohibited to non-Indians, and the tribes must have an opportunity for meaningful participation in the rulemaking process.²⁵

Five years later, Judge George H. Boldt ruled that the State of Washington had similarly violated the Indians’ treaty fishing rights in the *Boldt* decision.²⁶ He held that “fair share” meant “equal share,” and that the tribes were entitled to 50% of the off-reservation fishery.²⁷ He found that the tribes should regulate Indian off-reservation treaty fishing, but required that they meet certain minimum qualifications and agree to stated conditions.²⁸ The required qualifications and conditions included effective leadership, which would enable the tribe to promulgate and enforce off-reservation regulations that did not adversely affect conservation objectives.²⁹ Furthermore, the tribe needed to maintain a membership roll, provide identification to be carried by the fishers,³⁰ allow the state to monitor off-reservation fishing, and provide data to the state upon request.³¹

22. *Id.* at 912; Berg, *supra* note 12, at 11.

23. See *Sohappy*, 302 F. Supp. at 908-12.

24. See *id.* at 911.

25. See *id.* at 911-12.

26. *United States v. Washington*, 384 F. Supp. 312, 405-08 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976).

27. See *id.* at 343; see also Campbell, *supra* note 11, at 113.

28. See *Washington*, 384 F. Supp. at 340.

29. See *id.* at 341.

30. See *id.*

31. See *id.*

At the same time, the court granted the state regulatory power over Indian off-reservation fishing solely for the purpose of conservation.³² Regulations had to be “reasonable and necessary to the perpetuation of a particular run or species of fish.”³³ They also had to be specifically designed to achieve the purpose and “essential to conservation.”³⁴ Finally, the state had the burden of showing that the conservation measure met these standards.³⁵

Both judges rejected the idea that any change in treaty rights occurred upon the granting of statehood to Oregon and Washington or by subsequent legislation by Congress.³⁶ Rather, the judges found that these treaty rights were binding because, like international treaties, they were the law of the land.³⁷ Both judges reserved jurisdiction to ensure state compliance with the decisions.³⁸

Boldt became the focus of public attention, later court action, state attempts at nullification, confusion in the federal court of appeals, and eventually a Supreme Court decision. Judge Boldt’s decision also suggested a possible “*Boldt II*”³⁹ that could have mandated a comprehensive ecosystem management approach to Northwest fisheries.⁴⁰

B. Boldt and Its Progeny—Resource Allocation

The complaint that led to the *Boldt* decision came in two parts. Part One, decided in 1974, sought access to off-reservation

32. *See id.* at 342.

33. *Id.*

34. *Id.*

35. *See id.*

36. *See Sohappy*, 302 F. Supp. at 905; *Washington*, 384 F. Supp. at 354.

37. *See Sohappy*, 302 F. Supp. at 905; *Washington*, 384 F. Supp. at 337.

38. *See Sohappy*, 302 F. Supp. at 911; *Washington*, 384 F. Supp. at 347.

39. As suggested, this decision did lead to a later decision, *United States v. Washington*, 506 F. Supp. 187 (W.D. Wash. 1980), *vacated*, 759 F.2d 1353 (9th Cir. 1980), *cert. denied*, 474 U.S. 994 (1985). This article later refers to the decision as Phase II. *See* discussion *supra* Part II.E.

40. *See generally* Martin H. Belsky, *Implementing the Ecosystem Management Approach: Optimism or Fantasy?*, 1 ECOSYSTEM HEALTH 214 (1995) [hereinafter Belsky, *Implementing the Ecosystem Management Approach*] (arguing for an ecosystem approach to balance resource development and environmental protection).

fisheries.⁴¹ As explained above, Judge Boldt held that members of appropriate tribes were to receive 50% of the resources in those off-reservation sites that were the tribes' usual and accustomed fishing areas.⁴² Part Two involved the impact of activities on these fisheries and the obligation of the government to return the fisheries to their historic health. The court deferred resolution of this claim until after it resolved the access claim.⁴³

The aftermath of *Boldt* occurred on many fronts. First, the salmon catch by treaty fishers more than doubled from 6% of the total salmon harvest to 15% within two years after the decision.⁴⁴ In addition, non-native sports fishers, commercial fishers, and the press reacted with anger and threats to the decision and the resulting increase in native fishing.⁴⁵ Lastly, Washington state officials openly defied the decision, while repeatedly appealing it.⁴⁶

When the State of Washington appealed Judge Boldt's decision,⁴⁷ the Ninth Circuit Court of Appeals affirmed, stating that the treaties' history indicated that the "treaty Indians are entitled to an opportunity to catch one-half of all the fish which, absent the fishing activities of other citizens, would pass their traditional fishing grounds."⁴⁸ The court made one minor clarification, holding that any equitable adjustment "should not take account of fish caught by non-Washington citizens outside the

41. See *Washington*, 384 F. Supp. at 327-28.

42. See *id.* at 408.

43. See *Washington*, 384 F. Supp. at 328. The plaintiffs asserted claims regarding "alleged destruction or impairment of treaty right fishing" by state action or inaction, but the court heard the issues separately. *Id.* at 327.

44. See H.R. REP. NO. 96-1243, at 25, reprinted in 1980 U.S.C.C.A.N. 6793, 6807.

45. See Monson, *supra* note 4, at 481; Berg, *supra* note 12, at 14-15. The Indians reported incidents of vandalism, and bumper stickers displayed resentment for the *Washington* and *Sohappy* decisions. Media accounts of the death of non-Indian commercial fishers implied that the deaths were related to the decisions. See *id.*; see also H.R. REP. NO. 96-1243, at 26, reprinted in 1980 U.S.C.C.A.N. 6793, 6808.

46. In his concurring opinion, Federal District Judge Burns suggested that the recalcitrant acts of government officials and their non-Indian fisher allies forced judges to act unwillingly as managers of the fisheries. See *United States v. Washington*, 520 F.2d 677, 693 (9th Cir. 1975).

47. See *id.* at 682.

48. *Id.* at 688.

state's jurisdiction."⁴⁹ The Supreme Court refused to consider the issue, denying certiorari.⁵⁰

C. Commercial Fishers Take Action

The State of Washington refused to accept the Ninth Circuit's decision and went to its own courts to nullify it. *Boldt* required the Washington State Department of Fisheries to adopt regulations to implement the decision.⁵¹ Immediately after the Department issued the regulations, commercial fisherman, assisted by State of Washington officials, filed suit in Washington state court seeking a writ of mandate "ordering the Director of Fisheries to issue regulations which apply equally and in a nondiscriminatory fashion to both treaty and non-treaty fisherman."⁵²

In two decisions, *Puget Sound Gillnetters Ass'n v. Moos*⁵³ and *Washington Commercial Passenger Fishing Vessel Ass'n. v. Tollefson*,⁵⁴ the Washington Supreme Court ultimately held the federal court actions invalid and forbade the Department of Fisheries to comply with the federal injunction.⁵⁵ Specifically, in *Puget Sound*, the court held that Washington law allowed regulations of fisheries for conservation purposes only, and that Indians, as citizens of the State of Washington, are subject to the laws of the State of Washington. The court added that no court, including a federal court, had the authority to order a state agency to do any act inconsistent with its statutory authority.⁵⁶ The court asserted that it, not the federal district court, had the authority to interpret state statutes as to the power of state agencies and had at least equal authority as federal courts to interpret Indian treaties.⁵⁷

49. *Id.* at 693.

50. *United States v. Washington*, 423 U.S. 1086 (1976).

51. *See United States v. Washington*, 384 F. Supp. 312, 355 (W.D. Wash. 1974), *aff'd*, 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976).

52. *Puget Sound Gillnetters Ass'n v. Moos*, 565 P.2d 1151, 1152 (Wash. 1977).

53. 565 P.2d 1151 (Wash. 1977).

54. 571 P.2d 1373 (Wash. 1977).

55. *See Puget Sound*, 565 P.2d at 1157; *Tollefson*, 571 P.2d at 1378.

56. *See Puget Sound*, 565 P.2d at 1157.

57. *See id.* at 1153-58.

The Washington Supreme Court was obviously concerned about the impact of the *Boldt* decision on non-native fishers.⁵⁸ After asserting its authority to interpret the treaty, the court addressed the adverse economic impact on the fishers, the growing hostility between the Indian and non-Indian fishers, and the ecological impact on the fish population.⁵⁹ Its final order was simple: “[T]he Director of Fisheries has the authority to pass regulations only for conservation purposes [and therefore] . . . cannot allocate fish [differently] to any user of the same class, that every fisherman in a class must be treated equally, and that each should be given an equal opportunity to fish within lawful statutes and regulations.”⁶⁰

In *Tollefson*, the Washington Supreme Court reaffirmed that “the director of the Department of Fisheries [does not] have the statutory power to make an unequal allocation of fish”⁶¹ and that “a Federal District Court [cannot] order a state official to act beyond the powers vested in the state official by the legislature”⁶² The court then held that allocating an equal share, rather than providing equal access, violated the Equal Protection Clause of the United States Constitution, and that this Constitutional provision superseded any possible Indian treaty rights.⁶³

D. *The United States Supreme Court on Indian Treaty Rights*

Although the Supreme Court denied certiorari in the original *Boldt* decision, the Court could not ignore this blatant state court challenge to federal authority. In a footnote, the United States Supreme Court quickly rejected the equal protection argument.⁶⁴ While the treaties provided special rights to signatory Indian tribes,

58. *See id.* at 1158-59.

59. *See id.*

60. *Id.* at 1159.

61. *Id.*

62. *Tollefson*, 571 P.2d at 1375.

63. *See id.* at 1376-77. The court compared the number of Indian fishers to the number of non-Indian fishers in the state, and found that over 50% of the state's resources are reserved for less than 1% of the citizens. The court found that this level of proportionality violated the Equal Protection Clause of the Fourteenth Amendment. *See id.*

64. *See Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 673 n.20 (1979).

the tribes' "peculiar semi-sovereign and constitutionally recognized status . . . justifies special treatment on their behalf."⁶⁵ The Court also rejected the idea that the federal district court could not order a state agency to take action when the agency supposedly had no state law authority to do so.⁶⁶

The Court then moved to the allocation formula itself. It rejected the State's argument that the treaties only provided for equal access and accepted, in principle, the idea of an equal share of fish for treaty and non-treaty fishers.⁶⁷ However, the Court added a "moderate living" limitation that allowed a reduction in tribal allocation if tribal needs could be met by a lesser amount.⁶⁸ Finally, the Court modified Judge Boldt's allocation formula by disallowing the exclusion for subsistence and ceremonial catches and by including fish caught by tribal members on their reservations in the equal share calculation.⁶⁹

After *Commercial Fishing Vessel Ass'n*, Indian treaty rights secure as much as, but no more than, is necessary to provide the Indians with a livelihood or moderate living.⁷⁰ Accordingly, while the maximum possible allocation to the Indians is fixed at 50%, the minimum allocation is flexible.⁷¹ Upon proper submissions to the district court, the court will modify the latter in light of changing circumstances.⁷² For example, if a tribe should dwindle to just a few members or if it should find other sources of support that lead

65. *Id.*

66. *See id.* at 695. The Supremacy Clause of the United States Constitution forbids state law prohibition of compliance with a federal court. Thus, the Game and Fisheries may be compelled to act without state law authority to do so. *See id.*

67. *See id.* at 685; *see also* Monson, *supra* note 4, at 482. Three Justices dissented on this issue and stated, in an opinion by Justice Powell, that the treaty language provided only for equal access. *See Commercial Fishing Vessel Ass'n*, 443 U.S. at 698.

68. *See id.* at 686-87. For a criticism of the moderate living doctrine, see Dana Johnson, Comment, *Native American Treaty Rights to Scarce Natural Resources*, 43 UCLA L. REV. 547 (1995).

69. *See Commercial Fishing Vessel Ass'n*, 443 U.S. at 687-89. Fish that are of the type that regularly pass through Indian fishing waters and are caught by an Indian fisher who is a party to the suit, or a non-Indian citizen of Washington shall count against that party's share of the permitted catch. *See id.*

70. *See id.* at 688-89.

71. *See id.* at 686-87.

72. *See id.*

it to abandon its fisheries, a 45% or 50% allocation of an entire run of fish that passes through its customary fishing grounds would be manifestly inappropriate because the livelihood of the tribe under those circumstances could not reasonably require the allotment of such a large amount.⁷³

E. Legislative Action

The courts had made their resource allocation decision. The non-native fishing community now turned to the political process to soften the blow.⁷⁴ On December 22, 1980, Congress enacted the Salmon and Steelhead Conservation and Enhancement Act.⁷⁵ Congress was explicit in its response to the *Boldt* and *Sohappy* decisions.⁷⁶ In light of the new rights of treaty fishers, their goal was to assist the non-treaty fishers who had too many boats for the reduced fishing capacity.⁷⁷ They responded to the severe economic problems in the fishing community⁷⁸ by providing necessary funds to purchase non-treaty fishing licenses and equipment, to coordinate research for improvement of the resource, and to undertake an enhancement program.⁷⁹ After years of controversy,

73. *See id.*

74. The NOAA, working as part of a Federal Task Force on Washington State Fisheries and with the relevant House and Senate Committees, drafted the legislation providing for buy-backs of vessels from non-native fishers and the development of a program for fishery enhancement. *See* H.R. REP. NO. 96-1243, 12-13, 33-35, *reprinted in* 1980 U.S.C.C.A.N. 6793, 6794-95, 6816-17; *see also* 16 U.S.C. § 3301 (1995).

75. 16 U.S.C. § 3301.

76. 16 U.S.C. § 3301(a)(4).

77. 16 U.S.C. § 3301(b)(1).

78. 16 U.S.C. § 3301(a)(4) (stating that the fishing capacity of non-treaty fishers in conservation areas established by this title exceed the capacity required to harvest the available salmon resources).

79. 16 U.S.C. § 3301(b). This section authorizes:

the establishment of a cooperative program involving the United States, the States of Washington and Oregon, the treaty tribes . . . and other parties, to (1) encourage stability in and promote the economic well being of the treaty and nontreaty commercial fishing and charter fishing industries and improve the distribution of fishing power between treaty and non-treaty fisheries through— (A) the purchase of nontreaty commercial and charter fishing vessels, gear, and licenses; and (B) coordinated research, enhancement, and management of salmon and steelhead resources and habitat; and (2) improve the quality of, and maintain the opportunities for, salmon and steelhead recreational fishing.

Id.

both treaty and non-treaty fishers had some cause for optimism when Congress created the Fleet Adjustment Program to fund the purchase of licenses, vessels, and equipment of non-treaty fishers⁸⁰ and to enhance the habitat and fishery.⁸¹

Congress recognized that funding alone was not enough, and that a comprehensive coordinated management approach was necessary.⁸² Congress had expressed its concerns about the multiplicity of management regimes⁸³ and regulatory bodies involved in enhancement programs.⁸⁴ It stressed the need for "improved management coordination" because the management of salmon was "largely a product of political rather than biological realities" up to that time.⁸⁵ Congress viewed the existing management arrangements between the states, the Indian tribes, and the federal government as complicated and uncoordinated⁸⁶ and recognized the difficulty of embarking on a fishery enhancement effort under such a system.⁸⁷ The State of Washington and tribal leaders also saw the need for management coordination and conservation of the fishery.⁸⁸ In short, the salmon and steelhead fishery in the Northwest was ready for an ecosystem management approach that provided for an enhanced and restored fishery based upon a conservation and protection management model. The approach would force conflicting parties to stop disputing sovereignty and jurisdiction and work together.

80. See 16 U.S.C. §§ 3331-3336 (establishing a Fleet Adjustment Program where the State could buy the licenses, vessels, and equipment of nontreaty fishers and the federal government would supply 75% of the funding).

81. See 16 U.S.C. §§ 3321-3325 (providing for development of comprehensive enhancement plans and funding for specific projects developed in accordance with the plans). Section 3302 (8) defines "enhancement" as "projects undertaken to increase the production of . . . stocks of salmon or steelhead, or to preserve, conserve, or improve the habitat of such stocks." 16 U.S.C. § 3302 (8).

82. See H.R. REP. NO. 96-1243, at 36-43 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6793, 6818-26.

83. See *id.* at 36.

84. See *id.* at 41.

85. *Id.* at 36.

86. See *id.* at 37.

87. See *id.* at 40.

88. See *id.* at 42-43.

E. Judge Orrick's Decision—Phase II

When Judge Boldt decided the resource allocation issues that the tribes and the United States raised in their lawsuit against the State of Washington, he reserved jurisdiction to decide “whether the right of taking fish [guaranteed by treaty to the tribes] incorporates the right to have treaty fish protected from environmental degradation.”⁸⁹ Judge Boldt was no longer living by the time of Phase II. Judge William H. Orrick, Jr. presided in his place.⁹⁰

The tribes and the United States argued that authorization of non-native fishing and state authorization of “watershed alterations, water storage dams, industrial developments, stream channel alterations, and residential developments” led to a degradation of their usual and accustomed fishery grounds.⁹¹ Federal treaty rights implied a promise of habitat integrity⁹² and specifically granted the right “to have the fishery resource protected from adverse environmental actions or inactions of the State of Washington.”⁹³ Implying this right was essential because the fishery resource would continue to decline, and the species would perhaps become listed as endangered or threatened without real protection of the fish and their habitats.⁹⁴ “Unless the decline of these species is arrested, the right ‘to fish in common’ becomes meaningless and the gains achieved by the Indians become ‘empty victories.’”⁹⁵

Judge Orrick found that “[i]t is now beyond dispute that natural fish have become relatively scarce, due at least in part to

89. *United States v. Washington*, 506 F. Supp. 187, 190 (W.D. Wash. 1980), *vacated*, 759 F.2d 1353 (9th Cir. 1980), *cert. denied*, 474 U.S. 994 (1985).

90. *See id.* at 189.

91. *Id.* at 203 (quoting UNITED STATES FISH AND WILDLIFE SERV., WASHINGTON DEP'T OF FISHERIES, & WASHINGTON DEP'T OF GAME, JOINT STATEMENT REGARDING THE BIOLOGY, STATUS, MANAGEMENT, AND HARVEST OF THE SALMON AND STEELHEAD RESOURCES OF THE PUGET SOUND AND OLYMPIC PENINSULAR DRAINAGE AREAS OF WESTERN WASHINGTON 17 (1973)); *see also* Johnson, *supra* note 68, at 573.

92. *See Washington*, 506 F. Supp. at 205; *see also* Johnson, *supra* note 68, at 574.

93. *Washington*, 506 F. Supp. at 194 (quoting Plaintiff's Joint Statement of Issues I.1 (June 23, 1978)).

94. *See* Monson, *supra* note 4, at 483.

95. *Id.*

the commercialization of the fishing industry and the degradation of the fishing habitat caused primarily by non-Indian activity in the case area.”⁹⁶ He also found an implicit right in the treaties to have the fishery habitat protected from “man-made despoliation” created by urbanization and intensive settlement of fishing areas.⁹⁷ The court relied on a joint statement by several state and federal agencies that reported that the development of water power, lumbering, irrigation, and pollution contributed to the alteration and destruction of the habitat conditions required for successful fish production.⁹⁸ According to the statement, these factors also reduced the quality and amount of accessible spawning grounds and the capacity of the streams.⁹⁹ Thus, Judge Orrick noted that “[w]ere this trend to continue, the right to take fish would eventually be reduced to the right to dip one’s net into the water . . . and bring it out empty.”¹⁰⁰ He further recognized that the Ninth Circuit and the Supreme Court “all but resolved the environmental issue” in Phase I and confirmed the right to a fishing habitat protected from man-made despoliation by rejecting the State’s contention that the treaty right is merely an equal opportunity for the native fishers to attempt to fish.¹⁰¹

The court believed that a paramount purpose of the treaties is the preservation of the tribes’ right to continue fishing as an economic and cultural way of life.¹⁰² Because the existence of an ecologically-sound habitat is essential to the survival of the fish, the court asserted that the express right to take fish would be without meaning or value without a parallel, implied right to habitat

96. *Washington*, 506 F. Supp. at 198. The court further stated that “the record also establishes that the State has developed and promoted its artificial propagation program in order to replace the fish that were artificially lost.” *Id.* Therefore, hatchery fish had to be included in the allocation from which the native treaty fishers were entitled to an equal share up to the moderate living level set that the Supreme Court set. *See id.*

97. *See id.* at 203.

98. *See id.*

99. *See id.*

100. *Id.*

101. *See id.* at 203-04 (“Such result would render nugatory the nine-year effort in Phase I, sanctioned by this Court, the Ninth Circuit, and the Supreme Court, to enforce the treaties’ reservation to the tribes of a sufficient quantity of fish to meet their fair needs.”).

102. *See id.*

protection.¹⁰³ The State disagreed with this contention, arguing that existing federal and state laws and programs sufficiently protected the fish habitat and thereby obviated the need to imply any right regarding the environment.¹⁰⁴ However, the court found the existence of current programs irrelevant to the issue of whether the fishing clause actually created the right and left the determination of whether present means to enforce that right must be supplemented in the future.¹⁰⁵

The Indians and the United States sought the recognition of a duty on behalf of the State to refrain from impairing the environmental conditions necessary for the survival of treaty fish.¹⁰⁶ Accordingly, the United States argued that the State's duty is to avoid taking or approving actions that significantly and adversely impact the fishery.¹⁰⁷ The district court agreed with the existence of this duty and accepted the moderate living standard imposed by the Supreme Court in *Boldt* as a standard by which the State must refrain from harming the marine habitat.¹⁰⁸ Under this standard, the State had the burden to show that any environmental degradation of the fishery, if proximately caused by the State, would not harm the tribes' ability to meet their moderate living needs.¹⁰⁹ The decision was historic because the court ordered the State of Washington to refrain from destroying the fish habitat to

103. *See id.* "One stick in the proverbial bundle of property rights is the right not to have the property itself degraded or destroyed." Monson, *supra* note 4, at 487.

104. *See id.* at 205-06.

105. *See id.*

106. *See id.* at 207.

107. *See id.* However, the Indians were not requesting any new legislation or expenditure of resources by the State. *See id.*

108. *See id.* at 208. The court summarized the standard:

The treaties reserve to the tribes a sufficient quantity of fish to satisfy their moderate living needs, subject to a ceiling of 50 percent of the harvestable run. That is the minimal need which gives rise to an implied right to environmental protection of the fish habitat. Therefore, the correlative duty imposed upon the State (as well as the United States and third parties) is to refrain from degrading the fish habitat to an extent that would deprive the tribes of their moderate living needs.

Id.

109. *See id.* The court noted that the initial burden of demonstrating that the challenged action will proximately cause degradation remained with the tribes. *See id.*

the detriment of the tribes' living needs.¹¹⁰ All agencies had to review their actions to ensure that their actions did not adversely affect the fishery habitat.¹¹¹ If this review was ineffective, the tribes could seek further remedial action.¹¹² Thus, the approach comprehensively considered the fisheries and all the impacts of regulation and pollution.

Additionally, the decision also had a broad impact on the reserved rights of Indian tribes in general because its concepts applied not only to the State of Washington but also to other states and to third parties including the United States under its trust responsibilities.¹¹³ Other tribes could assert their reserved rights to potentially protect their natural resources on and off the reservation.

III. THE ECOSYSTEM MANAGEMENT MODEL

The Ecosystem Management Model, a new model of fisheries management, has evolved over the last decade.¹¹⁴ The Model is based on the scientific truism that the ocean is a total resource system consisting of a pattern of relationships between species and man's coastal activities.¹¹⁵ As a result, the Model assumes that a comprehensive coordinated ecosystem approach is the wisest way to manage and conserve our resources because cooperative action

110. Before Phase II was reversed, federal agencies were subject to both the duties imposed by Phase II and additional trust obligations to the tribes. *See id.* at 497; *see also* *Cherokee Nation v. Georgia*, 30 U.S. 1, 17 (1831) (analogizing the relationship of the United States and an Indian tribe to a guardian and its ward). *See generally* Wood, *supra* note 16, at 735, 738-39, 743-50 (critiquing the Clinton administration's performance in fulfilling the United States' trust responsibility to native interests in the implementation of environmental and natural resource laws).

111. *See Washington*, 506 F. Supp. at 207.

112. *See id.*

113. *See Monson*, *supra* note 4, at 495-97 (discussing who could assert reserved rights and against whom they could be asserted following the Phase II litigation).

114. *See, e.g.*, Martin H. Belsky, *Management of Large Marine Ecosystems: Developing a New Rule of Customary International Law*, 22 SAN DIEGO L. REV. 733 (1985) [hereinafter Belsky, *Management of Large Marine Ecosystems*]; Martin H. Belsky, *The Ecosystem Model—Mandate for a Comprehensive United States Ocean Policy and Law of the Sea*, 26 SAN DIEGO L. REV. 417 (1989) [hereinafter Belsky, *The Ecosystem Model*]; Belsky, *Implementing the Ecosystem Management Approach*, *supra* note 40, at 214.

115. *See Belsky*, *The Ecosystem Model*, *supra* note 114, at 448.

is essential to avoid conflicts between claimants of resources and to assure access and future use of resources.¹¹⁶

Nation-states resisted the model until recently because their governing philosophies stressed preserving each country's sovereign rights, promoting the freedom of the high seas, and exploiting natural resources to their fullest potential.¹¹⁷ When resources crossed over jurisdictional lines, nation-states and political units within nation-states were reluctant to relinquish either sovereignty or jurisdiction.¹¹⁸ When resources were shared by multiple users, each user sought to maximize returns on the resource to the exclusion of others.¹¹⁹ Therefore, conservation and management were dealt with on an *ad hoc* or as needed basis.¹²⁰

In recent years, leaders have begun to favor a more holistic approach, adopting the concepts expressed in models of biodiversity and ecosystem management and incorporating them in their domestic laws, international resolutions, and treaties.¹²¹ International tribunals and some domestic courts have also started to apply this comprehensive approach and have created in essence a legal presumption for ecosystem management in international law.¹²² The legal and political presumptions that these actions created may in fact be obligations of the nation-states in light of the inclusion of such presumptions in international law.¹²³ International law is incorporated into the domestic law of the United States and mandates that both citizens and government officials comply with the international rule.¹²⁴

Thus, within the United States, this principle requires that federal and state regulatory agencies apply the Ecosystem

116. See *id.* at 458.

117. See Belsky, *Implementing the Ecosystem Management Approach*, *supra* note 40, at 216.

118. See Belsky, *Management of Large Marine Ecosystems*, *supra* note 114, at 738.

119. See Belsky, *The Ecosystem Model*, *supra* note 114, at 450.

120. See Belsky, *Implementing the Ecosystem Management Approach*, *supra* note 40, at 216.

121. See *id.*

122. See *id.* at 216-17.

123. See Belsky, *Implementing the Ecosystem Management Approach*, *supra* note 40, at 216-17; Belsky, *The Ecosystem Model*, *supra* note 114, at 461-64.

124. See *id.* at 472-73.

Management Model to existing statutes and regulatory policies.¹²⁵ Environmental and fisheries statutes provide broad discretion to regulators and policymakers, but that discretion must be exercised consistent with the Model.¹²⁶ Although implementation is not universal or complete, the Model has been accepted by American policymakers, particularly fisheries policymakers as the preferred model because it makes scientific, political, and legal sense.¹²⁷ Phase II and the implementation of the Salmon and Steelhead Conservation and Enhancement Act provided these policymakers with a particularly well-suited opportunity for its application. Judge Orrick's decision in Phase II essentially used an Ecosystem Management Model because his scheme worked to avoid future harm, integrated the treaty right to protect the fishery with other legislative and regulatory policies, and continued court supervision to ensure that such integration occur.¹²⁸

125. *See id.*

126. *See id.* at 478.

127. *See* John Byrne, *Large Marine Ecosystems and the Future of Ocean Studies: A Perspective*, in VARIABILITY AND MANAGEMENT OF LARGE MARINE ECOSYSTEMS 299, 300 (Kenneth Sherman & Lewis M. Alexander eds., 1986). *See generally* Kenneth Sherman, *Sustainability of Resources in Large Marine Ecosystems*, in FOOD CHAINS, YIELDS, MODELS, AND MANAGEMENT OF LARGE MARINE ECOSYSTEMS 1-34 (Kenneth Sherman et al. eds., 1991) (comparing large marine ecosystems under ecosystem management to unmanaged systems and the resulting effect on resource availability). Vice-President Gore has called on all environmental agencies to "ensure a sustainable economy and a sustainable environment through ecosystem management," and Republican Senator Mark Hatfield has introduced a proposed Ecosystem Management Act. The Forest Service has also incorporated ecosystem management into their public lands policies. *See* Rebecca Thomson, *Ecosystem Management: Great Idea, But What Is It, Will It Work, and Who Will Pay?*, 9 NAT. RESOURCES & ENV'T 42 (1995).

128. *See generally* Monson, *supra* note 4, at 502-03 (discussing the changes that Phase II will create for resource developers).

A. *The Shutdown of the Ecosystem Management Model*

The treaty right to habitat rehabilitation and control of man-made actions was not favorably received by the federal appellate court.¹²⁹ In *United States v. Washington*, a three judge court quickly disposed of the ecosystem approach adopted in principle by Judge Orrick.¹³⁰ The court found that the application had no basis in precedent and was unnecessary, unworkable, and potentially disruptive.¹³¹ The court held that the only approach required is a best effort by all to avoid any further degradation.¹³²

Both sides quickly sought reconsideration by the full court of appeals.¹³³ The court in a *per curiam* opinion vacated the original opinion on the environmental issue and decided that the district court should not have issued a declaratory judgment.¹³⁴ The court believed that sound judicial discretion indicated that a decision should await a concrete case. "The legal standards that will govern the State's precise obligations and duties under the treaty with respect to the myriad State actions that may affect the environment of the treaty area will depend for their definition and articulation upon concrete facts which underlie a dispute in a particular case."¹³⁵ Therefore, the issue of applying Judge Orrick's approach remained for another day. Unfortunately, discussion of the issue

129. See *United States v. Washington*, 694 F.2d 1374, 1375 (9th Cir. 1983), *reh'g*, 759 F.2d 1353, *cert.denied*, 474 U.S. 994 (1985).

130. See *id.* at 1377 n.7 (stating that the district court's interpretation of the moderate living standard misconstrued *Commercial Fishing Vessel Ass'n*).

131. See *id.* at 1381.

132. See *id.* at 1389. The court stated:

Let us repeat the essence of our interpretation of the treaty. Although we reject the environmental servitude created by the district court, we do not hold that the State of Washington and the Indians have no obligations to respect the other's rights in the resource. Instead, we affirm the district court on the fish hatchery issue and we find on the environmental issue that the State and the Tribes must each take reasonable steps commensurate with the resources and abilities of each to preserve and enhance the fishery when their projects threaten *then-existing* harvest levels.

Id. (emphasis added).

133. See *United States v. Washington*, 759 F.2d 1353, 1354-55 (9th Cir. 1985). The court affirmed the hatchery issue. See *id.*

134. See *id.* at 1356-58.

135. *Id.* at 1357.

has ended after this decision as the case was remanded back to federal district court¹³⁶ where it remains. The tribes do not see a high likelihood of success and instead are focused on preserving their rights to appropriate allocation of the resources if and when the salmon and steelhead stocks are found to be threatened or endangered under the Endangered Species Act.¹³⁷

Of course, in 1980 Congress did provide a mechanism for a cooperative approach and for enhancement projects based on a comprehensive model,¹³⁸ but inadequate funding ensured that this alternative would not be applied.¹³⁹ Fisheries are in danger as a result.¹⁴⁰ Ironically, the fighting over allocation may become unnecessary as resources continue to dwindle, leaving nothing over which to fight.¹⁴¹

IV. THE FINAL RESULT

Many native tribes continue to depend on the availability and accessibility of natural resources and thus on ecosystem health which ensures this continued availability.¹⁴² Phase II and the implementation of the Salmon and Steelhead Conservation and Enhancement Act provided the courts and Congress with an opportunity to apply the ecosystem approach to prevent fishery depletion. The failure of the courts and the federal government to seize this opportunity will result in the continued degradation of the habitat and the fisheries themselves. That unchecked degradation and lack of a comprehensive ecosystem focus on rehabilitation might mean the temporary and potentially permanent loss of commercial and recreational fisheries. Either

136. See *id.* at 1355.

137. See Interview with Elizabeth Mitchell & Eileen Cooney, Assistant General Counsels, NOAA, Seattle, Washington (May 6, 1996); Interview with Vernon Peterson, Assistant Solicitor, Department of the Interior, Washington, D.C. (May 7, 1996). For a discussion of the potential impact of a finding that salmon or steelhead stocks would have on native fishing rights, see Miller, *supra* note 16, at 543.

138. See *supra* notes 74-88 and accompanying text.

139. See Interview with Jay Johnson, Deputy General Counsel, NOAA, Washington, D.C. (May 3, 1996).

140. See *id.*

141. See *id.*

142. See Wood, *supra* note 16, at 735.

species could become so depleted that they must be listed as threatened or endangered, or the fisheries could be destroyed altogether.

The Ecosystem model, of course, is not dead. In fact, recognition of the dangers to our living resources had led to its increasing use for all forms of management and conservation.¹⁴³ It will, I am confident, eventually, be applied to fisheries covered by Indian treaties. However, an opportunity has been lost to have these treaties be the vehicle for early implementation of the model and perhaps avoidance of the harm to the fisheries involved.

143. See, e.g., Richard H. Burroughs & Tim W. Clark, *Ecosystem Management: A Comparison of Greater Yellowstone and Georges Bank*, 19 ENVTL. MGMT. 649 (1995); W. Herbert McHarg, *The Federal Advisory Committee Act: Keeping Interjurisdictional Ecosystem Management Groups Open*, 15 J. ENERGY NAT. RESOURCES & ENVTL. L. 437 (1995); Raymond A. Just & Brett M. Hager, *Predator MIS: A Mechanism for Ecosystem Management under the FCMA*, 9 TULSA ENVTL. L. J. 385 (1996).

DEVELOPING A FAIR SHARE HOUSING POLICY FOR FLORIDA

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VII. Appendix: Tables

I. INTRODUCTION

One of the most intractable urban policy issues of our time is the social separation between whites and blacks. In 1968, the United States National Advisory Commission on Civil Disorders (Kerner Commission) wrote that the United States was “moving toward two societies, one black, one white—separate and unequal.”¹ The Kerner Commission saw two options, one a strategy of ghetto enrichment *without* efforts to integrate blacks and whites outside the inner city and the other a strategy of ghetto enrichment *with* efforts at significant integration.² Although the Kerner Commission recommended the latter, integration has not been achieved. Various indices of residential segregation show that whites and blacks are as separated in the 1990s as they were in the 1960s. Despite fair housing laws that go back to 1968, evidence of discrimination in housing and housing finance is abundant.³

In the 1990s, racial segregation also means that African Americans no longer live in areas where there are a significant number of good jobs. The jobs, particularly the low skill, higher paying jobs that enabled cities to be engines of social mobility for migrants, have left the inner city. Some jobs have been relocated to the suburbs and rural areas while others have moved to other nations, usually with lower labor costs. According to John Kasarda, “essentially all of the national growth in entry-level and other jobs with low educational requisites has occurred in the suburbs, exurbs, and non-metropolitan areas, all of which are far removed from growing concentrations of poorly educated minorities.”⁴

1. U.S. NAT'L ADVISORY COMM'N ON CIVIL DISORDERS, REPORT OF THE NAT'L ADVISORY COMM'N ON CIVIL DISORDERS 1 (1968) [hereinafter Kerner Commission].

2. *See id.*

3. *See* DOUGLAS S. MASSEY & NANCY A. DENTON, AMERICAN APARTHEID: SEGREGATION AND THE MAKING OF THE UNDERCLASS 195 (1993).

4. John D. Kasarda, *Jobs, Migration, and Emerging Urban Mismatches*, in URBAN CHANGE AND POLICY 148, 192 (Michael G. H. McGeary & Laurence E. Lynn, Jr. eds., 1988).

As Kasarda's quote implies, with the exodus of middle class minority groups from the central city, remaining inner-city neighborhoods have increasingly higher concentrations of poverty. The result, according to sociologist William Julius Wilson, is an increased *social isolation* of urban minorities that results in them being removed from the economic mainstream that is increasingly found in the nation's suburbs.⁵ According to Wilson, "inner-city social isolation makes it much more difficult for those who are looking for jobs to be tied into the job network."⁶ Consequently, inner-city residents have difficulties in finding jobs.

What, then, is to be done? Although evidence is still limited, the Kerner Commission's call for expansion of housing opportunities outside of the inner city is an alternative that could have significant impacts on promoting economic mobility.⁷ Evidence for this call for expansion comes primarily from the Gautreaux Housing Demonstration.⁸ The Gautreaux Demonstration was initiated in Chicago and places families eligible for public housing, most of whom are black and headed by a female, in suburban rental developments throughout the Chicago suburbs.⁹ By comparing these families to other families who

5. See WILLIAM J. WILSON, *THE TRULY DISADVANTAGED* 58 (1987).

6. *Id.* at 60.

7. Kerner Commission, *supra* note 1, at 13.

8. The Gautreaux Demonstration is a court-mandated program resulting from the Supreme Court's decision in *Hills v. Gautreaux*, 425 U.S. 284 (1976). See James E. Rosenbaum, *Black Pioneers - Do Their Moves to the Suburbs Increase Economic Opportunity for Mothers and Children?*, 2 HOUS. POL'Y DEBATE 1179, 1181 (1991). In the *Gautreaux* decision, the Supreme Court recognized the court of appeal's determination that the Department of Housing and Urban Development (HUD) violated the Fifth Amendment and the 1964 Civil Rights Act by funding the Chicago Housing Authority's (CHA) racially discriminatory family public housing program. *Gautreaux*, 425 U.S. at 296. The *Gautreaux* decision "prohibited public authorities from placing housing projects exclusively in black neighborhoods." MASSEY & DENTON, *supra* note 3, at 83.

9. See *Gautreaux*, 425 U.S. at 296. The Supreme Court fashioned a remedy which required that "public housing be developed in areas that will afford respondents an opportunity to reside in desegregated neighborhoods." *Id.* The proposed remedial order provided that HUD and CHA create housing alternatives in the city of Chicago, as well as in the Chicago suburbs. See *id.* at 1547; see also Rosenbaum, *supra* note 8, at 1180 (commenting that the *Gautreaux* program "puts [black] families in proximity to the economic opportunities of the thriving suburbs, which offer more jobs than the inner city.

received subsidized housing support but who stayed in the Chicago inner city, James E. Rosenbaum has shown that adults moving to the suburbs are more likely to be employed and their children are more likely to excel in school and to get better jobs.¹⁰

What are the implications of these findings for housing policy? If housing initiatives such as the Gautreaux demonstration succeed in enabling poor, black households to live in the suburbs, then the Gautreaux data suggests that such programs will succeed not only in promoting racial integration but also will enhance economic mobility for disadvantaged families.¹¹ Based on this premise, in 1991 Congress authorized a five year residential mobility demonstration, Moving to Opportunity for Fair Housing,¹² which extends a Gautreaux-like program to four other cities.¹³ Moreover, in the Clinton Administration, HUD Secretary Henry G. Cisneros has made the promotion of geographic mobility of poor people a HUD priority.¹⁴

In addition to these efforts at the federal level, a small number of communities and states are attempting to remedy the problems of socioeconomic separation through "fair share housing" programs. Fair share housing programs determine "where housing, especially low- and moderate-income units, should be built within a region according to such criteria as placing housing where it will expand housing opportunity, where it is most needed,

It also puts their children in suburban schools, which may offer better educational opportunities.").

10. See Rosenbaum, *supra* note 8, at 1203.

11. See MASSEY & DENTON, *supra* note 3, at 231 (commenting on Gautreaux data and opining that "participants did not encounter the kind of white hostility commonly experienced by project inhabitants").

12. See OFFICE OF POL'Y DEV. AND RES., U.S. DEP'T OF HOUS. AND URBAN DEV., PROMOTING HOUSING CHOICE IN HUD'S RENTAL ASSISTANCE PROGRAMS vii (1995) [hereinafter PROMOTING HOUSING CHOICE] ("[Moving to Opportunity for Fair Housing] will provide approximately 2,000 families living in distressed inner-city neighborhoods with rental certificates and vouchers, as well as counseling and other assistance, to aid them in moving to low-poverty areas.").

13. See U. S. DEP'T OF HOUS. AND URBAN DEV., Urban Policy No. 1 at 5 (Sept. 1994) [hereinafter URBAN POLICY]. The test cities are Los Angeles, Boston, Chicago, Baltimore, and New York. See *id.*

14. See *id.*

and where it is most suitable.”¹⁵ Fair share housing programs actively promote affordable housing opportunities in the suburbs for inner-city residents as a means of enhancing economic opportunity.¹⁶ As described in subsequent sections of this article, the concept of fair share housing has been developed and refined over the past two decades.

Over the course of this period, however, fair share housing schemes have been adopted by relatively few jurisdictions. In general, the fair share housing movement has not spread very widely. The question therefore becomes: What are the prospects for the wider adoption of fair share housing schemes? Is it a limited reform that will continue to be practiced in a few places or are there reasons to believe that fair share housing might become more widespread? If the latter is a possibility, then one must ask which approaches to fair share housing will most likely appeal to jurisdictions and regions that currently lack a fair share housing approach.

This article argues that Florida represents an important indicator of the degree to which the fair share housing movement can become more substantially widespread in the United States. In addition to sharing problems associated with socioeconomic and racial segregation with the rest of the nation, Florida also possesses much of the legal framework necessary to initiate a statewide fair share housing program. Because this framework exists, Florida’s failure to initiate a fair share program will call the broad scale applicability of fair share housing schemes into question.

Part II of the article explores the need for fair share housing in Florida. Part III examines the current statutory scheme that could provide a basis for fair share housing in Florida. Part IV identifies federal and state fair share housing programs, describes each program, and illustrates how such programs could work in Florida.

15. DAVID LISTOKIN, FAIR SHARE HOUSING ALLOCATION 1 (1976).

16. For example, participants in the Gautreaux demonstration who moved from the inner city to the suburbs “were more likely to be employed after their move [from the city of Chicago] . . . [and] attributed their success to more job opportunities, less fear for their family’s safety, and the influence of positive role models.” URBAN POLICY, *supra* note 13, at 4.

Part V recommends a fair share housing program for Florida, borrowing from the statutory schemes of other states.

II. THE NEED FOR FAIR SHARE HOUSING IN FLORIDA

Although the rapid population growth of Florida's largest metropolitan areas distinguish these areas from the slower growing metropolitan areas in older parts of the nation, Florida's metropolitan areas reflect the same trends of isolation that have increasingly separated central city populations from economic opportunities in other parts of the nation. Table 1 shows that between 1980 and 1990, the percentage of the metropolitan and central city population working in the central city of Florida's six largest Metropolitan Statistical Areas (MSAs) has declined.¹⁷

For example, in 1980, 46% of the Miami MSA working population worked in the MSA's central cities (Miami or Hialeah).¹⁸ By 1990, this percentage had dropped to 37%, thereby reflecting a higher percentage of the population working in the MSA's suburban communities.¹⁹ Additionally, in 1980, 67% of Miami and Hialeah city residents worked in one of those two cities, while in 1990 this percentage dropped to 60%.²⁰ Similar shifts occurred in Orlando, Ft. Lauderdale, Tampa-St. Petersburg, and West Palm Beach.²¹ Thus, the shift toward suburban employment during the 1980s showed that fewer residents of Florida's largest central cities could find employment in the inner city.²²

Just as employment shifted to the suburban areas of Florida's largest metropolitan areas, the concentration of poverty in the state's central cities increased in the 1980s, rising more rapidly than in the suburbs.²³ Table 2 shows that the incidence of poverty

17. See Appendix, Table 1. The Jacksonville MSA is excluded from this analysis because the City of Jacksonville is coterminous with that MSA's largest county, Duval County, thereby resulting in most of the MSA's population residing in the MSA's central city. This situation is not observed in any of the other Florida MSAs. See *id.*

18. See *id.*

19. See *id.*

20. See *id.*

21. See *id.*

22. See *id.*

23. See Appendix, Table 2.

increased in four of the five large metropolitan areas. Moreover, the ratio of central city to MSA poverty rates increased in all five metropolitan areas.²⁴ This suggests that regardless of whether central city poverty rates were rising (as they were in the Miami, Ft. Lauderdale, Tampa, and West Palm Beach MSAs)²⁵ or were falling (as in the Orlando MSA),²⁶ that the MSA poverty rate grew at a faster rate than the suburban poverty rate.²⁷ This growth suggests that the central cities of these five metropolitan areas are experiencing more rapidly increasing concentrations of poverty than their adjacent suburban communities.

In addition to experiencing increased concentrations of poverty than their suburban neighbors, the central cities of Florida's largest metropolitan areas are also experiencing higher concentrations of minority (chiefly African American and Hispanic) populations.²⁸ Four of the five metropolitan areas display a minority inner-city population percentage that is at least two-thirds higher than the minority percentage of the nearby suburban communities.²⁹

Consistent with a finding of high minority concentrations in Florida's central cities, studies of racial segregation indicate a significant separation of whites and blacks in Florida's cities.³⁰ Using the index of dissimilarity to measure the degree of African American-White segregation in the one hundred largest central cities in the United States, Kasarda found that Miami, St. Petersburg, and Ft. Lauderdale had the eighth, ninth, and seventeenth highest levels of racial segregation in the nation. Tampa and Jacksonville were ranked forty-first and sixty-first.³¹

24. *See id.*

25. *See id.*

26. *See id.*

27. Between 1980 and 1990, the Orlando city poverty rate fell at a slower rate than the Orlando MSA poverty rate, reflecting the increasing poverty conditions in the Orlando inner city. *See* Appendix, Table 2.

28. *See* Appendix, Table 3.

29. *See id.*

30. *See* John D. Kasarda, *Cities as Places Where People Live and Work: Urban Change and Neighborhood Distress*, in *INTERWOVEN DESTINIES: CITIES AND THE NATION* 99 (Henry Cisneros ed., 1993).

31. *See id.* at 122-23.

III. FLORIDA AS A TEST CASE FOR FAIR SHARE HOUSING

Florida is an important test of fair share housing's potential for wider appeal in other states. At this time, Florida does not have any fair share housing requirements. Nevertheless, Florida's housing policies, codified in its Growth Management Act,³² place it in a strong position to move toward a fair share housing approach.

Created in 1985,³³ Florida's Growth Management Act requires all jurisdictions in the state to produce a comprehensive plan.³⁴ Among the elements required in the plan is a housing element. Jurisdictions are required to prepare a housing element that includes: (1) a provision of housing for all current and anticipated future residents of the jurisdiction; and (2) a provision for adequate sites for future housing, including housing for low income, very low income, and moderate income families, mobile homes, and group home facilities and foster care facilities, with supporting infrastructure and public facilities.³⁵

The Growth Management Act, therefore, requires all local jurisdictions in Florida to provide for affordable housing to households that live or are expected to live in a city or county.³⁶ By requiring local jurisdictions to plan for the housing needs of low income households and the housing needs of potential residents, Florida law lays the groundwork for requiring local jurisdictions to meet their fair share of housing need.

Until 1993, jurisdictions were relatively free to establish their own definition of housing need, thereby resulting in wide variation in housing needs estimates. Jurisdictions could avoid meeting even their current housing needs by defining their housing need to minimize housing deficiencies that the jurisdiction was required to address. Consequently, it has been very difficult to determine whether the state as a whole, as well as regions and communities, were meeting the low income housing needs they were required to

32. FLA. STAT. §§ 163.3161-.3215 (1995).

33. 1985 Fla. Laws ch. 85-55 (codified as amended at FLA. STAT. §§ 163.3161-.3215 (1995)) (officially titled the "Omnibus Growth Management Act of 1985").

34. See FLA. STAT. § 163.3184 (1995).

35. See *id.* § 163.3177.

36. See *id.*

identify. The Florida Department of Community Affairs's (DCA) 1991 report on affordable housing identified the absence of a uniform housing need definition as a significant problem and urged that a statewide definition be developed.³⁷ The DCA also encouraged measurement of the progress of each local government in stimulating the development of affordable housing.³⁸

In response to such concerns, the 1993 Florida Legislature amended the Growth Management Act to require state measurement of housing needs in each local jurisdiction.³⁹ This procedure promises to create an independent, objective determination of housing need. Similar housing need determinations in California and New Jersey are critical to defining the fair share housing obligations in each of those states.⁴⁰ With state determination of housing need, local jurisdictions are less able to underestimate housing need and thereby avoid responsibility for meeting their fair share of overall housing need. By instituting a uniform determination of local housing need, the 1993 Florida Legislature contributed to the establishment of a foundation upon which a state mandated fair share housing obligation can be built.

Enacted in 1972 by the Florida Legislature,⁴¹ the Development of Regional Impact (DRI) review process⁴² creates an additional framework for encouraging fair share housing agreements. The regional planning agency must prepare a report on the regional impact of the development.⁴³ In their reports, regional planning agencies must conduct a review that will consider whether "the development will favorably or adversely affect the ability of people

37. See FLORIDA DEP'T OF COMMUNITY AFF., AFFORDABLE HOUSING IN FLORIDA 15-16 (1991).

38. See *id.* at 16.

39. 1993 Fla. Laws ch. 93-206 (codified at FLA. STAT. § 163.3177(6)(f)(2) (1995)) ("[T]he state planning agency shall conduct an affordable housing needs estimate for all local jurisdictions on schedule that coordinates the implementation of the needs assessment . . .").

40. See discussion *infra* Part IV.

41. 1972 Fla. Laws ch. 72-317 (codified at FLA. STAT. § 380.06 (1995)).

42. A development of regional impact refers to "any development which, because of its character, magnitude, or location, would have a substantial effect upon the health, safety, or welfare of citizens of more than one county." FLA. STAT. § 380.06(1) (1995).

43. See *id.* § 380.06(12)(a).

to find adequate housing reasonably accessible to their places of employment Adequate housing means housing that is available for occupancy and that is not substandard."⁴⁴

By concentrating on the relationship between new, large-scale developments, many of which generate significant employment opportunities and adequate housing, the DRI statute establishes a procedure by which the affordable housing needs that complement the employment opportunities created by DRI developments can be exposed.⁴⁵ Although local jurisdictions have the right under DRI legislation to issue a development order, the regional planning council and the State of Florida each possess the right to appeal the development order to the Florida Land and Water Adjudicatory Commission.⁴⁶ Under the DRI legislation, therefore, regional and state planning agencies have the authority to place pressure on local governments and developers to create affordable housing opportunities in situations where employment opportunities are created and insufficient affordable housing is available in the existing stock.

Florida adopted the State Housing Initiatives Program (SHIP)⁴⁷ in 1992, in addition to other affordable housing finance incentives and programs.⁴⁸ The total SHIP allocation was \$26.5 million for the 1994-95 fiscal year and is expected to grow to \$80 million in the 1995-96 fiscal year. With this financial backing, Florida should be able to generate significantly more resources for assisting the development of affordable housing.⁴⁹ Thus, Florida is in a

44. *Id.* § 380.06(12)(a)3.

45. *See generally id.* § 380.06 (outlining the DRI process).

46. *See id.* § 380.06(25)(f), (h).

47. 1992 Fla. Laws ch. 92-317 (codified at FLA. STAT. §§ 420.907-.9079 (1995)).

48. Other Florida housing programs include the Homeowner Assistance Program (FLA. STAT. § 420.5088 (1995)), State Apartment Incentive Loan (SAIL) program (FLA. STAT. § 420.5087 (1995)), Housing Predevelopment Loan Program (FLA. STAT. § 420.525 (1995)), Florida Small Cities Community Development Block Grant Program (FLA. STAT. §§ 290.0401-.049 (1995)), Community Development Corporation Support and Assistance Program (FLA. STAT. §§ 290.0311-.0395 (1995)), and Community Contribution Tax Incentive Program (FLA. STAT. § 220.183 (1995)).

49. *See* FLORIDA HOUS. FIN. AGENCY, SHIP PROGRAM ALLOCATION (1994) (projecting total SHIP allocation for all Florida counties) [hereinafter SHIP PROGRAM].

comparatively strong position to provide the financing needed to employ a fair share housing alternative.

In general, Florida has established the statutory framework for developing a fair share housing policy. The Growth Management Act requires that jurisdictions plan for the housing needs of low income households, and creates a process by which the state will determine local housing need, thereby making it less likely that jurisdictions will be able to shirk their affordable housing responsibilities.⁵⁰ The Growth Management Act, therefore, provides the “stick” by which the State of Florida can establish fair share housing objectives for each local jurisdiction.

In turn, the SHIP program, along with other State of Florida housing programs, creates a “carrot” through which local jurisdictions have both the incentive and the means to fulfill their fair share housing obligations.⁵¹ Moreover, in a growth-oriented state such as Florida, where real estate development is fed by emigration and suburban development, the economic prospects for a fair share housing policy are good. Such policies are generally designed to work in growing metropolitan economies. The development of affordable housing can be a part of that growth.

Despite the potential for fair share housing in Florida, fair share housing has not been a focus of the state’s housing policy discussions. The absence of fair housing as a significant issue is seen in the reports of Florida’s Affordable Housing Study Commission (Housing Commission), established by the Florida Legislature in 1986.⁵² The Housing Commission was charged by the Florida Legislature to “review, evaluate, and make recommendations regarding existing and proposed housing programs and initiatives.”⁵³ Since 1986, however, the Housing Commission has devoted little attention to fair share housing.⁵⁴ In its 1988 report,

50. See FLA. STAT. § 163.3177 (1995).

51. See SHIP PROGRAM, *supra* note 49.

52. 1986 Fla. Laws ch. 86-192 (codified at FLA. STAT. § 420.609 (1995)).

53. *Id.*

54. See, e.g., FLORIDA AFFORDABLE HOUS. STUDY COMM’N, FINAL REPORT OF THE AFFORDABLE HOUS. STUDY COMM’N (Dec. 1987) [hereinafter 1987 REPORT]; FLORIDA AFFORDABLE HOUS. STUDY COMM’N, THE REPORT OF THE AFFORDABLE HOUS. STUDY COMM’N (Dec. 1988) [hereinafter 1988 REPORT]; THE GOVERNOR’S AFFORDABLE HOUS.

the Commission drafted recommendations creating an "equitable distribution" system of affordable housing.⁵⁵ But no legislative action followed these recommendations. In 1994, a Housing Commission staff report called for consideration of fair share housing as a policy option.⁵⁶ The Housing Commission deferred consideration of this and other regulatory reform options and instead made plans to consider them in its 1995 work plan.⁵⁷ The 1995 Housing Commission report, however, makes no mention of fair share housing.⁵⁸

Although Florida possesses some key ingredients for creating a fair share housing policy, little has been done to institute fair share housing. The remainder of this article will focus on fair share housing initiatives pursued by the Federal Government and by other states that offer helpful alternatives to the current Florida housing situation. The advantages and disadvantages of these alternatives will be discussed and general recommendations will be made, tailoring these alternatives to Florida's growth management policies.

IV. FAIR SHARE HOUSING PRACTICE OUTSIDE OF FLORIDA

The federal government and several states, including California, New Jersey, Massachusetts, Rhode Island, and Oregon, have implemented fair share housing programs that can serve as a tool for Florida in implementing its own fair share housing program. A complete understanding of each program's unique features is

STUDY COMM'N, FINAL REPORT (Dec. 1992) [hereinafter 1992 REPORT]; FLORIDA AFFORDABLE HOUS. STUDY COMM'N, FINAL REPORT (December 1993) [hereinafter 1993 REPORT]; FLORIDA AFFORDABLE HOUS. STUDY COMM'N, BRINGING THE PIECES TOGETHER: THE AFFORDABLE HOUS. STUDY COMM'N FINAL REPORT (Dec.1994) [hereinafter 1994 REPORT]; FLORIDA AFFORDABLE HOUS. STUDY COMM'N, FINAL REPORT (December 1995) [hereinafter 1995 REPORT]. No reports were published in 1989, 1990, or 1991. See Interview with Marcus Hepburn, Planning Manager, Department of Community Affairs, Division of Housing and Community Development (Mar. 15, 1995).

55. See AFFORDABLE HOUS. STUDY COMM'N, HOUSING OPPORTUNITIES THROUGH REGULATORY REFORM 16 (1994).

56. See *id.* at 17.

57. See 1994 REPORT, *supra* note 54, at 36.

58. See 1995 REPORT, *supra* note 54.

necessary to evaluate the elements that would be most effective in Florida.

A. *The Federal Government and Fair Share Housing*

Fair share housing plans originated in the early 1970s and were generally developed by councils of government or regional planning commissions.⁵⁹ By 1975, at least forty jurisdictions, including Jacksonville and Dade County in Florida,⁶⁰ had implemented, adopted, proposed, or were considering a fair share plan.

These plans were primarily a response to the opportunity provided by various federal programs and incentives, including the Section 701 planning grant program,⁶¹ which provided financial assistance to regional planning agencies. Created in the 1954 Housing Act, the Section 701 planning grant program was amended in 1968⁶² to require a housing element to consider regional housing needs.⁶³ Through a combination of financial incentives and pressure from HUD, a number of regional planning agencies created regional housing allocation plans under the auspices of Section 701.⁶⁴

Further federal incentives for regional fair share plans came in 1969 with the creation of the A-95 review process, which was established pursuant to the Intergovernmental Cooperation Act of 1968.⁶⁵ The A-95 review process required that "all applications for

59. LISTOKIN, *supra* note 15, at 2, 7 (noting that the first fair share effort was promulgated in 1970 and that the 1970s saw "a proliferation of regional planning entities such as councils of government and county planning boards").

60. *See id.* at 2.

61. 40 U.S.C. § 461(a) (1954) (repealed 1981). The 1954 Housing Act authorized Urban Planning Assistance, which is commonly known as the Section 701 program. *See* LISTOKIN, *supra* note 15, at 5.

62. Pub. L. No. 90-448, tit. VI, § 601, 82 Stat. 526 (1968).

63. *See* LISTOKIN, *supra* note 15, at 6. The housing element was implemented to ensure that the "housing needs of both the region and the local communities studied in the [comprehensive plan would] be adequately covered in terms of existing and prospective immigrant population growth." *Id.*

64. *See id.*

65. Intergovernmental Coordination Act of 1968, Pub. L. No. 90-577, tit. I, § 101-110, 82 Stat. 1098-1101 (1968) (codified at 42 U.S.C. § 4201 (1968)) (repealed 1982); *see also* AMERICAN BAR ASS'N ADVISORY COMM'N ON HOUS. AND URB. GROWTH, HOUSING FOR ALL

federal grants be reviewed by a state, regional, or metropolitan clearinghouse.”⁶⁶ The review process gave regional planning agencies the potentially significant right to identify any possible problems with the grant proposal.⁶⁷ The need for cooperation with local governments and the consequential political sensitivity felt by regional planning agencies, however, frequently resulted in perfunctory regional reviews.⁶⁸

Finally, in the Housing and Urban Development Act of 1968,⁶⁹ the federal government set out on an ambitious plan to produce twenty-six million new or rehabilitated dwelling units in ten years. Six million units of the twenty-six would be affordable to low and moderate income households.⁷⁰ The Act resulted in the production of 655,923 dwelling units between 1968 and 1972.⁷¹ After this increase in dwelling units, the success of fair share plans was more probable because of the increased availability of subsidized units—the fundamental building block of fair share plans.

These federal tools were effectively utilized by the Miami Valley Regional Planning Commission (MVRPC) in the Dayton, Ohio metropolitan area, which in 1970 created the nation’s first fair share housing plan.⁷² Under the Dayton Plan, the five county region was divided into fifty-three planning units.⁷³ Equally weighted allocation criteria were used to allocate low and moderate housing units.⁷⁴ The criteria included the number of households with income under \$10,000, number of total

UNDER LAW: NEW DIRECTIONS IN HOUSING, LAND USE, AND PLANNING 36 (Richard P. Fishman ed., 1978) [hereinafter AMERICAN BAR ASS’N].

66. AMERICAN BAR ASS’N, *supra* note 65, at 36-37.

67. *See id.* at 37. The A-95 review process required the review of grant applications in order “to identify any possible interjurisdictional problems or opportunities associated with the proposal.” *Id.* at 36-37.

68. *See id.* at 469.

69. Housing and Urban Development Act of 1968, Pub. L. 90-19, § 6(a), 81 Stat. 21 (1968) (codified at 42 U.S.C. § 1441(a) (West 1994)).

70. *See* AMERICAN BAR ASS’N, *supra* note 65, at 436.

71. *See id.*

72. *See* LISTOKIN, *supra* note 15, at 118; *see also* AMERICAN BAR ASS’N, *supra* note 65, at 38, 469.

73. *See* LISTOKIN, *supra* note 15, at 118.

74. *See id.* at 118, 120.

households, assessed valuation per pupil, pupils in excess of normal capacity, and number of acres of suitable vacant land.⁷⁵

While considerable support was generated for approval of the Dayton Plan, implementation was difficult because communities resisted the location of units, and several threatened to leave the MVRPC.⁷⁶ This initial resistance was overcome, and by February 1976, more than 8,000 units had been constructed under the fair share plan.⁷⁷ This construction level significantly exceeded low and moderate income housing production in prior years.⁷⁸

According to the MVRPC executive director, Dale Bertsch, fundamental to the Dayton Plan's success was: (1) Section 701 planning funds that paid for the extensive staffwork needed to prepare the plan; (2) the 1968 amendment to Section 701 that required federally funded regional plans to have housing elements; (3) the commitment by HUD to subsidized housing units under the Housing Act of 1968; (4) the cooperation of the Federal Housing Administration (FHA) in insuring homes built under the Dayton Plan; and (5) the availability of A-95 review powers to control the award of federal funds to jurisdictions contingent upon the jurisdictions' cooperation with the Dayton Plan.⁷⁹

After 1973, the ability of the MVRPC and other regional planning councils to affect the allocation of affordable housing in its region was weakened by the Nixon housing moratorium of that year,⁸⁰ a shift in leadership at HUD that resulted in less support for fair share housing plans,⁸¹ and the passage of the Housing and Community Development Act of 1974 (1974 Housing Act).⁸² In

75. *See id.* at 178.

76. *See id.* at 121.

77. *See id.*

78. *See id.* at 125.

79. *See* NORMAN KRUMHOLZ & PIERRE CLAVEL, *REINVENTING CITIES: EQUITY PLANNERS TELL THEIR STORIES* 51, 58 (1994).

80. *See* AMERICAN BAR ASS'N, *supra* note 65, at 436, 470 (commenting that progress on affordable housing was halted due to the moratorium of subsidized housing, and that had there not been "a moratorium on federal subsidies in January 1973, it is possible that many of the regional allocation plans would have produced more significant results").

81. George Romney was succeeded at HUD by James Lynn and Carla Hills. *See* KRUMHOLZ & CLAVEL, *supra* note 79, at 59.

82. Housing and Community Development Act of 1974, Pub. L. No. 93-383, tit. I, § 101, 88 Stat. 633 (1974) (codified at 42 U.S.C. § 1439(f)(c)(3) (1994)).

general, the changing housing policies reflected in the second Nixon administration led to the weakening of fair share planning in various regions that had undertaken fair share housing efforts prior to 1973.⁸³ The 1974 Housing Act converted federal local assistance programs from competitive, categorical grants to block grants in which local governments were given more discretion on how to spend their federal funds.⁸⁴ The 1974 Housing Act thereby weakened the ability of regional planning councils to employ their A-95 review powers to obtain compliance with their fair share housing plans. Without strong federal support for fair share housing, suburban jurisdictions were unlikely to embrace the concept.⁸⁵

Passage of the 1974 Housing Act did not result, however, in total abandonment of efforts to encourage suburban jurisdictions to take on the responsibility of affordable housing. The 1974 Housing Act aimed to achieve spatial deconcentration of housing opportunities for low income persons.⁸⁶ To further this objective, the 1974 Housing Act required Community Development Block Grant (CDBG) recipients to prepare a Housing Assistance Plan (HAP).⁸⁷ Consistent with the purposes of fair share housing, HAPs were to reflect not only a community's current low income housing needs but also the needs of low income households that were *expected to reside* there.⁸⁸ Proposals for subsidized housing were required to be consistent with the HAP.⁸⁹ The "expected to reside" criterion was hard to implement because the concept proved

83. See AMERICAN BAR ASS'N, *supra* note 65, at 470.

84. See MICHAEL DANIELSON, *THE POLITICS OF EXCLUSION* 277-78 (1976); see also KRUMHOLZ & CLAVEL, *supra* note 79, at 59.

85. See DANIELSON, *supra* note 84, at 278.

86. See 42 U.S.C. § 5301(c)(6) (1974).

87. See AMERICAN BAR ASS'N, *supra* note 65, at 38. In order for a community to receive community development funds, the community was required to assess and provide for low and moderate income housing needs. See *id.* at 24. Thus, the receipt of federal money was linked to the preparation of a Housing Assistance Plan. See U. S. DEP'T OF HOUS. & URBAN DEV., OFFICE OF POL'Y DEV. & RES., REGIONAL HOUSING OPPORTUNITIES FOR LOWER INCOME HOUSEHOLDS (1994) [hereinafter HOUSING OPPORTUNITIES].

88. See 42 U.S.C. § 5304(a)(4) (1974); see also AMERICAN BAR ASS'N, *supra* note 65, at 38.

89. See 42 U.S.C. § 1439(a).

difficult to operationalize.⁹⁰ Jurisdictions placed lower priority on this objective than on the other objectives of the 1974 Housing Act.⁹¹ Under the Reagan and Bush administrations, the entire HAP planning process was debilitated by: (1) elimination of the HAP requirement for small cities in 1981; (2) significant reduction in housing subsidies that took place during this period; and (3) elimination of the HAP requirement for all jurisdictions in 1990.⁹²

In an attempt to strengthen the spatial deconcentration objective of the 1974 Housing Act, HUD created the Areawide Housing Opportunity Plan (AHOP) program in 1976, whereby additional Section 8 housing subsidy funds, 701 planning funds, and CDBG funds were provided to regions that established regional allocation plans.⁹³ By 1980, thirty-four AHOPs had been approved and \$105 million had been granted to AHOP-funded regions.⁹⁴ About 70% of those funds went for additional Section 8 housing subsidy funds.⁹⁵ However, in 1981, the Reagan Administration terminated the AHOP program.⁹⁶

With the demise of the AHOP program in 1981, HUD's efforts to promote fair share housing subsided significantly. Since that time, fair share housing initiatives have originated primarily in the states.⁹⁷ As noted earlier, since 1991, the federal government has run a five city demonstration program, Moving to Opportunity for Fair Housing, which seeks to promote spatial deconcentration of poor people⁹⁸ by using HUD's Section 8 rental assistance programs

90. See Kenneth D. Bleakly, Jr., *Expected to Reside: The Response From the Counties*, in *METHODS OF HOUSING ANALYSIS: TECHNIQUES AND CASE STUDIES* 465 (James A. Hughes ed., 1977) (commenting that the difficulty with the "expected to reside" criteria stemmed from "the attempt at estimation (of the number of lower income households expected to reside in a community) which result[ed] in a great deal of anxiety and frustration among HUD administrators and local program personnel alike").

91. See U.S. DEP'T OF HOUS. AND URBAN DEV., *COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM* (1975).

92. See *HOUSING OPPORTUNITIES*, *supra* note 87, at 97.

93. See *id.* at 216.

94. See *id.* at 219 (totalling the number of AHOP areas from 1976, 1978, and 1980 and totalling the amount of bonus funds granted in those years).

95. See *id.*

96. See *id.* at 218.

97. See discussion *infra* Part IV. B-F (examining state efforts for affordable housing).

98. See *PROMOTING HOUSING CHOICE*, *supra* note 12, at vii.

to enable migration to low poverty neighborhoods.⁹⁹ In addition, Section 8 rental assistance subsidies have been used in a small number of instances, including the Chicago-based Gautreaux demonstration, where there have been judicial or administrative findings of racial discrimination practiced by local government housing agencies.¹⁰⁰ In these instances, Section 8 tenant subsidies, along with landlord outreach, tenant screening, housing search counseling, and follow-up services, have been used to help low income and minority households move to better neighborhoods.¹⁰¹ According to a recent HUD study, these programs have been successful in enabling Section 8 recipients to move to less segregated neighborhoods.¹⁰² Participants in the mobility programs are more likely to be employed and their children are more likely to achieve in school than similarly situated non-participants.¹⁰³

Despite these recent efforts, the federal government is not the major player in fair share housing that it promised to be in the early 1970s when the MVRPC prepared the Dayton Plan.¹⁰⁴ The Moving to Opportunity for Fair Housing program remains a mere demonstration. Additionally, the use of Section 8 rental assistance has been utilized largely as a remedy to anti-discrimination court suits, rather than as a local response to federal housing policy.¹⁰⁵ In contrast, the MVRPC was able to take advantage of Section 701 federal planning assistance,¹⁰⁶ A-95 review authority,¹⁰⁷ housing subsidy assistance created under the Housing and Urban Development Act of 1968, and the sympathetic ear of HUD

99. *See id.*

100. *See id.* at viii (noting that HUD encourages “the use of mobility programs [such as the Gautreaux demonstration] as a partial remedy for settling desegregation-related lawsuits to which it is a party”).

101. *See id.* at 1.

102. *See id.*

103. *See id.* at 71-72.

104. *See generally* KRUMHOLZ & CLAVEL, *supra* note 79, at 45 (discussing the development of the Dayton Plan).

105. *See* PROMOTING HOUSING CHOICE, *supra* note 12, at viii.

106. *See* KRUMHOLZ & CLAVEL, *supra* note 79, at 49. Section 701 programs use federal funding to support local urban planning efforts. *See id.* at 58.

107. *See id.*

Secretary George Romney.¹⁰⁸ These influences were temporary, leaving fair share housing initiatives up to the states.

B. California Housing Element Requirements for Fair Share Housing

In California, as in Florida, state law requires all local governments to adopt a general plan and such plans must include a housing element that is submitted for review and comment to California's Department of Housing and Community Development (HCD).¹⁰⁹ In contrast to Florida, however, California's housing element law requires that local jurisdictions evaluate their share of regional housing need as part of the local housing need estimate. Specifically, California law requires housing element need assessments to include "an analysis of population and employment trends and documentation of projections and quantification of the locality's existing and projected housing needs for all income levels. *These existing and projected needs shall include the locality's share of the regional housing need in accordance with Section 65584.*"¹¹⁰

For purposes of determining each jurisdiction's share of housing need, California requires estimation of the number of existing and projected households in each locality broken down into four income categories: very low income (income not exceeding 50% of area median family income), low income (50 to 80% of area median income), moderate income (80 to 120% of area median income), and above moderate income (above 120% of area median income).¹¹¹ This means that not only must California local governments estimate total current and projected housing need, but the need must be broken down by income level to allow an estimate of very low income and low income housing need to be obtained.

In addition to requiring jurisdictions to include their share of regional housing need in their estimates of local housing need, California law specifies the criteria that must be used in determining

108. *See id.*

109. *See* CAL. GOVT. CODE § 65300 (West 1996); *see also id.* § 65585.

110. *Id.* § 65583(a) (emphasis added).

111. *See* CALIFORNIA DEP'T OF HOUS. AND COMMUNITY DEV., *Developing a Regional Housing Needs Plan 10* (1988) [hereinafter HOUSING NEEDS PLAN].

each jurisdiction's fair share of local need. A jurisdiction's share of regional housing need is defined as including "that share of the housing need of persons at all income levels within the area significantly affected by a general plan of the city or county."¹¹²

California housing law requires that the determination of a community's share of regional housing take into consideration a variety of factors that influence housing demand, including market demand for housing, employment opportunities, commuting patterns, as well as factors that influence housing supply, such as the availability of suitable sites and public facilities.¹¹³ California housing law also requires that the distribution of regional housing need seek to "reduce the concentration of lower income households in cities or counties which already have disproportionately high proportions of lower income households."¹¹⁴ Consequently, in California, fair share is determined not only by existing and projected demand for housing but also by efforts to shift low income housing to areas with fewer low income households. By shifting the demand, communities which have traditionally had few poor people must take responsibility for housing a greater share of their region's lower income households.

Actual responsibility in California for delineation of a jurisdiction's housing needs is a responsibility shared by state, regional, and local government. Although state housing need is determined by HCD, regional housing need is jointly determined by state and regional governments (in this situation, Councils of Governments (COGs)), with the state government retaining final authority for delineating regional housing need.¹¹⁵ In turn, local housing need is determined jointly by regional and local governments, using guidelines and data provided by the State and with COGs retaining final authority for determining a jurisdiction's share of regional housing need.¹¹⁶

112. CAL. GOVT. CODE § 65584(a).

113. *See id.*

114. *Id.*

115. *See* CAL. GOVT. CODE § 65584.

116. *See id.*; *see also* HOUSING NEEDS PLAN, *supra* note 111.

Although HCD must determine whether a jurisdiction's housing element is in compliance with state law,¹¹⁷ local jurisdictions are not required to bring their housing elements into compliance as long as they explain why they believe the element is within compliance.¹¹⁸ California law does not directly provide for penalties for noncompliance with the state statute.¹¹⁹ As a consequence, less than half of California's jurisdictions have housing elements that are in substantial compliance with state law.¹²⁰

Instead of relying on compulsory compliance, enforcement of housing element law is dependent on legal actions taken by affordable housing advocates when an affordable housing project is threatened with denial or unreasonable conditions that would make the project less affordable to low income households. Under California law, if a community has a housing element that is in substantial compliance with the housing law, then that community cannot deny a housing project simply because the project is inconsistent with the community's general plan. In addition, such a community must demonstrate that the project is an unnecessary component to meet the community's overall share of regional low income housing.¹²¹

In conclusion, California's housing element law differs from Florida's in two key respects. Florida's housing element requirements make no reference to fair share housing, whereas California's housing element requires jurisdictions to define housing need to include a jurisdiction's fair share of regional housing need.¹²² At the same time, however, local jurisdictions in California are not required to have housing elements that are in compliance with state HCD recommendations for fair share

117. See CAL. GOVT. CODE § 65583.1.

118. See *id.* § 65584(c)(1) (stating that if a local government proposes to revise its definition of its share of regional housing need, the local government must support such proposed revisions with "available data and accepted planning methodology, and . . . [with] adequate documentation").

119. See CAL. GOVT. CODE § 65585.

120. See PROMOTING HOUSING CHOICE, *supra* note 12, at 79.

121. See CAL. GOVT. CODE § 65589.5.

122. Compare *id.* § 65583-65585 with FLA. STAT. § 163.3184 (1995).

housing.¹²³ A key advantage of the Florida housing element law is that communities are required to adopt elements deemed by Florida's DCA as compliant with state law.¹²⁴ If Florida's compliance requirements were combined with California's fair share mandate, then the prospect for fair share housing in Florida would be greatly enhanced.

C. New Jersey Fair Housing Law

It is in New Jersey that the fair share housing doctrine has been most eloquently stated and elaborately implemented. The fair share housing doctrine was enunciated by the New Jersey Supreme Court in the *Mount Laurel* decisions.¹²⁵ The doctrine has been implemented in New Jersey's Fair Housing Act which was adopted on July 2, 1985.¹²⁶

In its 1975 *Mount Laurel* decision, the New Jersey Supreme Court found that each municipality in the state has a constitutional obligation to provide a realistic opportunity for a *fair share* of the region's present and future housing needs for low and very low income households.¹²⁷ Eight years later, the New Jersey Supreme Court responded to six cases that had been brought concerning the

123. Although a local government has the ability to propose revisions for its share of regional housing needs, see CAL. GOVT. CODE § 64484(c)(1), HCD must make sure that this determination of regional housing need is consistent with statewide housing needs. See *id.* § 65584(a).

124. See FLA. STAT. § 163.3184 (1995).

125. *South Burlington County NAACP v. Mount Laurel*, 336 A.2d 713 (N.J. 1975), *cert. denied*, 423 U.S. 808 (1975) (*Mount Laurel I*); *South Burlington County NAACP v. Mount Laurel*, 456 A.2d 390 (N.J. 1983) (*Mount Laurel II*).

126. 1985 N.J. Laws 222 (codified at N.J. STAT. ANN. § 52:27D-301 -329 (West 1996)).

127. See *Mount Laurel I*, 336 A.2d at 727 ("the presumptive obligation arises for each municipality affirmatively to plan and provide, by its land use regulations, the reasonable opportunity for an appropriate variety and choice of housing, including . . . low and moderate cost housing, to meet the needs, desires and resources of all categories of people who may desire to live within its boundaries"). Consistent with HUD's definitions, very low income means incomes of 50% or less of area median income and low income means between 50 and 80% of area median income. See 42 U.S.C. § 1437a(b)(2) (Supp. 1982). New Jersey elects to refer to the former income category as low income and to the latter category as moderate income. The author has elected to use the HUD nomenclature because it is more generally accepted.

1975 *Mount Laurel* decision.¹²⁸ The court ruled that its earlier decision had been met by “widespread non-compliance.”¹²⁹

In response, the court created specific guidelines for active judicial scrutiny of a jurisdiction’s compliance with the *Mount Laurel* doctrine and created a system of designated judges to review all *Mount Laurel* cases in a region.¹³⁰ These judges were given a variety of powers to enforce municipal cooperation within a particular area of the state.¹³¹ For example, the judges could require that a jurisdiction revise its zoning ordinance to facilitate low income housing¹³² and if the jurisdiction did not comply, then the judge could delay all development in that jurisdiction until it complied with the judge’s order.¹³³ Moreover, the New Jersey Supreme Court endorsed the builder’s remedy whereby builders of low income housing who successfully challenged zoning ordinances that prevented such housing could get a court order that effectively overruled the local jurisdiction’s zoning decision and permitted the housing to be built.¹³⁴

With its 1983 *Mount Laurel II* decision, the New Jersey Supreme Court indicated that the state’s courts would take an extremely activist role in seeing that local governments comply with the fair share doctrine articulated in the 1975 *Mount Laurel I* decision.¹³⁵ The New Jersey Legislature responded with the 1985 Fair Housing Act, the primary purpose of which is to reassert the responsibility

128. See *Mount Laurel II*, 456 A.2d at 410 n.1. The six cases that involved questions arising from *Mount Laurel I* are: *Southern Burlington County NAACP v. Mount Laurel*, 391 A.2d 935 (N.J. Super. Ct. 1978); *Urban League of Essex Co. v. Mahwah*, No. L-17112-71 (N.J. Super. Ct. May 8, 1979); *Glenview Dev. Co. v. Franklin*, 397 A.2d 384 (N.J. Super. Ct. 1978); *Caputo v. Chester*, No. L-42857-74 (N.J. Super. Ct. Oct. 4, 1978); *Round Valley, Inc. v. Clinton*, 413 A.2d 356 (N.J. Super. Ct. 1980); *Urban League of Greater New Brunswick v. Carteret*, 406 A.2d 1322 (N.J. Super. Ct. 1979), *rev’d*, *South Burlington County NAACP v. Mount Laurel*, 456 A.2d 390 (N.J. 1983).

129. *Mount Laurel II*, 456 A.2d at 410; see also Paula A. Franzese, *Mount Laurel III: The New Jersey Supreme Court’s Judicious Retreat*, in 1989 ZONING AND PLANNING LAW HANDBOOK 379, 382 (Mark S. Dennison ed., 1989).

130. See *Mount Laurel II*, 456 A.2d at 418-19.

131. See *id.* at 439.

132. See *id.* at 451.

133. See *id.* at 455; see also Franzese, *supra* note 129, at 383.

134. See *Mount Laurel II*, 456 A. 2d at 451-52; see also Franzese, *supra* note 129, at 383.

135. See *Mount Laurel II*, 456 A.2d at 390.

of the legislative and executive branches of government for shaping local housing policy.¹³⁶

In exchange for elimination of the builder's remedy, the 1985 Fair Housing Act created an administrative mechanism for encouraging local governments to assume responsibility for meeting their fair share housing obligations under the *Mount Laurel* doctrine.¹³⁷ To administer the fair share requirement, the Fair Housing Act created the Council on Affordable Housing (COAH), which consists of nine members appointed by the Governor with approval of the New Jersey Senate.¹³⁸

Duties of COAH include determination of the state's housing regions, estimation of present and prospective need for very low and low income housing at the state and regional levels, adoption of criteria for municipal determination of local present and prospective fair share of regional housing need, and projection of population and households for the state and its regions.¹³⁹

The 1985 Fair Housing Act establishes guidelines for municipal housing elements that encourage jurisdictions to develop housing policies that will meet each jurisdiction's fair share housing need.¹⁴⁰ Participation in the fair share housing need determination is voluntary. The primary motivation for participation is protection from builder's remedy suits. COAH substantially certifies jurisdictions whose housing elements and fair share plans are consistent with state housing rules and for which achievement of local fair share responsibilities is realistically possible.¹⁴¹

The 1985 Fair Housing Act also provides that COAH mediate disputes involving an objection to a jurisdiction's fair share plan.¹⁴² Moreover, any exclusionary zoning case filed against a municipality with a COAH certified fair share plan receives a presumption of validity for that community's zoning laws.¹⁴³

136. See N.J. STAT. ANN. § 52:27D-302 (West 1996).

137. See *id.* § 52:27D-302(b).

138. See *id.* § 52:27D-305.

139. See *id.* § 52:27D-307.

140. See 26 N.J. Reg. 2326-2328 (1994).

141. See N.J. STAT. ANN. §§ 52:27D-311, 313.

142. See *id.* § 52:27D-315.

143. See *id.* § 52:27D-317.

Finally, the 1985 Fair Housing Act grants jurisdictions the option of transferring up to one-half of a jurisdiction's fair share to another jurisdiction by agreement.¹⁴⁴ Such agreements require payment schedules through which the donating jurisdiction agrees to make payments that will enable the receiving jurisdiction to rehabilitate or construct housing affordable to very low and low income households.¹⁴⁵

According to a 1992 evaluation of the 1985 Fair Housing Act, 13,592 low and very low income housing units have been built or rehabilitated under the *Mount Laurel* obligation.¹⁴⁶ About 55% of these units were reserved for very low income households, while the remaining 45% were reserved for low income households.¹⁴⁷ Inclusionary developments account for nearly half of all units produced under the *Mount Laurel* obligation.¹⁴⁸ These developments include a fixed percentage of dwelling units affordable to very low and low income households. Inclusionary developments are the subsidy source that both the New Jersey Supreme Court and the 1985 New Jersey Legislature envisioned as being critical to suburban growth area compliance with the *Mount Laurel* doctrine.¹⁴⁹ Hence, COAH's regulations call for communities to zone vacant land with the assumption that a maximum of 20% of dwelling units will be set aside for occupancy by very low and low income households with a minimum gross density (dwelling units divided by total residential developable land) of at least six units per acre.¹⁵⁰ New Jersey's Balanced Housing trust fund serves as another significant subsidy source. The New Jersey Balanced Housing program was created by the

144. See *id.* § 52:27D-312a.

145. See *id.* § 52:27D-312f.

146. See BOB FITZPATRICK, NEW JERSEY DEP'T OF COMMUNITY AFFAIRS, *THE MATH OF MT. LAUREL 2* (Mar. 1993).

147. See *id.* at 4.

148. See *id.* at 6. Inclusionary development "is a private sector effort to create lower cost housing by subsidizing some units . . . with profits from the market-priced units in the development." *Id.* at 6-7.

149. See generally Sean Mehegan, *Avalanche on Mount Laurel: New Jersey's Troubled Affordable Housing System Stagers Under a Recession*, 21 N.J. REP. 44, 49-50 (1992) (discussing the application of inclusionary developments after the *Mt. Laurel* decision).

150. See 26 N.J. Reg. 2325 (1995).

1985 Fair Housing Act and has assisted in the development of approximately 3,000 dwelling units.¹⁵¹

Overall, however, New Jersey's 1985 Fair Housing Act has been only a partial success. The 13,592 housing units produced under the Act fall short of COAH's identified statewide need of approximately 145,000 units.¹⁵² Moreover, only about 25% of the state's municipalities have received substantive certification of their housing elements by COAH.¹⁵³

In the last decade, New Jersey's sluggish economy has explained the shortfall in affordable housing performance.¹⁵⁴ The *Mount Laurel* doctrine was premised on inclusionary zoning as an important device for supplying affordable housing. Because inclusionary zoning involves the setting aside of newly-constructed dwellings for very low and low income households, the state's slowdown in real estate development has resulted in lower levels of affordable housing development.¹⁵⁵ Additionally, New Jersey's Balanced Housing trust fund is supplied from real estate transfer tax revenue. The annual revenues used to fund this program declined from \$28 million in 1988 to \$11 million in 1991,¹⁵⁶ resulting from the real estate slowdown.

At the same time, the extensive use of inclusionary zoning as a device for generating affordable units demonstrates that such an approach is feasible with the presence of an active residential development market. Residential developers in New Jersey have been able to build market rate developments with a certain percentage of units, typically 20%, set aside for very low and low income households.¹⁵⁷

New Jersey's dependence on a statewide real estate transfer tax and on inclusionary zoning is akin to Florida's funding situation. Florida has a similar statewide real estate transfer tax funded pro-

151. See FITZPATRICK, *supra* note 146, at 8.

152. See *id.* at 11 (commenting that 13,592 units have been built, rehabilitated, or are under construction and identifying the predefined need at 145,707 units).

153. See *id.* at 9-10.

154. See Mehegan, *supra* note 149, at 47-48.

155. See *id.*

156. See *id.* at 49.

157. See *id.*

gram, SHIP,¹⁵⁸ but Florida's steady growth in the 1990s has permitted this program to continue to fund affordable housing without significant interruption. Although inclusionary zoning is not widespread in Florida, inclusionary zoning's reliance on real estate development to generate affordable housing units is compatible with Florida's high pace of residential development. The major difference between Florida and New Jersey, however, is that New Jersey law mandates consideration of fair share housing, whereas Florida law is silent on this issue.¹⁵⁹

D. Massachusetts Anti-Snob Zoning Act.

In 1969, the Massachusetts Legislature enacted the Massachusetts Anti-Snob Zoning Act (Massachusetts Act),¹⁶⁰ formally known as the Massachusetts Low and Moderate Income Housing Act.¹⁶¹ The Massachusetts Act represents an attempt to prevent local governments from arbitrarily limiting the development of affordable housing either through outright permit denials or the attachment of conditions that would make the development of affordable housing uneconomic. Rather than requiring complicated fair share housing plans, the Massachusetts approach relies on fairly simple indicators for determining whether a jurisdiction has met its fair share of housing need.

The Massachusetts Act has two key features. First, the Act creates a comprehensive local permitting process for low or moderate income housing where developers of such housing may file one comprehensive local permit application, which will be heard by the local town's zoning board of appeals.¹⁶² The Massachusetts Act defines low or moderate income housing as "any housing subsidized by the federal or state government under any program to assist the construction of low or moderate income housing . . .

158. See FLA. STAT. § 420.907 (1995); see also discussion *supra* Part III (describing the SHIP program).

159. See *id.*

160. 1969 Mass. Acts 712 (codified at MASS. GEN. LAWS ANN. ch. 40B, §§ 20-23 (West 1994)).

161. MASS. GEN. LAWS ANN. ch. 40B, §§ 20-23 (West 1994).

162. See *id.* § 21.

.”¹⁶³ Second, if the local zoning board of appeals denies the application for low or moderate income housing or the conditions attached to the project’s development make it uneconomical to build, then the developer may appeal directly to a state Housing Appeals Committee.¹⁶⁴ The Housing Appeals Committee possesses the power to override the local zoning board of appeals decision.¹⁶⁵

When reviewing the justifications for the denial of a comprehensive permit application by the local zoning board of appeal, the Housing Appeals Committee must determine whether the permit denial was “consistent with local needs.”¹⁶⁶ The Housing Appeals Committee must also review permit applications that have been approved with conditions to ensure that the conditions are consistent with local needs and do not create “uneconomic” construction or operation conditions.¹⁶⁷

Thus, consistency with local needs is an important consideration. The zoning board of appeals may demonstrate to the Housing Appeals Committee that its decision to deny or establish conditions for an application’s approval for low or moderate income housing is consistent with local needs if any one of the following is true: (1) the number of low and moderate income housing units in the town exceeds 10% of the total dwelling units in the town, as reported in the latest federal decennial census of the town;¹⁶⁸ (2) low and moderate income housing occupies more than 1.5% of a town’s land that is zoned for residential, commercial, or industrial use; or (3) the permit application would result in the development of sites constituting more than 0.3% of the town’s land (exclusive of publicly owned land) or 10 acres, whichever is greater in any one year.¹⁶⁹

163. *See id.* § 20.

164. *See id.* § 22.

165. *See id.* §§ 20-23; *see also* MASS. REGS. CODE tit. 760, §§ 30-31 (West 1994).

166. MASS. GEN. LAWS ANN. ch. 40B, § 23 (West 1994).

167. *See id.*

168. *See id.* The Massachusetts Executive Office of Communities and Development annually produces a Subsidized Housing Inventory that is used to determine whether the 10% threshold has been reached. *See id.*

169. *See* MASS. GEN. LAWS ANN. ch. 40B, § 20; *see also* CYNTHIA LACASSE, AN OVERVIEW OF CHAPTER 774: THE ANTI-SNOB ZONING LAW 2 (Mar. 1987) (unpublished

The Massachusetts Act is similar to the California and New Jersey fair share laws because it allows the state to have a voice in whether a town is meeting its fair share of housing need. In contrast with these states' laws, however, the Massachusetts Act employs a rather simple and perhaps arbitrary measure of a jurisdiction's compliance with fair share of housing needs. In contrast with New Jersey, which employs a very complicated formula for determining a jurisdiction's fair share, the Massachusetts Act asserts that if a town has more than 10% of its housing stock in subsidized housing for low and moderate income households, then the Housing Appeals Committee will not question the town's decision on a comprehensive permit application.¹⁷⁰

By 1990, twenty-one years after passage of the Massachusetts Act, only twenty-two of the state's 351 cities and towns had reached the 10% level.¹⁷¹ These twenty-two cities and towns consisted primarily of large cities (Boston, Springfield, Worcester) and larger, older suburbs and towns (Cambridge, Fall River).¹⁷² Hence, regardless of whether the 10% threshold is an accurate measure of a city or town's "true" fair share, it is a reasonable goal for most of the state's towns, including many of its suburban jurisdictions.

In contrast to California's and New Jersey's fair share laws, the Massachusetts Act relies primarily on developers to stimulate the scrutiny of a town's housing policies. If developers make no attempt to develop affordable housing in a town that has little such housing, then the Massachusetts Act provides no recourse. In this sense, the Act is passive in that it waits for developers to challenge

report, Massachusetts Institute of Technology, Department of Urban Studies and Planning) (on file with author).

170. See MASS. GEN. LAWS ANN. ch. 40B; see also Paul Stockman, *Anti-Snob Zoning in Massachusetts*, 78 VA. L. REV. 535, 551-52 (1992).

171. See MASSACHUSETTS EXECUTIVE OFFICE OF COMMUNITIES AND DEV., 1990 SUBSIDIZED HOUSING INVENTORY (Apr. 1990) (compiling the percentage of subsidized housing for all Massachusetts communities).

172. See *id.*

a town's decision to deny or place burdensome conditions on a permit application.¹⁷³

However, reliance on developer initiative allows developers to determine when and where it is economical to develop affordable housing.¹⁷⁴ This situation contrasts with California and New Jersey, where many communities rely on inclusionary zoning to induce developers to provide affordable housing.¹⁷⁵

Massachusetts does attempt to sweeten the pie for affordable housing development by: (1) making state funds available for low and moderate income housing development; and (2) withholding state development funds from jurisdictions that have shown a pattern of discouraging affordable housing development. Massachusetts also employs the Homeownership Opportunity Program (HOP) to stimulate the development of owner-occupied housing and the State Housing Assistance for Rental Production (SHARP) and Tax-Exempt Loans to Encourage Rental Housing (TELLER) programs to stimulate the development of rental housing.¹⁷⁶ The HOP program, in particular, actively encourages developments that serve a mix of incomes, thereby making the program, along with its homeownership emphasis, more conducive to development in suburban settings.¹⁷⁷ These additional programs serve as important complements to the effectiveness of the Massachusetts Act by encouraging development of affordable housing in jurisdictions that might resist such housing.

In the Massachusetts Act's first twenty years, 1969 to 1989, 33,884 units were proposed under the comprehensive permit

173. See Stockman, *supra* note 170, at 565-66 (citing to one critic's comment that the Massachusetts Act is passive because the law is not self-executing—the initiative remains with the developers).

174. See *id.* at 567 (noting that the builder has the option "to include affordable units; presumably, the builder will act only when existing bonuses and subsidies make it profitable to do so").

175. See *supra* notes 154-57 and accompanying text for a discussion of inclusionary zoning in New Jersey. In an inclusionary housing program, construction of low and moderate income suburban housing must be facilitated and opportunities for circumvention and subversion must be minimized; thus, some scholars argue that the effects of inclusionary zoning are the reverse of its intention. See Stockman, *supra* note 170, at 566.

176. See *id.* at 554-56.

177. See *id.* at 565.

procedure promulgated by the Act, of which 20,623 units were built by 1989.¹⁷⁸ Nearly one-quarter of all cities and towns in Massachusetts have had projects that applied for a comprehensive permit under the Massachusetts Act. However, by 1988, only twenty-eight of Massachusetts's 351 cities and towns had met the Act's statutory criteria (10% or more of dwelling units or 1.5% or more of land area devoted to affordable housing).¹⁷⁹ Affordable housing in Massachusetts has undeniably improved, evidenced by the mere two communities that complied with statutory criteria at the inception of the Act in 1969.¹⁸⁰ Many of the ninety-five communities that do not contain subsidized units are rural communities with small populations.¹⁸¹ Housing advocates in Massachusetts believe that without the Massachusetts Act, few affordable housing units in the suburbs would exist.¹⁸²

The Massachusetts Act appears to have positively-affected developments whose permits had conditions attached to their applications or were denied. Between 1969 and 1986, 42% of developments whose comprehensive permits were denied were eventually built and two-thirds of developments whose permits were given conditions were also built.¹⁸³ Consequently, while the appeals process under the Massachusetts Act does not guarantee that these units will be built, the appeals procedure under the Massachusetts Act increases the probability that affordable units will be constructed.

In recent years, at least two other states, Connecticut in 1989,¹⁸⁴ and Rhode Island in 1991,¹⁸⁵ have adopted legislation similar to the Massachusetts Act. As for Florida, the Massachusetts Act concept should be considered as an adjunct to current growth management and housing legislation. The adoption of the

178. *See id.* at 575.

179. *See id.* at 576.

180. *See id.* at 576-77.

181. Only six of 225 cities and towns with populations higher than 5,000 lack any subsidized units. *See id.* at 577.

182. *See id.*

183. *See* LACASSE, *supra* note 169, at 8.

184. *See* 1989 Conn. Acts § 311 (Reg. Sess.).

185. *See* 1991 R.I. Pub. Laws ch. 154, § 1 (codified at R.I. GEN. LAWS § 45-53 (1991)).

Massachusetts 10% standard would provide an effective device for measuring the degree to which jurisdictions comply with affordable housing objectives laid out in the state's comprehensive plan, individual housing elements and land use plans. Moreover, Florida's increasing funding for affordable housing will serve as an incentive¹⁸⁶ for housing developers who attempt to create affordable housing in jurisdictions with few low income housing opportunities. These funding incentives, when combined with Massachusetts-type zoning laws, would encourage the private sector to develop affordable housing in suburban jurisdictions in Florida.

E. Connecticut Fair Housing Compact Pilot Program

In contrast with the other fair share housing programs discussed in this article, Connecticut's Fair Housing Compact Pilot Program (Connecticut Act), enacted by the Connecticut Legislature in 1988,¹⁸⁷ uses the state's powers to encourage local governments within a region to come together and negotiate a compact that sets forth numeric affordable housing goals for the entire region, as well as for each jurisdiction.¹⁸⁸ Hence, the emphasis is placed on maintaining a home rule tradition, while also trying to get suburban and central city jurisdictions to discuss compliance with regional housing objectives.

The Connecticut Act stipulated that the Pilot Program would be available for two planning regions in the state.¹⁸⁹ Five of the state's regions submitted applications. The Capitol Region Council of Governments, located in Hartford, and the Greater Bridgeport Regional Planning Agency were chosen to participate.¹⁹⁰

The Connecticut Act made a number of important stipulations that helped influence the development of a regional housing compact. First, the Connecticut Act called for a negotiation to occur

186. See discussion *supra* note 48.

187. 1988 Conn. Acts § 334 (Reg. Sess.).

188. See *id.*

189. See *id.*

190. See Lawrence E. Susskind & Susan L. Podziba, *Affordable Housing Mediation: Building Consensus for Regional Agreements in the Hartford and Greater Bridgeport Area 2* (1990).

between “a mediator, the Commissioner of Housing or his designee, and the officers of the regional planning agency or agencies within the chosen regions, or their designees, and a representative of each municipality within such planning regions, appointed by the chief executive officer of such municipality.”¹⁹¹ In practice, elected officials represented their municipality in some instances, while other communities were represented by citizens or town planners. This mix resulted in mutual learning in which citizens and politicians learned about housing from planners and planners and citizens learned about practical political considerations from elected officials.¹⁹² The mix also resulted in the elected officials often having the power to negotiate on behalf of their jurisdictions while other representatives had to bring the compact back to their local jurisdiction’s government.¹⁹³

Second, the Connecticut Act required that the city and town representatives reach a consensus on housing principles.¹⁹⁴ The consensus requirement protects those parties who feel they are in the minority and therefore helps to assure them that the compact bears their influence.¹⁹⁵

Third, the Connecticut Act required that an outside consultant be employed to mediate the negotiation among the various governments.¹⁹⁶ The state, as an incentive to participation, agreed to pay \$50,000 for the services of the mediator.¹⁹⁷

Fourth, the Connecticut Act legitimated negotiation by placing the state’s authority in support of negotiation.¹⁹⁸ Moreover, local officials were concerned that if the Pilot Program did not produce

191. CONN. GEN. STAT. ANN. § 8-386 (West 1996). This negotiation was implemented as part of a Regional Fair Housing pilot program. *See id.*

192. *See* Susskind & Podziba, *supra* note 190, at 13.

193. *See id.* at 10 (commenting that the compact could not become binding until formally ratified by all 29 communities’ local governing bodies; thus, some local governing bodies were forced to seek the vote of a town meeting and other local governing bodies had to gain approval by their city council).

194. *See* CONN. GEN. STAT. ANN. § 8-386 (West 1996).

195. *See id.*

196. *See id.*

197. *See id.*

198. *See* Michael Wheeler, *Regional Consensus on Affordable Housing: Yes in My Backyard?*, 12 J. PLAN. EDUC. & RES. 139, 142 (1993).

an agreement, the state might adopt a more heavy-handed role in fair share housing.¹⁹⁹

Fifth, whereas the Connecticut Act envisioned that the compact would not be adopted unless each municipality in a region approved it,²⁰⁰ the Connecticut Legislature later voted to require only that 65% of local governments sign off on the compact for their region.²⁰¹ In the Hartford region, twenty-five of twenty-nine jurisdictions approved the compact, while in Bridgeport four of six communities approved the compact.²⁰² The requirement for unanimity or near-unanimity qualified more communities for housing aid and helped to assure various jurisdictions that they would not be forced into a compact with which they did not agree.

Sixth, besides the municipal representatives and the mediator, the only other participants named in the Connecticut Act were representatives of the state's Office of Policy and Management, the state's Commission of Housing, officers of the particular regional planning agency, and the chief executive officer of each of the region's municipalities.²⁰³ Based on the legislation, representatives of various interest groups, such as housing advocates and the Chamber of Commerce, were not permitted direct representation but were permitted the opportunity to observe the negotiation sessions and to speak at a public forum.²⁰⁴

Finally, as an added incentive, the Connecticut Act created a housing fund that set aside infrastructure funds for communities signing an adopted compact.²⁰⁵

In the Hartford area, the representatives of the twenty-nine communities in that region met during the first six months of 1989 to develop a regional fair share housing policy.²⁰⁶ Initially,

199. *See id.*

200. *See id.*

201. *See* CONN. GEN. STAT. ANN. § 8-386 (West 1996).

202. *See* Wheeler, *supra* note 198, at 143.

203. *See id.* at 141-42.

204. *See id.* at 144.

205. *See* CONN. GEN. STAT. ANN. § 8-387.

206. *See* Susskind & Podziba, *supra* note 190, at 7 (explaining that negotiation sessions began in January of 1989 and were held every two weeks for six months).

attention was focused on organization and procedure.²⁰⁷ With an emphasis on consensus-building, the representatives developed rules for interacting with the press, agreeing that representatives could speak with the press as long as they did not repeat the opinions of others.²⁰⁸ Early agreement on the press rules and other rules was important because it enabled consensus-building while permitting representatives to agree on a variety of noncontroversial issues.

The most controversial issue was the fair share allocation of responsibility for affordable housing. The Hartford representative helped ease the tension between that city and its suburbs when she stated that if each community took care of its own residents in need of affordable housing that "Hartford's burden would be eased."²⁰⁹

Nevertheless, much discussion took place concerning the rules that would be used to determine fair share allocation. In the end, participants agreed that each municipality, except Hartford, would commit to using its "best effort" to satisfy *one-fourth* of its local shortfall in affordable housing for 1990-1995.²¹⁰ Because Hartford already had much subsidized housing, the city was only expected to meet 12.5% of its affordable housing shortfall.²¹¹

Data published on the Capitol Region Compact shows that 4,055 new housing opportunities were created between July 1, 1989 and March 31, 1994.²¹² Eighty-six percent of these opportunities are located in Hartford's suburbs.²¹³ Nearly three-fourths of the region's opportunities were made available to very low and low income households.²¹⁴

207. *See id.* at 8. The participants formulated an agenda of concerns. The agenda included finding a definition for affordable housing, developing a formula for determining targets, discussing land use and environmental constraints, and discovering ways to fund the new initiatives. The agenda served as a "focal point for future meetings and discussions." *Id.*

208. *See id.* at 7.

209. *Id.*

210. *See id.*

211. *See id.*

212. *See* CAPITOL REGION COUNCIL OF GOVERNMENTS, CAPITOL REGION FAIR HOUSING COMPACT ON AFFORDABLE HOUSING: ANNUAL PROGRESS REPORT 3 (Oct. 1994).

213. *See id.* at 4.

214. *See id.*

These numbers aside, probably the most significant aspect of the Connecticut Act is that it stimulated municipalities in two metropolitan regions to reach voluntary agreements on fair share allocations of affordable housing. The Program demonstrates that central cities and suburbs with seemingly competing interests can come together to negotiate a fair share housing agreement under the proper circumstances.

A program similar to Connecticut's program could be implemented in Florida. In Florida, the regional planning councils are established as institutional vehicles for regional planning. The state's Growth Management Conflict Resolution Consortium at Florida State University has the skills and credibility to play the mediator's role in working out a fair share compact. Moreover, the emphasis on a negotiated allocation voluntarily agreed by jurisdictions throughout a metropolitan area fits Florida's home rule traditions.

F. Oregon Land Conservation and Development Act and the Metropolitan Housing Rule

Although Oregon planning legislation has not adopted the fair share concept per se, a special rule for the metropolitan Portland area utilizes a form of fair share housing in which all jurisdictions must zone residential land at minimum densities designed to facilitate the development of affordable housing throughout that metropolitan area.

Implementation of the minimum zoning concept originated in Oregon's 1973 Land Conservation and Development Act (Oregon Act).²¹⁵ The Oregon Act was an attempt to control both statewide growth while also providing the housing needed for the Oregon population. Goals 10 and 14 speak directly to the issues of housing development and growth management. Goal 10 aims "to provide for the housing needs of citizens in the state." To achieve this purpose, the Oregon Act authorizes the following: "Buildable lands for residential use shall be inventoried and plans shall encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the

215. 1973 Or. Laws 80 (codified at OR. REV. STAT. ch. 197 (1995)).

financial capabilities of Oregon households and allow for flexibility of housing location, type and density.”²¹⁶

Goal 14’s purpose is “to provide for an orderly and efficient transition from rural to urban land use.”²¹⁷ It accomplishes this purpose by establishing urban growth boundaries. Inside the boundary, urban development is permitted, yet outside the boundary, rural lands are preserved.

The potential conflicts between Goals 10 and 14 were exemplified by two interest groups, 1000 Friends of Oregon, an advocate of rural land preservation, and the Home Builders Association of Metropolitan Portland, which wanted to make certain that a suitable supply of land was available for the construction of new housing. The two interest groups found that in Portland, the region was “meeting its general urbanization [density] objectives under Goal 14, but, in the long term, several jurisdictions will likely fail to meet the more demanding housing targets under Goal 10.”²¹⁸

In order to resolve the conflict between Goals 10 and 14, Oregon’s Land Conservation and Development Commission (LCDC), the state’s land planning agency, adopted the Oregon Metropolitan Housing Rule (Oregon Housing Rule) in 1981²¹⁹ that called for several measures designed to meet the objectives of these two goals, as well as those objectives of the two interest groups. The rule requires communities within the Portland metropolitan area to allow development at *minimum* densities of six, eight, or ten units per net buildable acre²²⁰ with the six and eight unit per acre goals established for suburban areas and the ten unit per acre goal established for more urbanized communities such as Portland, Beaverton, and

216. LAND CONSERVATION AND DEV. COMM’N, OREGON’S STATEWIDE PLANNING GOALS 10 (1990) [hereinafter PLANNING GOALS].

217. *Id.* at 12.

218. 1000 FRIENDS OF OREGON & THE HOME BUILDERS ASS’N OF METRO. PORTLAND, EXECUTIVE SUMMARY, MANAGING GROWTH TO PROMOTE AFFORDABLE HOUSING: REVISITING OREGON’S GOAL 10 12 (1991) [hereinafter 1000 FRIENDS OF OREGON].

219. *See* OR. ADMIN. R. 660-07-000 (1991).

220. *See id.* (defined as the land area designated for residences exclusive of land set aside for public rights of way, public open spaces, and areas restricted from development, as well as areas that are not buildable for reasons such as periodic flooding or severe slope).

Lake Oswego.²²¹ In addition, the rule requires jurisdictions, other than small developed cities, to zone land so that one-half of all newly constructed residences are attached single family housing or multi-family housing.²²²

The Oregon Housing Rule assumes that higher density development is critical to the development of affordable housing and that regional minimum density standards are necessary to get local jurisdictions to zone at densities that are amenable to the development of affordable housing. The Oregon Housing Rule is consistent with Anthony Downs's conclusion that low density zoning is a crucial regulatory barrier to the development of affordable housing.²²³

In 1991, 1000 Friends of Oregon and the Home Builders Association of Metropolitan Portland sponsored an evaluation of the Oregon Housing Rule.²²⁴ In general, the study shows that the Oregon Housing Rule has been successful in obtaining higher residential density than would have otherwise been expected. Focusing on the period between 1985 and 1989, the evaluation found that 54% of all new residential housing in a sample area of the Metropolitan Portland region was obtained for single-family and multi-family dwellings.²²⁵ However, the percentage of multi-family permits varied greatly from jurisdiction to jurisdiction, with some jurisdictions reporting as few as 15% multi-family permits and others reporting over 70% multi-family permits.²²⁶ In several jurisdictions, such as unincorporated Clackamas County (lying just southeast of Portland) and Washington County (just west of Portland), the number of multi-family permits was much higher than would have been permitted or expected under the pre-Oregon

221. See OR. ADMIN. R. 660-07-045.

222. See *id.* at 660-07-030 (defining attached housing where each dwelling unit is not located on a separate lot; hence, townhouses are considered to be multifamily).

223. See Anthony Downs, *The Advisory Commission on Regulatory Barriers to Affordable Housing: Its Behavior and Accomplishments*, 2 HOUS. POL'Y DEBATE 1095, 1109 (1991).

224. See 1000 FRIENDS OF OREGON, *supra* note 218.

225. See *id.* at 10; see also HOUSING OPPORTUNITIES, *supra* note 87, at 83 (noting further that prior to the Housing Rule, affordable housing "represented only 30% of the region's planned 20-year housing supply").

226. See 1000 FRIENDS OF OREGON, *supra* note 218, at 27.

Housing Rule zoning designations.²²⁷ Consequently, not only did the Portland metropolitan area meet its goal for multi-family housing, but without the Oregon Housing Rule, much less multi-family housing would have been constructed in the metropolitan area.

In general, the evaluation also found that jurisdictions were successful in meeting their six-eight-ten density objectives, with greatest success occurring at the two higher densities. A density shortfall occurred at the six unit per net acre density level with the six unit per net acre jurisdiction included in the study having an average net density of above three units per net acre.²²⁸

Nevertheless, the Portland metropolitan area's performance in permitting single family homes at higher densities improved over what was the case prior to the period of the Oregon Housing Rule. Whereas two-thirds of single family dwellings under pre-Housing Rule Plans were built on lots averaging 13,000 square feet, the average single family lot during the 1985-1989 evaluation period was smaller than 9,000 square feet.²²⁹ Overall, therefore, while actual performance could have been better than it was, the evaluation concluded that the Oregon Housing Rule had a significant impact on increasing the incidence of higher density housing and multi-family housing in the Portland metropolitan area.

Given that both Oregon and Florida have adopted statewide mandated planning laws, with requirements for housing elements, Florida could easily adopt a proposal similar to the Oregon Housing Rule. Florida's Growth Management Act requires that housing elements in Florida jurisdictions develop "standards, plans, and principles to be followed in . . . the provision of adequate sites for future housing, including housing for low-income, very-low-income, and moderate-income families."²³⁰ This language suggests that the Florida DCA already has the authority to develop a

227. See *id.* at 26.

228. See *id.* at 9.

229. See *id.*; see also HOUSING OPPORTUNITIES, *supra* note 87, at 83 (commenting that "the average (minimum) lot size allowed by local zoning dropped from 13,000 square feet in 1978 (pre-Housing Rule) to 8,300 square feet in 1982 (post implementation)").

230. FLA. STAT. § 163.3177(6)(f)(1)(d) (1995).

minimum density rule. The Oregon Housing Rule, based on Oregon Goal 10, is written with similar language.²³¹ This similar language provides a basis for DCA to follow Oregon's Land Conservation and Development Commission and to promulgate a minimum density rule.

V. RECOMMENDATIONS FOR FLORIDA

There is a need for a fair share housing program in Florida. The state's metropolitan areas are racially and economically segregated, resulting in fewer opportunities for many lower income, primarily African American residents to have access to good schools and good jobs. At the same time, despite the advances in growth management and housing legislation, Florida has done little to actually use housing legislation to promote economic opportunity through the geographic mobility that is enabled by fair share housing. Without state legislation initiating affordable housing change, significant movement to fair share housing at the local level is unlikely. As other jurisdictions demonstrate, fair share housing is most likely to be adopted where higher levels of government, either federal or state, direct or entice local jurisdictions to plan for their fair share of regional housing need.²³² The State of Florida should look to the development of the fair share housing concept to complement its current growth management legislation. In examining fair share alternatives, at least five feasible alternatives exist. The advantages and disadvantages inherent in these alternatives must be analyzed, exposing the best possible approach for initiating fair share housing in Florida.

A. Alternative One: Adopt the California/New Jersey Fair Share Approach in which Emphasis is Placed on State-Directed Determination of Each Jurisdiction's Fair Share Housing Need

The chief advantage of Alternative One is that it builds upon the growth management legislation that Florida already has in place. However, adoption of this alternative would probably

231. See PLANNING GOALS, *supra* note 216, at 10.

232. See discussion *supra* Part IV (describing affordable housing efforts in other states).

require an amendment to the housing element section of the Florida Growth Management Act²³³ to provide a jurisdiction's fair share of regional housing need. Such an amendment would also entail development of a formula or procedure for calculating fair share. Although it is unclear how difficult the passage of such an amendment would be, the concept of fair share would undoubtedly spark concern among suburban jurisdictions that are fearful of having to absorb residents of the central city. Moreover, since the California/New Jersey approach to fair share housing relies quite extensively on inclusionary zoning,²³⁴ the development community would probably react negatively to this approach.

B. Alternative Two: Adopt the Massachusetts Fair Share Approach in which an Arbitrary Fair Share Goal is Established for Each Jurisdiction and the State Retains Preemptive Powers Over Local Jurisdictions for the Purpose of Granting Development Permits for Affordable Housing

Because the Massachusetts Act only takes effect after a developer proposes an affordable development, this approach permits developers to build affordable housing where they think is best. By combining various housing subsidy programs, the Massachusetts Act uses a "carrot" approach to attract developers to plan for affordable housing.²³⁵

A second advantage lies in the rather simple approach taken in Massachusetts for determining fair share need. Rather than spending time and energy developing an empirically based, but complex, measure of fair share need, Massachusetts elects to allocate the same fair share goal to all jurisdictions, requiring each jurisdiction to have at least 10% of all dwellings in subsidized housing. Not only is time and effort saved with such a measure, but it becomes more difficult for jurisdictions to manipulate statistical figures to

233. FLA. STAT. § 163.3177 (1995).

234. For a discussion of California's approach to fair share housing, see discussion *supra* Part IV.B. For a discussion of New Jersey's approach to fair share housing, see discussion *supra* Part IV.C.

235. See discussion *supra* Part IV.D. In contrast, the California/New Jersey approach relies more on a "stick" approach through those states' utilization of inclusionary zoning as the primary tool by which jurisdictions meet their fair share requirements. See discussion *supra* Parts IV.B-C.

make it appear that they have less need or have met their housing need.

The passive nature of the Massachusetts Act is its primary drawback. The Massachusetts Act relies on the developer to provide affordable housing. Where such efforts do not exist or are significantly less than housing need requires, the approach lacks the ability to more actively address housing issues. In response to this problem, the application of significant housing subsidies as “carrots” would not only encourage developers to build affordable housing but provide opportunities for such housing in suburban communities.

C. Alternative Three. Adopt the Connecticut Fair Share Approach in which Jurisdictions are Encouraged to Negotiate Fair Share Housing Allocations Among Themselves

This approach has several advantages. First, the Connecticut approach is voluntary, so jurisdictions cannot complain that the program is forced upon them. The voluntary approach applies not only to program participation but also to acceptance of any fair share allocation that comes from a regional decision-making process. Additionally, the Connecticut approach’s negotiation process²³⁶ has the potential to produce a multi-jurisdictional consensus that supports the overall responsibility for affordable housing development.

Despite these advantages, the Connecticut approach’s emphasis on voluntary negotiations fails to provide the type of comprehensive statewide coverage found in California or New Jersey.²³⁷

D. Alternative Four: Adopt the Oregon Fair Share Approach in which the State Sets Minimum Density Standards that Minimizes Large-Lot Zoning so that Housing Can Be Made More Affordable

The chief advantage of Oregon’s approach to fair share housing is that it addresses a key determinant of housing affordability:

236. See discussion *supra* Part IV.E.

237. See discussion *supra* Part IV.B-C.

density.²³⁸ The minimum density standards developed for the Portland metropolitan area are simple and straightforward. The Florida Growth Management Act requirement that housing elements develop “standards, plans, and principles to be followed in . . . the provision of adequate sites for future housing, including housing for low-income, very-low-income, and moderate-income families”²³⁹ appears to provide the statutory foundation for a DCA rule requiring minimum densities.

The chief disadvantage of this alternative is that increasing density, by itself, does not guarantee the development of affordable housing. With the SHIP program in Florida,²⁴⁰ however, there is the opportunity to combine minimum density requirements with financial subsidies for affordable housing.

E. Alternative Five: Combining Alternatives

Given the disadvantages associated with each of the first four alternatives, an alternative or set of alternatives that reflects a combination of approaches is preferable. At a minimum, consideration should be given to the following recommendations, gleaned from the first four alternatives.

1. Recommendation One

Based on the Florida Growth Management Act requirement that jurisdictions develop criteria for the provision of adequate sites for various income levels,²⁴¹ the Florida DCA should develop minimum density standards for planning regions throughout the state. Such action would set standards that would better guarantee that adequate sites would be available for all income levels in the population. Although the standards would not guarantee that affordable housing would be developed in these jurisdictions, a minimum density floor could be established that would enable the development of affordable housing in a variety of jurisdictions.

238. See discussion *supra* Part IV.F.

239. FLA. STAT. § 163.3177(6)(f) (1995).

240. See discussion *supra* Part III (discussing Florida’s SHIP program).

241. See FLA. STAT. § 163.3177(6)(f) (1995).

2. *Recommendation Two*

The State of Florida, through the Florida Growth Management Conflict Resolution Consortium, should adopt the Connecticut model which offers regions the opportunity to negotiate fair share housing compacts.²⁴² The Connecticut model should be implemented as a pilot program, and based on the results of the pilot program, the concept could eventually be expanded to all regions in the state. This alternative seems desirable because it introduces the fair share concept to Florida, but does so in a way that attempts to produce consensus rather than conflict.

3. *Recommendation Three*

The State of Florida should use its housing subsidy programs, chiefly the SHIP and SAIL programs, to encourage developers to build housing in suburban jurisdictions. In conjunction with these incentives, Florida should provide for a comprehensive permit process that allows state preemption of local permitting, as is found in the Massachusetts model.²⁴³ Given the availability of housing subsidies in Florida, the state can use incentives to encourage developers to produce affordable housing in suburban jurisdictions. At the same time, the state should be prepared to overrule local jurisdictions that stand in the way of affordable housing development.

4. *Recommendation Four*

Under the DRI review process, regional planning councils and the State of Florida have the right to ensure that the review of large-scale developments falling under the umbrella of the DRI process by considering whether “the development will favorably or adversely affect the ability of people to find adequate housing reasonably accessible to their places of employment.”²⁴⁴ Given that large-scale new developments are often located in suburban jurisdictions and that such developments, including shopping

242. See discussion *supra* Part IV.E.

243. See discussion *supra* Part IV.D.

244. FLA. STAT. § 380.06(12)(a)(3).

centers, often generate low-paying employment, the DRI statute can be used to argue that such developments create housing needs in suburban jurisdictions which require mitigation through the development of affordable housing. Although the DRI statute is not a fair share housing statute *per se*, its linkage of employment and housing opportunities can and should be used to achieve fair share housing-type results.

5. *Recommendation Five*

If the above recommendations inadequately stimulate the adoption of fair share housing plans and practices, the State of Florida should amend the Growth Management Act to require measurement of housing need that considers the jurisdiction's fair share of regional housing need. To be effective, the State would probably have to develop specific estimates of each jurisdiction's fair share, just as is done in California and New Jersey.

VI. CONCLUSION

Florida is an important test case for fair share housing. The state has the need for a more equitable distribution of poor people and minorities. Its growth management legislation, which features state-mandated planning, provides the legal framework for developing the type of state-led effort that is necessary for an effective fair share housing policy. If the state does not develop a fair share housing policy, it will not be because of a lack of need or opportunity.

VII. APPENDIX: TABLES

ANALYZING EVIDENCE OF ENVIRONMENTAL JUSTICE: A SUGGESTION FOR PROFESSOR BEEN*

COLIN CRAWFORD**

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I. INTRODUCTION

One effect of the environmental justice movement has been to draw attention to the prejudices inherent in some modern environmental policies. These prejudices are most apparent when analyzing the location of hazardous waste facilities throughout the country. Several recent environmental justice studies have debated whether the location of these facilities has a direct correlation to the percentage of minorities in the surrounding areas.

This article critiques some of the methodology of these recent studies, most notably that of Professor Vicki Been, to determine the rationale governing the placement of hazardous waste facilities. Furthermore, this article suggests that researchers should expand their evidentiary fields to include statistics regarding an area's standard of living to obtain a more accurate analysis of the correlation between the location of hazardous waste facilities and an area's minority population. Finally, this article concludes with a case study, applying this expanded method of analysis to demonstrate the inherent prejudices in choosing Noxubee County, Mississippi as a site for a hazardous waste facility.

II. A CRITIQUE OF RECENT ENVIRONMENTAL JUSTICE STUDIES

* The author reserves all copyrights for materials within this article relating to his work, *Uproar at Dancing Rabbit Creek*.

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In 1987, the United Church of Christ Commission for Racial Justice published its controversial study, *Toxic Wastes and Race in the United States* (UCC Study).¹ The UCC Study concluded that a significant correlation exists between the number of hazardous waste facilities within an area and that area's minority population.² Importantly, the UCC Study insisted that this correlation is even stronger than the correlation between an area's zip code and inhabitant's income.³

Many scholars and commentators quickly criticized some of the UCC Study's conclusions. Above all, the criticisms focused on the UCC Study's use of zip codes as the appropriate unit of demographic analysis.⁴ Although some commentators argued that the zip code approach was under-inclusive,⁵ most commentators argued that the approach was problematic for other reasons.⁶ Suggested alternatives included census tracts⁷ or concentric rings drawn around environmentally-dangerous or threatening sites.⁸

1. UNITED CHURCH OF CHRIST COMMISSION FOR RACIAL JUSTICE, *TOXIC WASTES AND RACE IN THE UNITED STATES* (1987) [hereinafter UCC Study]. Upon publication, the UCC Study brought much attention to the then-nascent environmental justice movement. See KENNETH A. MANASTER, *ENVIRONMENTAL PROTECTION AND JUSTICE* (1995); see also Vicki Been, *Analyzing Evidence of Environmental Justice*, 11 J. LAND USE & ENVTL. L. 1, 2 (1995) (citing legislation that paid homage to the UCC Study. "The study gave the environmental justice movement substantial credibility and is cited as the justification for many of the environmental justice proposals considered in recent years by Congress and state legislatures."); Colin Crawford, *Strategies for Environmental Justice: Rethinking CERCLA Medical Monitoring Lawsuits*, 74 B.U. L. REV. 267 (1994); Richard Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 101 (1993).

2. UCC Study, *supra* note 1, at 23.

3. See *id.* at 15-16. While the one study found that household incomes and "home values were substantially lower" in communities containing hazardous waste sites, the "minority percentage of the population remained the most significant factor . . ." *Id.*

4. See *infra* notes 5-11 and accompanying text.

5. See Vicki Been, *What's Fairness Got to Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001, 1009 n.39 (1993) (citing an unpublished study by Rae Zimmerman that argues that the focus should be on the entire municipality); see also Rae Zimmerman, *Issues of Classification in Environmental Equity: How We Manage is How We Measure*, 21 FORDHAM URB. L.J. 633, 645 (1994).

6. See *infra* notes 9-19 and accompanying text.

7. See *East Bibb Twiggs Neighborhood Ass'n v. Macon-Bibb County Planning and Zoning Comm'n*, 706 F. Supp. 880 (M.D. Ga. 1989), *aff'd*, 896 F.2d 1264 (11th Cir. 1989); see also *Bean v. Southwestern Management Corp.*, 482 F. Supp. 673, 677-78 (S.D. Tex.

Perhaps the most prominent critic of these proposals was New York University Law School Professor Vicki Been. In a 1993 article, Professor Been suggested that zip code analysis is flawed due to the varying size of the zip code areas used for comparison.⁹ Subsequently, the University of Massachusetts Social and Demographic Research Institute (SADRI) released a study that supported Professor Been's suggestions.¹⁰ The SADRI study covered the same ground as the seven-year-old UCC Study, finding *on the basis of census data* that no definitive correlation exists between racial and ethnic minorities and the location of hazardous waste sites.¹¹

In the meantime, Professor Been and a colleague¹² were working on a study that analyzed communities that contain hazardous waste facilities or contaminated sites. Like SADRI, their study used census tracts. In her most recent, comprehensive

1979), *aff'd*, 782 F.2d 1038 (5th Cir. 1986). Census tracts are comparatively more stable and arguably better reflect local perceptions of community boundaries than do zip code areas. See Been, *supra* note 1, at 4-5.

8. Prominent social scientists prefer this technique. See Bunyan Bryant & Paul Mohai, *Environmental Racism: Reviewing the Evidence*, in RACE AND THE INCIDENCE OF ENVIRONMENTAL HAZARDS 170-72 (Bryant & Mohai eds., 1992); see also Michael Greenberg, *Proving Environmental Inequity in Siting Locally Unwanted Land Uses*, in 4 RISK: Issues in Health & Safety 235, 238 (1993).

9. See Been, *supra* note 5, at 1015 n.75 ("Zip code areas, for example, may vary significantly in the land area included, and those variations limit the usefulness of comparisons between zip code areas."); Been, *supra* note 1, at 5 ("Zip codes . . . are constructed only for the convenience of the postal service, and do not necessarily coincide with neighborhoods."). Professor Been's articles are more concerned with criticizing other flaws in the methodology used to analyze environmental justice problems. She focuses specifically on her belief in "market dynamics," a situation that tort scholars call "coming to the nuisance." See *id.* at 21; Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1390 (1994).

10. See Douglas L. Anderton et. al., *Environmental Equity: Evaluating TSPD Siting Over the Past Two Decades*, WASTE AGE, July 1994, at 83.

11. See *id.* One recurrent criticism of this study, however, is that it was funded in part by waste management studies. See, e.g., BENJAMIN A. GOLDMAN & LAURA FITTON, TOXIC WASTES AND RACE REVISITED 14-15 (1994). The Goldman and Fitton report updated the UCC Study, correcting some of the study's methodological errors and responding to various methodological criticisms. See *id.*

12. Frances Gupta, a doctoral candidate in New York University's department of economics.

elaboration of this approach, Professor Been thoroughly defended this choice:

[C]ensus tracts are a more appropriate unit of analysis than zip codes. Census tracts are drawn up by local committees, and accordingly are more likely to reflect the community's view of where one neighborhood ends and another begins. Zip codes, on the other hand, are constructed only for the convenience of the postal service, and do not necessarily coincide with neighborhoods. Tracts also are comparable in population, while zip codes may contain widely varying numbers of people and cover areas of widely varying sizes. Tracts reflect the area right around the facility—the area that usually will bear its worst impacts. Zip codes may extend for miles beyond the facility, into areas where many people may not even be aware of the facility's presence.¹³

In contrast with the UCC Study, Professor Been's census-based study found "no statistically significant difference between the mean percentage of African Americans in host and non-host tracts."¹⁴ However, Professor Been did discover "a statistically significant difference between host and non-host tracts in the mean percentage of all minorities (all races other than white, with all Hispanics, whether white or of another race)."¹⁵ Moreover, her study found a strong correlation between income and residence near host sites.¹⁶ In sum, Professor Been's research led her to conclude that "environmental justice is not a simplistic PIBBY—'put it in Black's backyards.'" It suggests, instead, a much more ambiguous and complicated entanglement of "class, race, educational attainment, occupational patterns, relationships between the metropolitan areas and rural or non-metropolitan cities, and possibly market dynamics."¹⁷ To support this conclusion, Professor Been's study examined a variety of statistical measures used in census review, including racial balance, median family income and housing value, educational attainment, both

13. Been, *supra* note 1, at 5 (citations omitted).

14. *Id.*

15. *Id.*

16. *See id.* at 6, 19-20.

17. *Id.* at 21 (disagreeing with ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY 5 (1990)).

manufacturing and professional employment, and mean population density.¹⁸

The effect of Professor Been's highly standardized conclusions, however, could lead to policy and legal judgments that ignore a more complex reality than uniform statistical measures will allow. Researchers like Professor Been should avoid making overly-broad conclusions that marginalize the particular needs of the communities facing the greatest risk of suffering environmental harms. Specifically, academic researchers trying to understand the causes and effects of environmental justice dilemmas should look at a wider array of available information.¹⁹ Researchers should begin by examining data produced by state agencies. The remainder of this article will examine one environmental justice controversy in which such data would have helped academic researchers better understand the "ambiguous and complex" interrelation of factors identified by Professor Been.

III. A CASE STUDY: NOXUBEE COUNTY, MISSISSIPPI

This case study explores the role that statistics such as the employment rate, illiteracy rate, welfare rate, and poverty rate play when hazardous waste companies are selecting sites for their facilities. Perhaps researchers like Professor Been will be persuaded to examine these broader evidentiary fields when conducting future environmental justice studies on this topic.

Noxubee County, Mississippi sits approximately thirty miles across the Mississippi-Alabama line from the nation's largest hazardous waste landfill in Emelle, Alabama. In the late 1980s, hazardous waste companies identified Noxubee as a possible site for yet another hazardous waste landfill.²⁰ Since that time, a

18. *See id.*; *see also* Appendix, Tables 1-7 and notes 45-65.

19. If those academic researchers are lawyers untrained in social science methods, then this article suggests that these academic researchers seek the assistance of properly-trained professionals much in the same manner as Professor Been did in obtaining the help of an economic doctoral student. *See supra* note 12.

20. *See, e.g.,* Keith Schneider, *Plan for Toxic Dump Pits Blacks Against Blacks*, N.Y. TIMES, Dec. 13, 1993, at A7; *see also* Adam Nossiter, *Toxic Waste Firms Dangle Sweet Deals, Officials Promise Jobs, Plenty of Perks to Poor Miss. County*, ATLANTA J. & CONST., May 31, 1991, at A3.

significant number of the nation's major hazardous waste management companies²¹ have raced for the chance to locate a hazardous waste landfill in Noxubee County, which is nearly 70% African American.²² Waste company executives and their public relations representatives insist that they have not chosen Noxubee County because of its poor, minority population which has less political clout. These companies insist that they have chosen Noxubee because its geology—specifically the allegedly impermeable Selma chalk formation underlying most of the county²³—is ideal for locating a hazardous waste landfill.²⁴

However, an examination of relevant state data suggests that other reasons may exist for choosing Noxubee County.²⁵ Health and mortality data,²⁶ literacy information,²⁷ public assistance data,²⁸ and detailed information regarding education²⁹ in Noxubee County reveal an economically devastated, politically vulnerable community—in essence, easy prey for powerful hazardous waste companies. To test this hypothesis, I compared Noxubee County to seven surrounding counties with similar geography and demographics: Clay, Kemper, Lowndes, Monroe, Neshoba, Oktibbeha and Winston.³⁰ All but Neshoba and Winston counties contain

21. These companies include: Chemical Waste Management, Hughes Environmental Systems, Inc., Federated Technologies, Inc., Laidlaw, and USPCI. See COLIN CRAWFORD, *UPROAR AT DANCING RABBIT CREEK: BATTLING OVER RACE, CLASS AND THE ENVIRONMENT* (1996).

22. Similarly, Sumter County, Alabama, where the Emelle landfill is located, has a high percentage of minorities. See *id.*

23. See Letter from Edward H. Netherland, Chairman & Chief Executive Officer of Hughes Environmental Systems--Federal Technologies Mississippi, Inc., to Alice Tepper Marlin, Executive Director, Council of Economic Priorities 2 (Jan. 13, 1993) (on file with author) (indicating that the siting of the facility was based on the "location in Selma chalk--possibly the country's most impermeable and deep formations.").

24. See CRAWFORD, *supra* note 21, at 365.

25. See Appendix, Tables 1-7 and notes 48-77.

26. See Appendix, Table 5 and notes 69-73.

27. See Appendix, Table 7 and notes 74-77.

28. This data includes the federal Aid to Families with Dependent Children (AFDC). See Appendix, Tables 1-2 and notes 48-59.

29. See Appendix, Table 7 and notes 74-77.

30. See Appendix, Tables 1-7 and notes 48-77. A comprehensive study of this area should examine not only Mississippi counties but also statistics for Alabama counties that border Mississippi. Conceivably, this could present problems for a researcher because

significant deposits of Selma chalk while both Neshoba and Winston are demographically similar to the western portion of Noxubee County.³¹ An analysis of these statistics outlining the standard of living in Noxubee County demonstrates that this largely African American county uniformly scores the lowest in nearly every category including welfare, infant mortality, unemployment, literacy, and per capita income.³²

For instance, in the 1990 census, Noxubee's per capita income was the lowest at \$6,654 while Kemper County had the second lowest per capita income at \$8,033. Furthermore, Noxubee County consistently has scored far higher percentages of food stamp dependence than the other counties since 1983.³³ The percentages of people on food stamps were nearly 100% higher in Noxubee County than in all but Clay and Winston counties, both of which registered figures about two-thirds of Noxubee's.³⁴ In a state that had the highest percentage of food stamp dependence and emergency food assistance of any state in the nation in the mid-1980s, Noxubee County was always at least twelve percentage points higher than any county in its region from 1983-1994.³⁵

The comparative analysis of the counties' dependence on the federal welfare program, AFDC, is similarly dismal.³⁶ Not only does 10% to 15% (usually closer to 15%) of Noxubee's population receive AFDC payments, but Noxubee also posts rates that are routinely two to three times higher than five of the seven surrounding counties.³⁷

neighboring states are unlikely to tabulate data in the same way, much less examine the same social phenomena. These problems, however, are simply matters with which the social scientist must contend.

31. Local citizens classify residents of Neshoba, Winston, and the western portion of Noxubee as "like-minded" individuals.

32. See Appendix, Tables 1-7 and notes 48-77.

33. See Appendix, Table 1 and notes 48-51.

34. See *id.*

35. See *id.*

36. Compare Appendix, Table 1 with Appendix, Table 2.

37. See Appendix, Table 2 and notes 52-59. The other two counties, Clay and Winston, did not distribute monies to 10% of their respective populations during those years; 9.6% was the highest figure registered (9.6% in Clay during 1991 and 1992). See *id.*

Another factor lending to Noxubee's disadvantaged status is the fact that from 1980-1994, Noxubee County registered the highest percentage of live births to unmarried African American women (at least 50% and closer to two-thirds in each of those years).³⁸ For example, in 1990, 62.4% of the African American babies born in Noxubee County were to unmarried women, a figure that escalated during the years that hazardous waste companies were competing for permits in Noxubee: 71.5% in 1991, 76.3% in 1992, 74.4% in 1993, and 73.4% in 1994.³⁹ In only one of these fourteen years was the rate of births to unmarried African Americans lower in Noxubee County than any other county in its region.⁴⁰

Furthermore, Noxubee's status as a highly disadvantaged, impoverished community with a high percentage of minorities is evidenced by the rate of infant mortality.⁴¹ In all but three out of fourteen years, Noxubee entered African American infant mortality figures as high as 35%, well above the state average.⁴²

Noxubee County also had the highest annual average unemployment rate in its region for several years from 1970 to 1993, and if Noxubee didn't have the highest rank, it always ranked among the top three counties in its region.⁴³ From 1975 to 1993, the unemployment rate was in double digits for all but three years.⁴⁴ In 1975, 1982, 1983, and 1985, the annual unemployment rate was over 15%.⁴⁵

One reason for Noxubee County's comparatively high unemployment figures is unquestionably the county's appallingly high

38. See Appendix, Table 3 and notes 60-63.

39. See *id.*

40. See *id.* In 1990, Noxubee County had a 62.4% live birth rate to unmarried African American women. This percentage was lower than that of the other eight counties in 1990. In contrast, Noxubee County registered the lowest percentage of live births to unmarried white women in its region for nine of the fourteen years. See *id.* Other counties in the region showed an increase in live births to unmarried white women. See *id.*

41. See Appendix, Table 5 and notes 69-73.

42. See *id.* The statistics usually hovered at about 20%. See *id.*

43. See Appendix, Table 6.

44. See *id.* The years in which the unemployment rate did not rise into double digits were 1976, 1977, and 1979.

45. See *id.*

rate of functional illiteracy: just 51.34% of its adults have a high school diploma.⁴⁶ In all three basic categories for measuring literacy--the ability to read and understand basic prose, the ability to work with simple documents, and basic quantitative ability—Noxubee County ranked the lowest among all other counties in its region.⁴⁷

After analyzing this data from Mississippi's state agencies, the conclusion that Noxubee is severely disadvantaged economically, politically, and socially is clear. The logical inference derived from this case study is that hazardous waste companies have found a community that is easily exploitable and that lacks the ability to fight against the placement of an undesirable hazardous waste facility.

IV. CONCLUSION

Hazardous waste companies peddling an undesirable business activity would have difficulty finding a more desperate place than Noxubee County. The poor standard of living in Noxubee, along with its geological characteristics, makes it very attractive to companies wishing to build a hazardous waste facility.

Denying that Noxubee's poverty and political frailty plays no role in selecting a location for hazardous waste facilities betrays the essence of the environmental justice movement: to protect vulnerable populations from exposure to environmental hazards. The conclusion is inescapable: studies like Professor Been's longitudinal statistical analysis are important, promising starts. However, thoughtful environmental law and policy decisions will not be made unless the decisions also include more detailed analyses of communities currently burdened by—or, like Noxubee County, facing the threat of—future undesirable, environmentally threatening activities.

46. See Appendix, Table 7 and notes 74-77.

47. ARTHUR G. COSBY ET AL., *THE MISSISSIPPI LITERACY ASSESSMENT: A REPORT TO THE MISSISSIPPI EMPLOYMENT SECURITY COMMISSION AND THE GOVERNOR'S OFFICE FOR LITERACY* (1991).

V. APPENDIX: TABLES⁴⁸Table 1: Food Stamp Recipients⁴⁹

YR	NOX	KEM	LOW	NES	OKT	CLAY	MON	WIN	MS
83	35	15-24	15-24	15-24	15-24	25-35	15-24	25-35	20
84	15+	5-10	less 5.01	5-10	5-10	5-10	5-10	10-15	20.0
85	35+	15-25	less 15	15-25	15-25	15-25	15-25	25-35	19.4
86	35+	15-25	less 15	15-25	15-25	15-25	15-25	25-35	18.7
87 ⁵⁰	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	19.1
88	38.1	21.3	14.3	16.0	16.7	20.3	13.6	25.4	18.7
89	38.7	2.4	14.7	17.1	16.3	19.8	12.5	24.8	18.8
90 ⁵¹	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	[20]
91	38.3	20.8	15.8	18.4	16.3	24.8	14.7	26.6	20.7
92	38.8	20.6	16.7	18.6	16.6	24.8	14.2	26.6	20.8
93	37.7	19.8	16.5	19.1	16.0	24.9	13.6	25.1	20.0
94	36.6	20.1	15.8	17.5	14.7	23.9	12.0	23.1	18.7
95	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

48. The explanatory key to the counties' abbreviations as used in this Appendix is as follows:

Clay = CLA
 Kemper = KEM
 Lowndes = LOW
 Monroe = MON
 Neshoba = NES
 Noxubee = NOX
 Oktibbeha = OKT
 Winston = WIN
 Mississippi = MS

49. This data is compiled in the Mississippi Department of Public Welfare Annual Fiscal Year Reports for the years 1983-1989 and in the Mississippi Department of Human Services Annual Fiscal Year Reports for the years 1990-1995.

50. The Department had no copies of data for this year. However, the state's percentage suggests that percentages remained relatively constant. Also, a new Commissioner began in 1986, which typically seems to mean that data collection lags the next year.

51. A new Commissioner, Bea Branch, began implementing the Mississippi Executive Reorganization Act.

Table 2: Aid To Families With Dependent Children (AFDC)⁵²

YR	NOX	KEM	LOW	NES	OKT	CLAY	MON	WIN	MS	US
83	10-15	5-10	5-10	<5.0	5-10	5-10	<5.0	5-10	n/a	
84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
85	15+	5-10	5-10	<5.0	5-10	5-10	<5.0	5-10	n/a	
86	15+	5-10	<5.0	<5.0	5-10	5-10	<5.0	5-10	n/a	
87 ⁵³	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
88	14.7	5.7	5.9	4.2	6.7	7.9	4.8	8.6	6.8 ⁵⁴	4.4
89	14.5	5.6	6.0	4.2	6.6	8.2	4.0	8.1	7.0 ⁵⁵	4.4
90 ⁵⁶	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
91	13.6	5.8	6.2	4.5	5.9	9.6	4.6	8.2	7.0 ⁵⁷	5.0
92	13.7	5.5	6.1	4.3	5.4	9.6	4.5	8.0	6.8 ⁵⁸	5.0
93	12.8	4.7	6.0	4.3	5.1	9.1	4.0	7.9	6.5	
94	11.6	4.8	5.6	4.1	4.4	8.6	3.5	6.9	6.4 ⁵⁹	5.4

52. The data set forth in Table 2 is listed by percentage of county population from the following sources: Mississippi Department of Public Welfare Annual Fiscal Year Report for the years 1983-1989 and the Mississippi Department of Human Services Fiscal Year Report for the years 1990-1994. A fiscal year runs from July 1st to the following June 30th. Thus, fiscal year 1992 would run from July 1, 1991 to June 30, 1992.

53. No county-by-county breakdowns were prepared for this year.

54. Third highest in the nation, behind D.C. (7.9%) and Michigan (7.0%).

55. Highest state in the nation (D.C. was .7%).

56. The figures are in dollar amounts. The figures for Clay and Neshoba have increased, significantly in the case of Clay (about 15%). Kemper, Monroe and Noxubee have decreased. Lowndes and Oktibbeha remain stable.

57. Fourth highest in the nation, behind Michigan (7.4%), California (7.3%), and D.C. (8.8%).

58. Fourth highest in the nation, behind D.C. (9.1%), Michigan (7.4%), and California (7.1%).

59. Fourth highest in nation, behind California (8.1%), Michigan (7.3%), and D.C. (12.0%).

Table 3: Live Births to Unmarried African American Women⁶⁰

YR	CLAY	KEM	LOW	MON	NES	NOX ⁶¹	OKT	WIN	MS
80	36.9	34.6	53.3 (2)	44.3	45.0	49.6 (3)	54.8 (1)	48.4	51.6
81	44.4	41.7	52.0 (3)	45.1	42.1	59.5 (1)	48.8	53.0 (2)	53.2
82	42.8	48.8	57.4 (2)	51.0	49.4	56.9 (3)	58.9 (1)	53.7	55.4
83	49.6	40.0	53.5 (3)	47.8	48.7	58.1 (2)	59.6 (1)	53.0	56.8
84	47.1	50.5	59.0 (3)	56.4	45.2	63.5 (1)	56.6	59.5 (2)	59.1
85	57.7	51.0	55.8	55.1	56.0	65.5 (1)	58.2 (3)	58.5 (2)	60.1
86	56.6	55.0	58.7	64.1 (3)	53.6	64.9 (2)	57.0	65.5 (1)	61.6
87	61.2	56.3	61.5	61.8 (3)	56.7	67.2 (1)	59.3	64.9 (2)	62.8
88	63.5	62.8	62.7	72.6 (1)	65.4	69.1 (2)	61.0	65.6 (3)	65.5
89	67.0 (3)	65.7	63.7	66.5	63.7	71.6 (1)	63.0	71.3 (2)	67.9
90	65.2 (5)	66.7 (3)	65.8 (4)	68.0 (2)	64.0 (6)	62.4 (8)	63.2 (7)	72.1 (1)	68.9
91	71.5 (2)	61.8	62.8	74.5 (1)	65.5	71.5 (2) ⁶²	62.8	70.7 (3)	70.5
92	67.2	65.9	68.5	70.2 (3)	66.4	76.3 (1)	65.5	70.6 (2)	71.6
93	73.4	75.8 (1)	69.8	70.2	63.9	74.4 (3) ⁶³	57.7	74.5 (2)	72.8
94	73.0	68.0	68.0	79.1 (1)	63.4	73.4 (3)	67.9	78.0 (2)	73.9

60. The following data is compiled in: MISSISSIPPI STATE DEPARTMENT OF HEALTH, VITAL STATISTICS MISSISSIPPI. The State Department of Health actually uses the category "non-white" rather than African American. The figures in parentheses display that county's rank from the lowest to highest percentages.

61. The number in parenthesis is the county's rank among other counties in its region.

62. Tied in second place with Kemper County.

63. This is only one-third of a percentage point lower than second place, Winston County.

Table 4: Live Births to Unmarried White Womer⁶⁴

YR	CLAY	KEM	LOW	MON	NES	NOX ⁶⁵	OKT	WIN	MS
80	7.7	2.4 (3)	6.9	7.1	1.2(1)	4.9 (5)	2.2 (2)	2.8 (4)	5.9
81	7.5	2.1 (1) ⁶⁶	4.4	4.3	4.9	3.2 (4)	3.1 (3)	2.1 (1)	5.8
82	4.1	3.8	4.5	5.8	3.1	1.6 (1)	2.9 (3)	1.7 (2)	6.1
83	7.6	2.0 (2)	5.4	6.6	4.7	1.6 (1)	4.5	2.8 (3)	7.0
84	8.7	--	5.5 (3)	5.5 (3)	5.8	3.3 (2)	4.5 (2)	6.4	7.5
85	11.8	-- (1)	7.0	8.9	4.7	-- (1) ⁶⁷	4.8	2.8 (3)	8.5
86	6.8	4.2 (1)	7.5	8.8	6.4 (2) ⁶⁸	7.3 (6)	6.4 (2)	6.7	9.2
87	12.4	4.6 (2)	7.4	9.4	9.4	1.8 (1)	4.7 (3)	8.3	9.8
88	12.9	4.4 (3)	8.1	9.2	8.8	-- (1)	4.0 (2)	6.4	11.4
89	5.7 (1)	9.3	12.1	9.6	12.4	6.1 (2)	6.7 (3)	7.7	12.4
90	10.8 (6)	7.5 (3)	12.7 (7)	10.3 (4)	10.7 (5)	14.0 (8)	6.2 (2)	5.6 (1)	13.3
91	10.9	20.8	15.2	13.6	14.0	4.3 (1)	5.0 (2)	7.3 (3)	15.0
92	12.4	13.3	14.4	13.5	11.4	6.4 (1)	7.2 (3)	6.7 (2)	15.1
93	12.6	14.0	13.7	15.8	13.6	4.5 (1)	6.5 (2)	9.3 (3)	16.5
94	11.3 (3)	13.3	17.4	21.5	15.4	6.4 (1)	10.0 (2)	16.4	18.4

64. Figures in parentheses rank from lowest to highest percentages.

65. Number in parenthesis is county's rank in its region.

66. Tied with Winston County.

67. Tied with Kemper County.

68. Tied with Oktibbeha County.

Table 5: African American Infant Mortality⁶⁹

YR	CLAY	KEM	LOW	MON	NES	NOX	OKT	WIN	MS
80 ⁷⁰	27.2	28.6 (3)	26.9	22.4	24.7	35.5 (1) ⁷¹	33.7 (2)	19.9	25.4
81	22.9	23.4	23.8 (3)	20.0	23.7	28.0 (2)	32.4 (1)	17.5	23.8
82	23.2	26.6 (2)	23.4	18.4	24.3	26.1 (3)	27.7 (1)	14.8	23.0
83	20.4	18.8	23.2 (3)	19.2	20.6	24.0 (1)	23.4 (2)	18.5	21.7
84	20.6 (1)	17.7	19.7 (4)	18.6	19.6 (5)	18.7 (6)	20.5 (2)	19.8 (3)	21.0
85	17.4	21.6 (1)	14.1	18.7 (4)	20.6 (2)	17.9 (5)	15.4	19.4 (3)	19.9
86	17.1	18.5 (4)	14.2	19.5 (3)	21.3 (1)	17.8 (5)	12.5	19.7 (2)	19.0
87	18.6	15.4	16.2	19.0 (3)	17.7	19.1 (2)	15.1	19.5 (1)	18.4
88	18.2 (2)	13.9	14.8	15.4	21.0 (1)	18.2 (2) ⁷²	16.6	16.5	17.6
89	16.2	17.6	14.9	17.9 (3)	19.6 (1)	19.4 (2)	15.2	16.2	16.8
90	18.1 (3)	13.6	16.5	17.3	20.0 (1)	20.0 (1) ⁷³	15.9	15.5	16.2
91	17.5	17.6 (3)	17.6 (3)	16.4	18.0 (2)	19.2 (1)	16.5	16.8	16.0
92	16.7	18.1 (3)	16.0	19.4 (2)	22.5 (1)	17.1 (4)	13.7	15.2	15.7
93	15.1	16.6	20.1 (1)	17.1	18.3	17.7 (3)	9.9	16.7	15.4
94	15.7	12.6	19.9	15.8	21.6	18.3 (3)	7.6	16.2	15.4

69. The following data is compiled in: MISSISSIPPI STATE DEPARTMENT OF HEALTH, VITAL STATISTICS MISSISSIPPI. This data reflects mortality rates for infants of an age less than one year. The State Department of Health uses the classification "non-white" rather than African American.

70. Figures in this table are all five-year averages. Thus, for example, the 1980 figure is for 1976-1980, 1981 is for 1977-1981, and so on.

71. The numbers in parentheses indicate the highest rank to the lowest in region.

72. Tied with Clay County.

73. Tied with Neshoba County.

			(2)		(1)				
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Table 6: Mississippi Unemployment Statistics 1970-1992

UNEMP RATE	NOX	KEM	LOW	NES	OKT	WIN	CLA	MON	MS
Nov. 93	6.7	6.8	4.4	3.9	3.0	7.4	6.6	5.5	
Jan. 93	8.8	8.7	5.8	4.3	4.0	10.7	6.8	6.0	
1992	10.7	10.8	7.9	6.7	6.2	15.3	9.9	8.8	
1991	12.9	10.4	8.3	8.1	5.5	12.9	10.0	10.2	
1990	13.0	10.8	6.3	7.1	4.8	8.1	9.9	8.1	
1989	12.6	11.6	6.2	10.2	4.5	7.9	8.1	6.8	
1988	12.3	12.1	7.8	8.6	4.9	8.9	6.8	6.4	
1987	12.4	16.6	8.5	9.4	5.6	11.5	9.0	8.3	
1986	14.7	16.0	9.8	12.8	8.6	13.9	13.6	11.4	
1985	15.3	19.3	8.3	12.7	7.5	11.6	11.0	10.0	
1984	13.9	17.5	9.1	10.0	7.5	11.6	10.2	8.6	
1983	16.4	13.6	10.7	13.0	7.9	18.1	11.8	10.5	
1982	17.3	16.5	10.2	13.6	7.1	19.1	9.1	11.2	
1981	10.6	11.8	8.3	8.4	4.9	10.0	7.0	8.3	
1980	11.9	10.1	8.0	8.7	4.6	10.5	6.6	7.1	
1979	7.6	8.7	5.3	5.6	3.8	7.4	5.0	5.3	
1978	10.2	9.4	6.1	7.0	4.6	8.8	7.6	6.6	
1977	8.9	9.9	5.1	7.3	4.7	10.4	6.1	5.5	
1976	8.5	10.5	4.9	7.6	4.2	9.2	5.1	5.7	
1975	15.3	11.9	8.7	10.7	6.1	13.6	7.7	12.5	
1974	5.8	5.3	4.7	3.9	3.1	5.0	5.0	4.8	
1973	3.9	4.4	3.2	3.6	2.1	3.1	3.9	3.1	
1972	4.8	6.0	3.2	5.0	2.8	4.1	5.3	3.6	
1971	5.7	8.9	4.0	6.4	4.1	5.7	6.5	3.7	
1970	n/a	n/a	4.3	5.5	n/a	6.2	5.3	4.5	

Table 7: Mississippi Comparative School Performance Data⁷⁴ 1993

Category	NOX	KEM	LOW	NES	OKT	WIN	CLA	MON
Per Cap Income (\$\$)	6,700	8,000	10,000	7,700	8,500	8,900	7,700	9,700
Avg Pupil Exp (\$\$\$)	3,432	3,745	3,161	2,974	4,128	3,338	4,208	3,311
Avg Exp- end Rank	77	41	132	144	12	93	7	101
# Measures Neg Chg	3/13	1/13	0/13	4/13	2/13	7/13	7/13	2/13
% Elig Free Lunch	90.01	78.23	40.00	41.42	80.39	62.57	85.56	31.24
Lunch Rank	141	116	26	31	121	88	131	12
ACT Rank (of 153)	132	113	76	76	137	80	142	33
IHL Rank	142	116	109	74	131	64	137	61
AP? /#	no	no	yes/3	no	no	yes/1	no	no
Gifted Ed	no	yes	yes	yes	no	yes	no	no
Gifted Ed Rank	133	110	61	65	133	85	133	133
L.Q. Gr.4	35.3	33.1	15.7	14.0	36.7	28.2	60.8	20.7
L.Q. Rank Grade 4	124	117	33	25	128	99	149	56
L.Q. Gr.6	16.7	5.3	24.0	19.7	26.1	29.9	44.2	20.7
L.Q. Rank Grade 6	35	5	78	56	86	108	146	62
L.Q. Gr.8	23.5	50.0	25.2	36.8	47.6	33.2	41.7	21.0
L.Q. Rank Grade 8	49	142	60	118	139	100	130	32
FLE Comp	34.0	35.4	21.1	33.5	36.6	25.8	56.3	18.6
FLE Comp Rank	121	125	53	119	127	76	151	43
State Algebra I	56.4	32.2	30.8	16.7	48.4	23.4	4.8	9.7
State Algebra I Rank	145	114	111	62	137	88	9	32
Grad Rate	87.40	72.20	80.30	73.90	69.30	72.50	70.00	79.60
Grad Rate Rank	14	108	54	98	120	105	117	64
Ch 1 Schools ⁷⁵	5	3	6	2	5	6	2	5
Ch 1 Fail ⁷⁶ /Rank	3/136	1/93	0/1	0/1	2/116	0/1	0/1	0/1
White Pop %	31.42	42.54	70.14	70.06	48.84	57.45	43.81	89.14
Black Pop %	67.93	55.39	29.36	12.25	51.16	41.81	54.67	10.45

74. The following data is compiled in: MISSISSIPPI DEPARTMENT OF EDUCATION, MISSISSIPPI REPORT CARD (1993). Rank totals can reach 153, consisting of the state's 149 school districts and four agricultural high schools. For purposes of this table, "WIN" is actually the Louisville Municipal School District. "L.Q." refers to students in the lower quarter.

75. This category refers to the number of schools participating in Chapter 1 programs.

76. This category refers to the number of schools that fail to meet their Chapter 1 achievement standards for three consecutive years.

Category	NOX	KEM	LOW	NES	OKT	WIN	CLA	MON
Accred Level ⁷⁷	2	2	3	3	2	3	1	3

77. Accreditation levels are based on process and performance standards and are divided into five levels: Level 1 = At Risk; Level 2 = Deficient; Level 3 = Adequate; Level 4 = Distinguished Achievement; and Level 5 = Model District.

WATER DISPUTES IN THE MIDDLE EAST: AN INTERNATIONAL LAW ANALYSIS OF THE ISRAEL- JORDAN PEACE ACCORD

RAED MOUNIR FATHALLAH*

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And we send down water from the sky according to measure, and We can cause it to soak into the soil, and surely We are able to drain it off.¹

I. INTRODUCTION

Water, considered by all holy books as a divine gift to mankind, is a ubiquitous resource, vital for life, human well-being, and economic development, and thus vital for peace and security.² However, fresh water is substantially decreasing in quality and quantity throughout the world, so much so that the issue of water is similar to that of oil in the early 1970s.³ As a result, fresh water will be the focus of intense political disputes in the coming decade and will become the natural resource most likely to cause armed conflicts in the twenty-first century.⁴ The alarming increase in the global population, accompanied by a doubling in the growth of the world-wide demand for water every twenty-one years, raises major concerns and tensions among states, particularly Middle Eastern countries, suffering from scarcity of this resource.⁵

A Swedish water expert once described water as a “[c]hameleon, continuously reappearing in new roles in the human environment.”⁶ One of water’s many roles is as an agent of conflict in international drainage basins.⁷ History has witnessed several disputes involving shared water resources which have resulted in

1. KORAN, Sura XXIII, 18.

2. See Steve Connor, *Water Wars*, THE ECONOMIST PUBLICATION: THE WORLD IN 1996 (1995), at 139.

3. New sources of fresh water are decreasing in availability because 95% of the world’s sewage is dumped directly into rivers, and the cost of tapping new water supplies is two to three times higher than tapping existing supplies. Thus, chronic water shortages will plague approximately 40% of the world’s population in approximately 80 countries by the end of 1996. See *id.* at 140.

4. See *id.* at 139.

5. See *id.* at 139-40.

6. Sharif S. Elmusa, *Dividing Common Water Resources According to International Water Law: The Case of the Palestinian-Israeli Waters*, 35 NAT. RESOURCES J. 223, 223-24 (1995) (quoting Malin Falkenmark, *New Ecological Approach to the Water Cycle: Ticket to the Future*, 13 AMBIO 152, 154 (1984)).

7. See *id.* at 224 (“Virtually all the waters of such basins in the Middle East are contested: the Nile, the Euphrates, the Tigris and the Jordan.”).

armed confrontations and political crises.⁸ Regardless of the degree of violence involved in the conflicts, shared water facilities were usually spared from any direct military attacks⁹ for fear that a weaker opponent who had been deprived of water might resort to higher retaliatory force, and in turn, target the facilities of its attacker.¹⁰

Both friendly and hostile neighboring states that share common water have a tendency to favor negotiation over armed confrontation.¹¹ Generally, direct attacks on water only occur when an attacking state has no reciprocal risk.¹² Recent illustrations of such actions include the destruction of Iraqi water delivery facilities during the Gulf War and the 1993 Serbian shelling of the Peruca dam in former Yugoslavia.¹³ Regardless of occasional direct attacks on facilities, water issues have more often than not brought parties to the negotiating table. Such issues have been the primary force behind many international dispute resolutions and cooperation agreements, thus affecting the course of history.¹⁴ The

8. For example, India and Pakistan have had several limited military confrontations since 1947, as well as several threats of war. However, these disputes never involved military attacks on water facilities and resulted in diplomatic negotiation. See Joseph W. Dellapenna, *Treaties as Instruments for Managing Internationally-Shared Water Resources: Restricted Sovereignty v. Community of Property*, 26 CASE W. RES. J. INT'L L. 27, 30-31 (1994).

9. See *id.* at 30.

10. See *id.* at 31.

11. See *id.* at 30 ("States that are otherwise seemingly locked into apparently uncompromising and never ending enmity have nonetheless negotiated cooperative water arrangements and continued to comply with pre-existing arrangements."). Friendly neighbors such as the United States and Canada dispute use of the Niagara and Columbia Rivers but have met allocation agreements in order to optimize use of the resources. See *id.* at 47. More hostile disputes occur between Turkey, Syria, and Iraq over the Euphrates. See Jonathan E. Cohen, *International Law and the Water Politics of the Euphrates*, 24 N.Y.U. J. INT'L L. & POL. 503, 511-15 (1991).

12. See Dellapenna, *supra* note 8, at 31-32.

13. See *id.*

14. For example, the United States and Great Britain, representing Canada, created the 1909 Boundary Waters Treaty establishing a hierarchy of different uses of their common frontier waters. Another example is The Washington Treaty of 1944 between the United States of America and Mexico Relating to the Utilization of the Waters of the Colorado from the Tijuana and Rio Grande. Domestic and municipal uses were the primary objectives of this treaty. BONAYA ADHI GODANA, *AFRICA'S SHARED WATER RESOURCES* 27-28 (1985).

current state of affairs in the Middle East peace process exemplifies such a situation.

This article focuses on the important role of the Jordan River basin in the peace accord (Treaty) between the state of Israel and the Hashemite Kingdom of Jordan.¹⁵ First, Part II briefly examines past water disputes involving the Jordan River.¹⁶ Part III reviews Treaty provisions covering the allocation and management of water resources and compares them with those of the Treaty's predecessor, the Main Plan. Finally, Part IV examines the Treaty's provisions in correlation with the substantive and procedural requirements of the International Law Commission (ILC) Draft Articles that play a prominent role in the Treaty's operation. This article concludes by summarizing the role of the Treaty in the water policy of the region and predicting the Treaty's potential influence over similar water disputes in the area.

II. HISTORICAL BACKGROUND: FROM WAR TO PEACE

A. *The Water Disputes and Their Origins*

Since ancient times, the need for fresh water has played a predominant role in shaping Middle Eastern civilizations.¹⁷ In ancient Egypt, the population gathered around the Nile, and in Mesopotamia, around the Tigris and the Euphrates.¹⁸ Following the collapse of the Ottoman empire, the location of water resources,

15. Treaty of Peace, Oct. 26, 1994, Isr.-Jordan, 34 I.L.M. 43 [hereinafter Treaty].

16. This article does not aim to give an extensive historical overview of the military and political events of the Arab-Israeli conflict. However, giving a broad overview of the events surrounding the water disputes in the Middle East region will help in assessing the elements at stake in the conflict and how water became a direct cause of military confrontation between the riparian states, affecting foreign and strategic policies.

17. See AARON T. WOLF, *HYDROPOLITICS ALONG THE JORDAN RIVER: SCARCE WATER AND ITS IMPACT ON THE ARAB-ISRAELI CONFLICT* 12-15 (1995) [hereinafter WOLF]; Aaron Wolf, *Water for Peace in the Jordan River Watershed*, 33 NAT. RESOURCES J. 797, 801-05 (1993) (providing a chronology of modern water conflict and cooperation in the Middle East). See generally Aaron Wolf & John Ross, *The Impact of Scarce Water Resources on the Arab-Israeli Conflict*, 32 NAT. RESOURCES J. 919 (1992) [hereinafter Wolf & Ross] (giving a brief history of political events affected by the scarcity of water resources in the Middle East).

18. See generally WOLF, *supra* note 17, at 15-42 (describing the effects of the water resources on the development of the Middle East civilization). For a map of the waters in the Middle East, see Appendix A.

particularly the Jordan River, had an important influence in shaping the boundaries of the French and British mandates which later became the borders between Lebanon, Syria, and Jordan.¹⁹ The Ottoman collapse also influenced the immigration policies of the British and French mandate in the area.²⁰

In 1949, Armistice Agreements that were established after the first Arab-Israeli war set new boundaries and Demilitarized Zones between neighboring states.²¹ Due to differing interpretations of the zones' legal status, the Middle East witnessed recurrent hostilities and retaliatory incidents between its riparian states.²² The Jordan River played a crucial and strategic role in the hostilities.²³

The United States' Cold War policy forced the United States to play an active role in shaping Middle Eastern politics, having a significant influence on the water problems between the riparian enemy states.²⁴ Arab populations suffered from serious poverty, lack of development, and especially hostile feelings toward the United States for its continuous and unconditional support of Israeli policy in the Middle East.²⁵ Because some believed that extreme poverty would breed pro-Communist feelings, American officials saw the need to ensure plans for the development of the region, including management of the water facilities in the Jordan River Basin.²⁶

B. *The Main Plan: 1953-1956*

In 1952, the United States encouraged the United Nations Relief and Works Agency (UNRWA) to supervise a revision project of all

19. See Wolf & Ross, *supra* note 17, at 927-29. See generally WOLF, *supra* note 17, at 15-42.

20. See Wolf & Ross, *supra* note 17, at 929. See generally WOLF, *supra* note 17, at 28-40.

21. See MIRIAM R. LOWI, *WATER AND POWER: THE POLITICS OF A SCARCE RESOURCE IN THE JORDAN RIVER BASIN* 80 (1993).

22. A riparian state is a country situated on the banks of a river, lake, etc. See WEBSTER'S NEW TWENTIETH CENTURY UNABRIDGED DICTIONARY 1564 (2d ed. 1983).

23. See LOWI, *supra* note 21, at 79-80.

24. See *id.* at 81.

25. See *id.*

26. See *id.* at 81 (recounting the feelings of United States officials that "poverty provided a fertile breeding-ground for communism . . .").

previously proposed and approved plans involving the management of water resources in the Jordan River basin. The UNRWA sought to ensure the efficiency and success of the plans.²⁷ This project primarily targeted the preceding Bunger Plan, a unilateral water plan for the Kingdom of Jordan²⁸ jointly supervised by the Truman administration and the UNRWA. The Bunger Plan advocated the integration of water and power resources from the Jordan, Yarmouk, and Litani Rivers by the four riparian states. Ultimately, the project led to the Unified or Main²⁹ Plan, that was submitted to the United States Government and the UNRWA in August 1953.³⁰

The Main Plan suggested construction of diversionary canals to irrigate the lands of the Upper Jordan Basin. It also supported utilization of Lake Tiberias as a storage reservoir for the flood flows of the Jordan and Yarmouk Rivers.³¹ The Main Plan rejected some of the Bunger proposals, such as the use of the Maqarin Dam for irrigation and made no reference to the Litani River in Lebanon.³²

President Dwight Eisenhower appointed Eric Johnston, then Chairman of the United States Technical Cooperation Agency's Advisory Board for International Development, as "Personal Representative of the President," with the rank of ambassador.³³ Mr. Johnston's mission was to reach a regional agreement between the riparian states, Jordan, Israel, Lebanon, and Syria,³⁴ on the

27. *See id.* at 82-83.

28. *See id.* at 82. This plan was proposed by Mills Bunger, an American engineer with the United States Technical Cooperation Agency (TCA). The Bunger Plan supported joint Syrian-Jordanian development of the Yarmouk's waters through a dam to be built at Maqarin, diverting water through a canal along the Jordan River. The Plan was designed to provide water to over 100,000 refugees and increase employment opportunities in the region. *See id.*

29. *See id.* at 83. The Main Plan was named after Charles T. Main Inc., a Boston engineering firm that conducted the research and supervised the draft of the study of effective and efficient use of water resources in the Jordan Valley. *See id.*

30. *See id.*

31. *See id.*

32. *See id.*

33. *See id.* at 86.

34. All references to riparian and neighboring states denote the countries of Jordan, Israel, Lebanon, and Syria, all located in the Jordan River basin. *See* Appendix A.

development of the Jordan River Basin.³⁵ He presented the Main Plan as a framework for regional cooperation on water resources, considering a framework based primarily on the needs and consumption of the neighboring states and their available resources, not the geographical borders separating them.³⁶

Negotiations with all the parties were successful, and the allocations set forth by the Main Plan were ultimately accepted by both Arab and Israeli technical committees.³⁷ However, the Main Plan remained unratified for political reasons.³⁸ The political environment in the region was full of hatred, leading to serious misconceptions and continuous hostilities.³⁹ In fact, the Arab League refused to recognize the plan because it would help the development and be an implicit recognition of the state of Israel.⁴⁰

In the aftermath of Johnston's failed mission in the Middle East, the riparian states continued their unilateral water development projects.⁴¹ Meanwhile, the two principal riparian states, Jordan and Israel, were tacitly conducting their water policies in accordance with the Main Plan.⁴² Although Main Plan negotiations never resulted in a formal international instrument, they impacted the policies of the two riparian states during the following years.⁴³ Moreover, the informal understanding between Israel and Jordan ultimately led to discrete technical meetings to determine day-to-day hydraulic operations in the 1960s and 1970s.⁴⁴ Water officials from Israel and Jordan met two to three times a year at "Picnic Table Talks" to discuss flow rates and allocations at the confluence of the Jordan and Yarmouk Rivers.⁴⁵

35. *See id.*

36. *See id.*

37. *See* Jonathan M. Wenig, *Water and Peace: The Past, The Present, and The Future of the Jordan River Watercourse: An International Law Analysis*, 27 N.Y.U. J. INT'L. L. & POL. 331, 335 (1995).

38. *See id.*

39. *See id.*

40. *See id.* at 335-36.

41. *See id.* at 336.

42. *See id.*

43. *See id.*

44. *See id.* at 337.

45. *See id.*

C. *Water: From a Ground of War to a Pillar of Peace*

Following the failure of the mission supporting the Main Plan, Jordan extended an irrigation canal (East Ghor Project) from the Yarmouk River southward along the eastern Ghor of the Jordan Valley.⁴⁶ The East Ghor Project was carried out in cooperation with Syria and financed jointly by the governments of Jordan and the United States.⁴⁷ Israel proceeded with its ten year plan to integrate all of the country's water resources into a comprehensive country-wide network called the National Water Carrier.⁴⁸

These unilateral water development projects created serious tensions among the neighboring states and led to the exchange of threats between them.⁴⁹ In response to Jordan's pleas before the Arab League, the Arab states had two possible responses: (1) diverting the Hasbani and Baniyas waters northward into Syria and Lebanon to obstruct their access to Israel; and/or (2) implementing military measures to deny Israel Upper Jordan water, thereby provoking a confrontation.⁵⁰

Only Syria favored military action.⁵¹ Egypt's president, Abdul Nasser, urged his Arab partners not to fight Israel, having had assurances from President Kennedy that the United States would help to defend Israel.⁵² Israel responded that it intended to complete the project and to prevent the Arab countries from diverting the waters of the Jordan River.⁵³

Between 1964 and 1967, these political clashes developed into several military confrontations between the Syrians and the Israelis.⁵⁴ Other than the bombing of the East Ghor Canal later in 1969, this time period involved the most direct water-related con-

46. *See id.* at 337.

47. *See* LOWI, *supra* note 21, at 119.

48. *See id.* at 116.

49. *See* WOLF, *supra* note 17, at 48-49.

50. *See id.*

51. *See* LOWI, *supra* note 21, at 124.

52. *See id.* at 121.

53. *See id.* at 118-19. "Israel's Foreign Minister Golda Meir warned that any move by the Arab countries to divert the headwaters of the Jordan River would constitute 'an outright attack on one of Israel's means of livelihood'; 'it would be regarded as a 'threat of peace.'" *Id.* at 119.

54. *See id.* at 125-26.

flict.⁵⁵ The most notable incident was the destruction of the diversion works on the Baniyas-Yarmouk Canal in Syria by the Israeli Air Force in July 1966.⁵⁶ Israel destroyed the All-Arab diversion plan that would have reduced Israeli water supplies by 35%.⁵⁷

In the aftermath of the Six Days War of 1967,⁵⁸ the geopolitical map of the Middle East changed dramatically. Apart from Israel's important victory in terms of land and borders, Israel also gained important water resources by acquiring two of three Jordan River headwaters, riparian access to the entire river, and the recharge zones of the mountain aquifer that currently supplies one-third of Israel's freshwater supply.⁵⁹ By occupying the Syrian Golan Heights, Israel also controlled the Baniyas tributary.⁶⁰ After its 1982 invasion of Lebanon, Israel maintained effective control over the remaining Hasbani tributary as well as the strategic Litani River.⁶¹ Some experts argue that the quest for water has been the primary motive behind Israel's wars, and that this motive has been prominent in Israel's military strategy and policy.⁶²

III. OVERVIEW OF THE TREATY'S EFFECTS ON THE ALLOCATION OF WATER RESOURCES

The recent signing of the Treaty is the best illustration of the importance of water to the people of the Jordan River Valley. The Treaty consists of thirty articles of agreement that concern international boundaries, security, economic relations, refugees, and, of course, water.⁶³ The only provision in the Treaty governing shared

55. *See id.*

56. *See* Wolf & Ross, *supra* note 17, at 937.

57. *See id.*

58. The Six Days War of 1967 resulted in an important victory by Israel against its Arab neighbors. Israel gained a considerable stake of new territory that it still presently occupies (the Golan Heights). *See id.*

59. *See* WOLF, *supra* note 17, at 52.

60. *See* LOWI, *supra* note 21, at 147. After occupation of this tributary, the Hasbani tributary was the only northern Jordanian water source outside of Israel's control. *See id.*

61. *See* WOLF, *supra* note 17, at 57-59.

62. *See* Appendix B; *see also* Wenig, *supra* note 37, at 331.

63. *See* STEPHEN C. LONERGAN & DAVID B. BROOKS, WATERSHED: THE ROLE OF FRESH WATER IN THE ISRAELI-PALESTINIAN CONFLICT 270 (1994). The division and numbering of

natural resources is Article 6 of the Treaty, which is entitled simply "water."⁶⁴ Article 6 of the Treaty constitutes the first water agreement between Israel and one of its neighbors.⁶⁵

Annex II of the Treaty contains detailed and technical provisions concerning shared water resources.⁶⁶ First, Annex II sets forth the allocation of water from the Yarmouk and Jordan Rivers.⁶⁷ Second, it provides for the parties' cooperation in building storage facilities to improve the efficiency of their resources.⁶⁸ Further, Annex II provides for the protection of the quality of water, as well as the cooperation between the parties in increasing water supplies and exchanging information.⁶⁹ Finally, Annex II sets forth the implementation of the Joint Water Committee that must coordinate such cooperation.⁷⁰

A. Allocation

The first paragraph of Article 6 sets forth principles governing the "rightful allocation" of the different shared water resources between Israel and Jordan.⁷¹ The major water resources that are subject to the provisions of the agreement are: the water of the

the discussion of the Treaty does not reflect the division of the paragraphs of the Articles of the Treaty or the Annex.

64. See Appendix B.

65. See generally WOLF, *supra* note 17, 42-70 (reviewing the history of water conflicts in the Middle East). Although Israel has had two other water related agreements with Jordan, the Treaty is the first comprehensive agreement reached. In 1960, Israel agreed to allow Jordan to repair the East Ghor Canal in exchange for Jordan's agreement to follow the water allocations established in the Main Plan and to stop Palestinian Liberation Organization activity in Jordan. See *id.* at 54. In 1963, Jordan reached a new agreement concerning the allocation of the Jordan River waters in return for Israel's concession to allow United States tank sales to Jordan. See *id.* at 49.

66. This article contains four principal paragraphs governing different aspects of water policies from the allocation of shared water resources and their storage to the cooperation in their development and preservation of water quality. In studying these agreed principles, this article examines Article 6 of the Treaty, in reference to Annex II entitled "Water Related Matters" under which more detailed and technical principles are enunciated.

67. See Treaty, *supra* note 15, Annex II, art. I.

68. See *id.* Annex II, art. II.

69. See *id.* Annex II, art. III.

70. See *id.* Annex II, art. VII; see also Appendix B.

71. Treaty, *supra* note 15, art. 6, § 1.

Jordan River that, with all its tributaries, consists of about 600 million cubic meters per year (mcm/year), the water of the Yarmouk River that consists of approximately 500 mcm/year of which 250 mcm/year flowing south of Syria, and the water of the Mountain Aquifer that extends from the mountains of the West Bank into pre-1967 Israel that consists of between 500 to 600 mcm/year.⁷² The Treaty deals separately with the allocation of Yarmouk and Jordan waters.⁷³ The Treaty also creates a distinction between summer and winter allocation that did not exist in the Main Plan.⁷⁴

72. See Draft Report, *Water and Peace in the Middle East: Report of the Harvard Middle East Water Project 17* (Oct. 1995).

73. See Treaty, *supra* note 15, Annex II, art. I, §§ 1, 2.

74. Under the Treaty, the summer period extends from the 15th of May to the 15th of October of each year. The winter period extends from the 16th of October to the 14th of May of each year. See *id.* Annex II, art. 1, §§ 1(a), 1(b).

1. *Waters from the Jordan River*

The Treaty entitles Jordan to the majority of the Yarmouk River's flow⁷⁵ and gives Israel principal entitlement to the Jordan waters.⁷⁶ Jordan receives twenty mcm of summer flow⁷⁷ in exchange for twenty mcm of winter Yarmouk water⁷⁸ and must bear the cost of the transfer.⁷⁹ During the winter period, Jordan is entitled to store for its use an average of twenty mcm from the floods of the Jordan River south of its confluence with the Yarmouk.⁸⁰ The Treaty allows both states to use the excess flows in order to avoid unnecessary waste.⁸¹

The Treaty also provides for Israel to maintain its use of the Jordan River waters between its confluence with the Yarmouk and its confluence with Tirat Zvi Wadi Yabis.⁸² Jordan has the same right but is only entitled to those waters if its entitlement is subject to the condition that its use does not "harm the quantity or quality of Israeli uses."⁸³

Under the Main Plan, Jordan was entitled to 100 mcm/year from the Jordan River waters that was to be transferred from the Kinneret to the East Ghor Canal.⁸⁴ However, after the failure of the Main Plan, Jordan began taking this portion directly from the lower Jordan River bordering its territories.⁸⁵

2. *Waters from the Yarmouk River*

Under the Treaty, Israel is entitled to twenty-five mcm/year (twelve mcm in the summer and thirteen mcm in the winter), and Jordan gets the rest of the flow.⁸⁶ Further, Israel is entitled to

75. See Treaty, *supra* note 15, Annex II, art. I, § 1(b); see also Wenig, *supra* note 37, at 338.

76. See Treaty, *supra* note 15, Annex II, art. I, § 1(b).

77. See *id.* § 2(a).

78. See *id.* § 1(b).

79. See *id.* § 2(a).

80. See *id.* § 2(b).

81. See *id.*

82. See Treaty, *supra* note 15, Annex II, art. I, § 2(c).

83. *Id.*

84. See Wenig, *supra* note 37, at 340.

85. See *id.*

86. See *id.*

pump an additional twenty mcm from the Yarmouk in return for its concession of transferring twenty mcm during the summer period from the Upper Jordan River to Jordan.⁸⁷ Finally, both countries are entitled to the excess flood waters that are unusable.⁸⁸

Under the Main Plan, Israel was allocated twenty-five mcm/year of the Yarmouk water.⁸⁹ However, as mentioned earlier, the Main Plan did not have any seasonal distinctions.⁹⁰ Although all of that water was a summer allocation,⁹¹ Israel regularly extracted extensive amounts of water during the winter seasons.⁹² While it never officially claimed any right to these waters, Israel used them when Jordan could not. In this way, Israel took advantage of its temporarily favorable geographic position and avoided the waste of unused waters.⁹³

Undoubtedly, the agreed repatriation of the Yarmouk waters has resolved a "point of contention which arose on previous occasions."⁹⁴ Under the Main Plan, Jordan was allocated 100 mcm of Yarmouk waters for the proposed West Ghor Canal⁹⁵ on the West Bank, then under Jordan's control.⁹⁶ The Six Days War of 1967, however, changed the Middle Eastern map and gave Israel control over the Yarmouk, granting Israel an arguable claim over the alleged 100 mcm/year that it had been extracting.⁹⁷ This claim was disputed by the Jordanians and Syrians, who also shared the Yarmouk resources,⁹⁸ but was resolved under the Treaty after Israel abandoned its claim in accordance with Israel's proposed withdrawal from the West Bank.⁹⁹

87. *See id.* §§ 1(b), 2(a).

88. *See id.* § 2(b).

89. *See Wenig, supra* note 37, at 338.

90. *See id.*

91. *See id.*

92. *See id.* at 339.

93. *See LOWI, supra* note 21, at 181.

94. *Wenig, supra* note 37, at 339.

95. *See id.*

96. *See id.*

97. *See id.*

98. *See id.*

99. *See id.*

3. Saline Springs

Under the section covering the Jordan River, the Treaty contains provisions for desalinated water.¹⁰⁰ Jordan is entitled to ten mcm of desalinated water from about twenty mcm of saline springs diverted into the lower Jordan River.¹⁰¹ Israel agreed to “explore the possibility” of desalinating and maintaining the springs at its own cost.¹⁰² Furthermore, Israel will supply Jordan with the ten mcm from the Jordan River during the summer period until the facilities are operational.¹⁰³

4. Groundwater

Annex II includes a separate article dealing exclusively with the groundwater in Emek Ha'arava/Wadi Araba.¹⁰⁴ This article is an essential section of the Treaty because it governs wells that were once drilled and managed by Israel¹⁰⁵ but currently fall within Jordan's boundaries and thus are controlled by Jordan.¹⁰⁶ The Treaty mandates that the wells remain in Jordan's control but subject to both neighbors' use.¹⁰⁷ Jordan is responsible, with Israel's support, for licensing well maintenance and replacement so that proper use is preserved by both states.¹⁰⁸ Provisions also stipulate that both states have a duty to refrain from taking “any measure that may appreciably reduce the yields or quality of these wells and systems.”¹⁰⁹ This article provides Israel with an additional ten mcm/year from the wells.¹¹⁰ However, the additional allowance is subject to the supervision of the Joint Water

100. *See id.* § 2(d).

101. *See id.*

102. *Id.*

103. *See id.*; *see also* Wenig, *supra* note 37, at 340-41.

104. *See* Treaty, *supra* note 15, Annex II, art. IV.

105. *See id.* § 1.

106. *See id.*

107. *See id.*

108. *See id.* § 2.

109. *Id.* § 1.

110. *See id.* § 3.

Committee to assure that the increased pumping does not harm existing uses.¹¹¹

5. *Operation and Maintenance*

The Treaty contains several provisions concerning the operation and maintenance of almost all the agreed water resources.¹¹² Systems located within Israeli territory, including those supplying Jordan with water and electricity, are Israel's responsibility, while those serving only Jordan are Jordan's responsibility and expense.¹¹³ Israel guarantees Jordanian personnel with equipment access to the facilities located in Israel in order to assure continued operation.¹¹⁴ In addition, Jordan is responsible for the operation of the wells in its own territory to assure Israel's supply of water and electricity.¹¹⁵ Because Israel maintains responsibility for those wells,¹¹⁶ Jordan guarantees Israel access to personnel and equipment to facilitate the operations.¹¹⁷

6. *Additional Water*

Article I of Annex II of the Treaty governs the development of additional water resources. In this section, parties agree to cooperate in finding new resources "for the supply to Jordan of an additional quantity of (50) MCM/year of water to drinkable standards."¹¹⁸ Interestingly, this allocation of drinkable water comes as compensation for Jordan. Fifty to seventy mcm of the 100 mcm/year allocated to Jordan under the Main Plan were to be of drinkable quality and were to be diverted from the Kinneret into East Ghor Canal.¹¹⁹ However, under the Treaty, Jordan's allocation is directly diverted from the lower Jordan River, leaving

111. *See id.*

112. *See id.*

113. *See Treaty, supra* note 15, Annex II, art. I, § 4(a).

114. *See id.* § 4(b).

115. *See id.* § 4(a).

116. *See Treaty, supra* note 15, Annex II, art. IV, § 4(a).

117. *See id.* § 4(b).

118. *See id.* § 3.

119. *See Wenig, supra* note 37, at 341.

Jordan with water of high salinity.¹²⁰ Some experts argue that this compensatory allocation is “a peace gesture on Israel’s part”¹²¹ to help Jordan deal with its chronic shortage of drinkable water.¹²²

B. Storage

The parties agree to cooperate in building two storage facilities.¹²³ The first is on the Yarmouk River,¹²⁴ directly downstream of the Adassiya diversion. It reflects the previous Adasiyeh Dam project proposed by the Main Plan that was intended to facilitate the diversion efficiency of waters into the King Abdullah Canal (East Ghor Canal).¹²⁵

The second water storage system will be built on the Jordan River along the common boundary between Jordan and Israel.¹²⁶ This storage system is designed to allow Jordan to store its twenty mcm winter allocation in addition to any other potential floodwaters.¹²⁷ But, Jordan must let Israel use three mcm per year of any added storage capacity.¹²⁸

Finally, the Treaty makes reference to other storage facilities that can be agreed upon by the parties.¹²⁹ This agreement reflects the long-time desire of the parties to construct the Maqarin project, a large dam on the Yarmouk that was envisioned by the Main Plan.¹³⁰

C. Water Quality and Protection

120. See *id.* at 342.

121. *Id.* at 341.

122. See Steve Rodan, *Jordan Wants Fair Share of Water Now; Israel Looks Ahead*, THE JERUSALEM POST, Sept. 16, 1994, at 2B; see also Wenig, *supra* note 37, at 341.

123. See Treaty, *supra* note 15, Annex II, art. II, §§ 1, 2.

124. See *id.* § 1.

125. See Treaty, *supra* note 15, Annex II, art. II, § 1; Wenig, *supra* note 37, at 342.

126. See Treaty, *supra* note 15, Annex II, art. I, § 2(b).

127. See *id.* § 2.

128. See *id.* § 2.

129. See *id.* § 3.

130. See LOWI, *supra* note 21, at 172-80; Wolf & Ross, *supra* note 17, at 939-41; Wenig, *supra* note 37, at 343. If completed, the Maqarin project would allow Jordan to store the excess winter floodwaters and use its share of the Yarmouk. Several attempts to undertake this project have failed because of the project’s dependence on Syria’s acquiescence. See *id.*

Within the Treaty is a specific Article governing the obligation of both parties to undertake necessary measures to preserve the quality of the shared waters of the Jordan, Yarmouk, and the Arava/Araba groundwaters “against any pollution, contamination, harm or unauthorized withdrawals of each other’s allocations.”¹³¹ Generally speaking, this article sets a relatively high standard of protection by creating a duty on the part of each supplying country to preserve the quality of the water resources in its territories so that all resources are protected from harm.¹³² The obligation to preserve water quality extends to the water systems located in each territory that supplies its neighbors with water.¹³³

Once again, the Treaty calls for cooperation among the parties in accomplishing such a task. Joint monitoring stations will be established along the participating country’s boundaries.¹³⁴ These monitoring stations will be subject to the supervision of the Joint Water Committee in order for the parties to control the quality of their shared water resources.¹³⁵

D. Cooperation

The Treaty contains several provisions relating to the cooperation between the parties “in developing plans for purposes of increasing water supplies and improving water use efficiency, within the context of bilateral, regional or international cooperation.”¹³⁶ Some of those provisions are also discussed under the sections covering the allocation, the building of storage facilities, and the preservation of water quality.¹³⁷

1. Joint Water Committee

All the projects and policies set forth by Annex II require a considerable amount of cooperation and jointly coordinated efforts. To

131. Treaty, *supra* note 15, Annex II, art. III, § 1.

132. *See id.* § 4.

133. *See id.* § 6.

134. *See id.* § 2.

135. *See id.*

136. Treaty, *supra* note 15, Annex II, art. VI, § 2.

137. *See id.* Annex II, art. I, II, III.

accomplish this, the Treaty establishes a Joint Water Committee (Committee), comprised of three members from each country.¹³⁸

The Committee supervises all the joint projects undertaken by the countries and provides the necessary technical support and expertise to assure that each country's projects are in compliance with the Treaty.¹³⁹ Subject to the approval of both governments, the Committee has the power to appoint specialized subcommittees to perform any required technical task.¹⁴⁰ However, the Treaty grants neither judicial nor legislative authority to the Committee and does not provide a dispute settlement remedy.¹⁴¹ The Committee's establishment is significant because it formalizes and extends the role of the picnic table summits,¹⁴² which played an important role in the de facto compliance with the Main Plan¹⁴³ and resemble the International Joint Commission.¹⁴⁴

2. Notification and Agreement

Each party is obliged to notify and obtain the consent of the other before undertaking any project effecting the flow of either river.¹⁴⁵ The party must provide notification six months in advance of starting any such project.¹⁴⁶ The six month window allows for the meeting of the Committee to study the proposed project and assure its efficient management, thus preventing any adverse impact on an effected party.¹⁴⁷

138. *See id.* § 1.

139. *See id.* § 2.

140. *See id.* § 3.

141. *See id.*

142. *See* LONERGAN & BROOKS, *supra* note 63, at 273.

143. *See* discussion *supra* Part II.B (mentioning the role of picnic table summits in the development of the Main Plan).

144. *See id.* The Committee manages water along the United States-Canada border. *See id.*

145. *See* Treaty, *supra* note 15, Annex II, art. V, § 2.

146. *See id.*

147. *See id.*

3. *Transfer of Information*

Israel and Jordan undertook to exchange relevant data concerning water resources and the proposed facilities each party intended to build and operate.¹⁴⁸ The parties exchange the information through the Committee under the methods and procedure set by the Treaty.¹⁴⁹

IV. THE DEVELOPMENT OF INTERNATIONAL WATER LAW

A. *Overview*

The issue of water in the Middle East can only be solved through cooperation and agreement. However, such cooperation and agreement depends on an official body of law in order for a treaty to survive political disagreement between the riparian states.¹⁵⁰ Having examined the geopolitical implications of the water issue in the Treaty, an examination of the legal aspects of the Treaty is critical.¹⁵¹ This section serves as a brief overview of the principals of transboundary water rights and their developments in order to assist in understanding the Treaty and its implications in international water law. An introduction into the different water rights theories and their development into a body of customary international law is also necessary.

B. *Water Rights Theories*

In the absence of international agreements, international water law has evolved through a body of customary law. This evolution was shaped either by the practices of the states or by the international decisions and agreements that governed the relations between the riparians throughout history.

One legal theory adopted by drainage basin states is the theory of absolute territorial sovereignty, also known as the Harmon Doc-

148. See Treaty, *supra* note 15, Annex II, art. IV, § 2 (mandating an exchange of technical information regarding the wells operated by Jordan).

149. See *id.* § 1.

150. See Cohen, *supra* note 11, at 554.

151. This section does not provide an extensive analysis of the different instruments governing international water law.

trine.¹⁵² Under this theory, a state can use the rivers on its territory without any obligation or responsibility toward any riparian neighbor.¹⁵³ Naturally, this theory is favored by upstream states, such as Turkey, in its endless dispute with Syria and Iraq over the Euphrates.¹⁵⁴ However, a majority, especially downstream riparian states, reject this theory for its narrowness and inefficiency in solving shared watercourse differences.¹⁵⁵ These states prefer a theory of absolute integrity of the river, under which an upper riparian state cannot, in its use of an internationally-shared river, harm or affect in any way the flow or the quality of the shared waters.¹⁵⁶

Like the Harmon Doctrine, the theory of absolute integrity of the river is inequitable in its award of rights. Therefore, neither doctrine has received much support.¹⁵⁷ Consequently, the doctrine of restricted sovereignty¹⁵⁸ has become a partial conciliation, combining the theory of limited territorial sovereignty with the theory of limited integrity of the river.¹⁵⁹

Under restricted sovereignty, "each state recognizes the rights of all riparian states to use some water from a common source, and the obligation to manage use so as not to interfere with the similar use of other riparian states."¹⁶⁰ The recognition of reciprocal rights and obligations reflects the growing need for fresh water by the states in their search for guaranteed and constant water resources and their desire to avoid conflict.

The theory of restricted sovereignty has become the dominant trend among riparian states and thus has constituted the customary rule of international law as reflected in international

152. GODANA, *supra* note 14, at 32. The Harmon Doctrine was named after the United States Attorney General who announced this theory during a dispute with Mexico over the Rio Grande in 1895. The theory was later invoked by India in a conflict with Pakistan and by Ethiopia in a dispute with Egypt and Sudan over the Nile. *See id.*

153. *See id.*

154. *See* Cohen, *supra* note 11, at 522.

155. *See id.* at 522-23.

156. *See id.* at 523.

157. *See id.*

158. *See* Dellapenna, *supra* note 8, at 36.

159. *See* Cohen, *supra* note 11, at 524.

160. Dellapenna, *supra* note 8, at 36.

case law¹⁶¹ and codified in the works of international organizations.¹⁶² Indeed, the restricted sovereignty doctrine gave rise to the rule of equitable utilization and the no appreciable harm theory, as codified in the international instruments.¹⁶³

The evolution of watercourse treaty practice has witnessed a transition from a model of restricted sovereignty to a more restrictive definition of sovereignty under the theory of community of interest or a community of property model.¹⁶⁴ The allocation of water resources based on equitable apportionment under the community of interest theory is actually based on a concept of equitable participation under the theory of community of property.¹⁶⁵

Under another theory, known as the ecosystem concept, a basin is jointly managed as one geographic and economic unit, regardless of international boundaries.¹⁶⁶ The riparians agree on sharing the resources of the basin and equitably participate in its development and protection.¹⁶⁷ This theory gives a right of action to all states, prohibiting states from disposing or affecting the flow or the quality of the waters without the agreement or cooperation of its neighbors.¹⁶⁸ This modern theory is mirrored in various international treaties and legal documents, mainly through agreed provisions imposing on the parties an obligation to participate in the

161. One example is the Lake Lanoux Arbitration between France and Spain. See PHILIPPE SANDS, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* I 348 (1995).

162. In addition to the ILC Draft Articles, these principles were applied by the International Court of Justice, in the case of the Gabčíkovo-Nagymaros Project, concerning the dispute over the Danube between Hungary, on one side, and the Czech and Slovak Republic, on the other side. See *id.* at 351-54.

163. An example of one such international instrument is the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes. See *id.* at 357.

164. See Dellapenna, *supra* note 8, at 42.

165. See *id.*

166. See Ved P. Nanda, *The Law of the Non-Navigational Uses of International Watercourses: Draft Articles on Protection and Preservation of Ecosystems, Harmful Conditions and Emergency Situations, and Protection of Water Installations*, 3 *COLO. J. INT'L ENVTL. L. & POL'Y* 175, 179-80 (1992) (describing the international acceptance and development of the ecosystem concept).

167. See *id.*

168. See *id.*

management of the watercourse.¹⁶⁹ Additionally, certain procedural requirements in the dealing between the states, such as the requirements of notification and consultation, as well as the sharing of data is involved.¹⁷⁰ Although this theory is the most beneficial in the current world situation, it remains a rather utopian concept in light of the scarcity problem haunting the planet.¹⁷¹

C. The Codification of the Customary Law and its Application to the Treaty

Since the beginning of the century, several attempts have been made to develop a mechanism of regulating international watercourses. The most significant codification of the customary law was the Helsinki Rules on the Uses of the Waters of International Rivers (Helsinki Rules), completed in 1966 by the International Law Association (ILA).¹⁷² Article IV of the Helsinki Rules was the first incorporation of the equitable use doctrine stating that “[e]ach basin State is entitled within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.”¹⁷³

According to the ILA, the equitable use doctrine set forth in the Helsinki Rules was “a development of the rule of international customary law forbidding states to cause any substantial damage to another state or to areas located outside the limits of national jurisdiction.”¹⁷⁴ Although the Helsinki Rules helped to establish the rules of equitable utilization and no appreciable harm, the

169. Examples include the 1978 Agreement between Canada and the United States on Great Lakes Water Quality, the Convention on the Conservation of Antarctic Marine Living Resources, and the World Charter for Nature. *See id.* at 179.

170. *See id.*

171. *See* Cohen, *supra* note 11, at 513-15 (describing current tensions, compounded by the drought situation, between Turkey, Syria, and Iraq despite a 1990 bilateral agreement on water division).

172. INTERNATIONAL LAW ASSOCIATION, HELSINKI ON THE USES OF THE WATERS OF INTERNATIONAL RIVERS, 52d Conf. (Aug. 20, 1967) [hereinafter Helsinki Rules].

173. *Id.* art. IV.

174. Stephen McCaffrey, *International Organizations and the Holistic Approach to Water Problems*, 31 NAT. RESOURCES J. 139, 144 (1991) (quoting FINNISH BRANCH OF THE INTERNATIONAL LAW ASSOCIATION, THE WORK OF THE INTERNATIONAL LAW ASSOCIATION ON THE LAW OF INTERNATIONAL WATER RESOURCES 225 (E. Manner & V. Matsaelampi eds. 1988)).

unofficial status of the ILA eroded the enforceability of the Rules and undermined their binding authority.¹⁷⁵

In an attempt to give binding legal authority to the regulation of international watercourses and under the recommendation of the United Nations, the ILC studied a possible legal framework for the rules. After several sessions and almost twenty-five years of study, the result was the 1994 Draft Articles on International Watercourse.¹⁷⁶ Although the ILC Draft Articles have not been formally adopted, they have a significant de facto impact on the practice of riparian states. Indeed, they can serve as a framework and general guide for riparian states in forming multilateral agreements adaptable to their regional and political realities. Parties are given the freedom to “apply and adjust the provisions of the present articles to the characteristics and uses of a particular international watercourse or part thereof.”¹⁷⁷

This freedom of agreement is limited so that it “does not adversely affect, to a significant extent, the use by one or more other watercourse States”¹⁷⁸ Furthermore, the ILC Draft Articles require watercourse states to enter into consultations “with a view to negotiating in good faith for the purpose of concluding a watercourse agreement or agreements.”¹⁷⁹ Consequently, every watercourse state that is significantly affected by the implementation of the proposed agreement would be entitled to participate in the negotiation of the agreement and to become a member of such a multilateral agreement.¹⁸⁰ This provision aims to extend the scope of the agreement to the territory of the concerned state to cope with the agreement’s effects on the watercourse.¹⁸¹

175. See David J. Lazerwitz, *The Flow of International Water Law: The International Law Commission’s Law of the Non-Navigational Uses of International Watercourse*, 1 IND. J. GLOBAL LEGAL STUD. 247, 253 (1993).

176. See *Report of the International Law Commission on the Work of Its Forty-Sixth Session*, U.N. GAOR 49th Sess., Supp. No. 10, at 199, U.N. Doc. A/49/10 (1994) [hereinafter ILC Draft Articles].

177. *Id.* at 206 (draft art. 3, § 1).

178. *Id.* at 206 (draft art. 3, § 2).

179. *Id.* at 206 (draft art. 3, § 3).

180. See *id.* at 215 (draft art. 4).

181. See *id.* at 215 (stating in the commentary that Article 4 allows significantly-affected watercourse states to participate in negotiations to the extent they are affected).

The context of the Treaty appears to be in conformity with the principles forwarded by the ILC Draft Articles.¹⁸² However, this bilateral agreement may raise in the future a controversial claim from Lebanon concerning the spring sources of the Hasbani located in Lebanon territory. Furthermore, a similar claim may also arise with Syria concerning both the spring of the Banias River and part of the Yarmouk River located in Syrian territory. Finally, the Palestinian Authority may seek input over the part of the lower Jordan abutting the occupied West Bank.

The complexity of the hydrological nature of transboundary watercourses will give rise to future claims by neighboring affected riparians, particularly those involved in the Treaty. The primary basis for such claims will be that the use of the watercourse, by Jordan or Israel, "significantly" affects the flow or the quality of the river, therefore entitling them to participate in eventual consultation or even to become members in a larger bilateral agreement.¹⁸³

V. THE ACCORD IN VIEW OF INTERNATIONAL WATER LAW

Examining the procedural requirements for the conclusion of multilateral watercourse agreements is helpful in evaluating the legality of such agreements and their potential effects on neighboring riparians. Hence, this section analyzes the Treaty's provisions in light of the substantive and procedural requirements of the ILC Draft Articles.

Although the Treaty does not make reference to customary law or to the application of any international water law instrument, the drafters were significantly affected by the general legal principals governing international watercourses.¹⁸⁴ In particular, the substantive rules codified by the ILC Draft Articles that relate to equitable utilization and no significant harm principles seem to play a prominent, if not explicit, role in the Treaty.¹⁸⁵ Interestingly, the drafters of the Treaty have adopted both principles to govern

182. See discussion *infra* Part D.

183. See ILC Draft Articles, *supra* note 176, at 215 (draft art. 4).

184. See Wenig, *supra* note 37, at 363.

185. See discussion *supra* Part IV.

the rights and obligations of the parties.¹⁸⁶ As examined subsequently, the ILC Draft Articles seem to mitigate the previous primacy of the no harm rule by incorporating an approach where both duties are examined together in establishing the legal relation between the riparians.¹⁸⁷

A. *Equitable Utilization*

The most fundamental principle of international water law is the duty of equitable and reasonable utilization and participation.¹⁸⁸ This principle emerges from the doctrine of limited territorial sovereignty under which a state has a sovereign right to the waters of the international basin subject to the corresponding sovereign rights of other states. The Treaty does not explicitly mention the expression “equitable utilization.” The only similar language is the “rightful allocation” clause found in Article 6, section 1.¹⁸⁹ However, close examination of the relevant provisions reveals that the drafters intended to implicitly apply the equity doctrine.

Article 5 of the ILC Draft Articles sets out the principle of equitable utilization as not only a right to an equitable allocation but also as a positive duty to reasonably participate in the protection and development of the watercourse. Thus, Article 5 contains the fundamental rights and duties of the riparians. First, the states are to utilize and develop the watercourse in a manner that will result in optimal utilization of the watercourse consistent with its protection.¹⁹⁰ Second, the states should participate and cooperate in an equitable manner, in the use, development, and protection of the watercourse.¹⁹¹

Applying the principle of equitable and reasonable utilization appears to be the best method to solve transboundary conflicts. A proper application of the doctrine requires states to consider several

186. See Wenig, *supra* note 37, at 361.

187. See discussion *infra* Part IV.B.

188. See *id.* at 216 (draft art. 5).

189. See Treaty, *supra* note 15, art. 6, § 1.

190. See ILC Draft Articles, *supra* note 176, at 216 (draft art. 5, § 1).

191. See *id.* at 216 (draft art. 5, § 2).

relevant factors including geographic and ecological factors, social and economic needs of the states, the population's dependence on the watercourse, the effects of the use of the watercourse on another state, existing and potential uses, conservation and economic use, and the availability of the alternatives to a planned or existing use.¹⁹²

The ILC Draft Articles consider the equity and reasonableness in the uses of any particular watercourse and the weight given to each factor, depending on the nature of the specific watercourse.¹⁹³ However, in reaching a conclusion, all of the above-mentioned factors should be considered together as a whole, and no priority should be given to any of them.¹⁹⁴ In fact, Article 10 specifies that “[i]n the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses.”¹⁹⁵ Further, Article 10 adds that in case of conflict between uses of international watercourse, resolutions should be resolved in accordance with Article 5, equitable and reasonable utilization, and Article 7, no appreciable harm with “special regard being given to the requirements of vital human needs.”¹⁹⁶ Indeed, this principle, also found in the Helsinki Rules,¹⁹⁷ encourages flexibility in Article 10's application to specific watercourses.¹⁹⁸ The application of the relevant factors in the context of the Treaty is discussed below.

1. Existing Use versus Natural Attributes

The natural characteristics of an international watercourse constitute only one factor in determining the equitable allocation of its waters. In fact, such characteristics would be significant only in providing a background for the analysis of other relevant

192. *See id.* at 216 (draft art. 6).

193. *See id.* at 216 (cmt. 3).

194. *See id.*

195. *Id.* at 256 (draft art. 10, § 1).

196. *Id.* at 256 (draft art. 10, § 2).

197. Helsinki Rules, *supra* note 172, art. IV (“A use or category of uses is not entitled to any inherent preference over any other use or category of uses.”).

198. *See* Lazerwitz, *supra* note 175, at 260.

factors.¹⁹⁹ For example, states should assess the alternative uses factor by considering how and where water is found in the region.²⁰⁰ By the same token, the relative efficiency of alternative water uses would be determined in light of natural characteristics.²⁰¹

Nevertheless, some argue against the use of natural characteristics to determine equitable allocation and assert that the scarcity of water in a region may require looking beyond those factors. For example, one authority argues that a division based on contribution to the watercourse is inequitable in the particular case of the Jordan Basin.²⁰² Indeed, if Israel were to concede the occupied territories in an eventual peace plan with Lebanon and Syria, Lebanon and Syria would be the major contributors to the Jordan River.²⁰³ However, Lebanon and Syria have the greatest alternative resources and thus the least need for the waters of the Jordan River.²⁰⁴

Another commentator contends that the Palestinians could argue that nature's apportionment would entitle them to the western and northern aquifers in the occupied territories.²⁰⁵ However, that argument is rather weak. For example, Egypt has always depended on water from the Nile but has no claim to the Nile based on natural characteristics, illustrating the weakness in this argument. The suggestion that these waters should be divided on the basis of the natural characteristics of the Nile would radically and inequitably change Egypt's long-lasting dependence on the Nile.²⁰⁶

Some argue that prior and existing uses should be given priority in establishing the equitable utilization of the waters.²⁰⁷ The

199. See Wenig, *supra* note 37, at 349-50.

200. See *id.* at 350.

201. See *id.*

202. See *id.* at 348.

203. See *id.*

204. See *id.*

205. See Elmusa, *supra* note 6, at 235-36.

206. See *generally id.* at 236 ("To suggest that such waters be divided not according to the natural characteristics of the Nile would seem precipitous.").

207. See Wenig, *supra* note 37, at 350.

priority would constitute an assurance and protection of states' existing rights in allocations, thus encouraging them to invest in long-term development projects.²⁰⁸ Israel has always supported the prior and existing use concept during its negotiations, opting for the status quo.²⁰⁹ The prior and existing use concept benefits Israel because it allows Israel to preserve an allocation that it obtained in past decades from its military presence on the river tributaries.²¹⁰

Arguably, this concept would convert the fundamental principle of equitable utilization. One authority supports this supposition by claiming that the doctrine of equitable utilization requires the examination of many factors together as a whole. As a result, it implicitly considers the element of stage of economic development.²¹¹ Indeed, the riparians, particularly the Palestinians, were not in a position to extract larger amounts of water from the common aquifers due to the social and economic conditions prevailing before the 1967.²¹² Further, the prior uses allocations favored by Israel were established unilaterally and without prior notification to Jordan.²¹³

Due to the nature of the Jordan Basin, the two factors of natural characteristics and prior use should not be given dominant importance in the analysis of the doctrine of equitable utilization. Rather, these factors should be referred to, when relevant, as two of many factors to be considered.

2. Social and Economic Needs versus Alternative Resources

Another way to assess water allocation is by looking at the social and economic needs of the states sharing the watercourse.²¹⁴ This method "helps us to view water as a means rather than an end."²¹⁵ Estimating the need requires consideration of the

208. *See id.*

209. *See Elmusa, supra note 6, at 235.*

210. *See id.* at 234.

211. *See id.*

212. *See id.*

213. *See id.*

214. *See ILC Draft Articles, supra note 176, at 231 (draft art. 6, § b).*

215. *Elmusa, supra note 6, at 236.*

population variable.²¹⁶ Article 6 of the ILC Draft Articles lists population as a relevant factor in determining equitable utilization. Population was not listed a factor under the 1991 version.²¹⁷

The population variable was reflected in the Main Plan, in which allocation was related to irrigation water requirements.²¹⁸ However, recent decades have witnessed dramatic changes in the social and geographic parameters of the area. The growing population combined with severe scarcity and a decline in the quality of fresh water has made the water authorities shift their efforts to providing drinkable water to the population.²¹⁹ Indeed, the effects were visible in the significant changes in Israeli agricultural policy: The agricultural sector now accounts for less than 3% of Israel's gross economic product (GEP) and employment.²²⁰

Estimating available water requires the examination of alternative water resources and their comparative costs.²²¹ Alternative water resources include the desalination of brackish groundwater and seawater as well as imported water.²²² Although these additional sources could allow a more equitable allocation, like all other factors, they should not be determinative. Rather, they should be assessed relative to their availability and comparative cost to the concerned riparian, in relation to the riparian's capacity to reach those alternative resources.²²³

Before a state invokes the alternative resource argument against a co-riparian, the state should consider the co-riparian's ability to explore the alternative possibility. The desalination alternative puts Israel in a very advantageous position in the Middle East desalination market due to Israel's advanced technology and ability to

216. *See id.* at 237.

217. *Compare* ILC Draft Articles, *supra* note 176, at 231 (draft art. 6, § c) *with* Draft Articles of the International Law Commission on the Law of Non-Navigational Uses of International Watercourses, Art. 6. [hereinafter 1991 ILC Draft Articles].

218. *See* LOWI, *supra* note 21, at 86.

219. *See* Elmusa, *supra* note 6, at 236-37.

220. *See id.* at 240.

221. *See* ILC Draft Articles, *supra* note 176, at 231 (draft art. 6, § g).

222. *See* Elmusa, *supra* note 6, at 237.

223. *See id.*

afford such alternatives.²²⁴ Interestingly, Israel's awareness of Jordan's inability regarding desalination probably made Israel concede the ten mcm of desalinated water in addition to agreeing to assist Jordan with financing and building desalination facilities.²²⁵ Some experts viewed this concession as a peace gesture by Israel.²²⁶

As for the importation of alternative water, studies have shown that water from water-rich neighbors may fulfill the water needs of another area.²²⁷ For example, Turkey's Peace Canal could supply fresh water to other countries.²²⁸ However, this scheme would put poor countries, like Jordan and Palestine, under the mercy of Turkey or international financial institutions. Although Israel might not be harmed by the arrangement due to its military and economic dominance in the region, other countries like Syria view the project as a threat especially in light of Turkey's expansionist and goals.²²⁹

3. *Optimal Utilization and Cooperation*

The objective that riparian states seek in utilizing an international watercourse is the attainment of optimal utilization consistent with adequate protection of the particular watercourse.²³⁰ This principle, set forth by the ILC Draft Articles, implies "attaining maximum possible benefits for all watercourse States and achieving the greatest possible satisfaction of all their needs, while minimizing the detriment to, or unmet needs of, each."²³¹ Thus, the optimal utilization objective goes beyond achieving the most economic, technological, or efficient use of

224. *See id.*

225. *See Treaty, supra note 15, Annex II, art. I, § 2(d).*

226. *See Wenig, supra note 37, at 341 (stating that the agreement to cooperate in the procurement of an additional 50 mcm/yr of drinkable water for Jordan was a peace gesture by Israel).*

227. *See LONERGAN & BROOKS, supra note 63, at 182.*

228. *See id.*

229. *See id.* at 185.

230. ILC Draft Articles, *supra note 176, at 218 (draft art. 5, § 1).*

231. *Id.* at 219 (draft art. 5, cmt. 3).

water. Rather, the objective should focus on the long-term development and protection of every party's interests.²³²

Examining equitable use from such a perspective involves consideration of the efficiency, conservation, economy of use, development and protection²³³ of the watercourse within the respective territory of the riparians. This perspective also should involve regional cooperation because the system of surface waters constitutes a "unitary whole . . . by virtue of their relationship."²³⁴ Thus, efficiency and economy of use can be reached only through the participation of all riparian states.²³⁵

On the whole, international water law tends to address the efficiency of existing uses and allocations,²³⁶ while ILC Draft Article 10 emphasizes a "special regard" for "vital human needs."²³⁷ Thus, through cooperation, existing allocations would satisfy equity principles by responding to existing demand.²³⁸ Reaching equity in transboundary water allocations requires increasing conservation and efficiency, improving watercourse management and protection and adapting economic structures to satisfy water needs.²³⁹

The Treaty places great emphasis on cooperation and joint regional management in matters related to storage, development of existing resources, desalination, additional water,²⁴⁰ and prevention of contamination.²⁴¹ Further, the Treaty addresses the unitary and regional aspect of the watercourses by implementing a duty to cooperate in transboundary water matters.²⁴² The emphasis on cooperation is also reflected in the establishment of the Joint Water Committee.²⁴³

232. See discussion *supra* Part V.A.

233. See *id.* at 231 (draft art. 6, § f).

234. *Id.* at 199 (draft art. 2, § b).

235. See Wenig, *supra* note 37, at 352.

236. *Id.*

237. ILC Draft Articles, *supra* note 176, at 256 (draft art. 10, § 2); see *id.* at 353.

238. See Wenig, *supra* note 37, at 353-54.

239. See *id.* at 354.

240. The additional 50 mcm is allocated to Jordan. See Treaty, *supra* note 15, Annex II, art. I, § 3.

241. See *id.* art. 6.

242. See *id.* art. 6, § 4; see also *id.* Annex II, art. VI (regarding cooperation).

243. See *id.* Annex II, art. VII.

Furthermore, the Treaty places a significant emphasis on cooperation in the management, development, and protection of the shared water and need to cope with the existing and potential needs of the riparians.²⁴⁴ Emphasis on the regional aspect of the issue and the necessity of cooperation raise the question of whether the Treaty is a step toward the community of interest doctrine.

B. No Significant Harm

In expanding the substantive protection of the usage of international rivers, ILC Draft Article 7 embodies the *sic utere* principle of international law that requires riparians to exercise due diligence to prevent causing significant harm to co-riparians.²⁴⁵ The ILC Draft Articles differ from the 1991 Draft Articles by using the term “significant” instead of “appreciable,” which has the dual meaning of “measurable” or “significant.”²⁴⁶ The goal of the Commission was not to raise the standard but to create a standard that would require states to present objective evidence of a “real impairment of use.”²⁴⁷

The 1991 Draft Articles also gave primacy to the no significant harm rule by prioritizing the right of equitable use below the duty not to cause harm.²⁴⁸ Although the 1994 version does not reverse the rule of the 1991 Draft Articles, the later version mitigates the rule by imposing the due diligence obligation on the states’ conduct as opposed to basing the obligation on the result of that conduct.²⁴⁹ Thus, a breach of obligation has occurred when a state has intentionally or negligently caused or failed to prevent an event that could have been avoided.²⁵⁰ In other words, “the fact that an activity involves significant harm would not of itself necessarily constitute a basis for barring it.”²⁵¹

244. See *id.* Annex II, art. VI.

245. See ILC Draft Articles, *supra* note 176, at 236 (draft art. 7).

246. *Id.* at 211 (draft art. 3, cmts. 14-15).

247. *Id.* at 211 (draft art. 3, cmt. 14).

248. See *id.* at 236-37 (draft art. 7, cmts. 1-5).

249. See ILC Draft Articles, *supra* note 176, at 236 (draft art. 7, cmt. 4).

250. See *id.*

251. *Id.* at 236 (draft art. 7, cmt. 2).

A state can remedy a breach of due diligence by fulfilling the consultations requirement in the 1994 version of Article 7. If the states have not otherwise agreed to the use, the state causing the harm must consult with the harmed state.²⁵² This requirement enhances the possibility that the states would resolve the problem by agreement. If the consultations fail, the states may resort to third party dispute resolution mechanisms.²⁵³

By the same token, whether a showing of due diligence and equitable utilization would relieve the harmful state from its duty under Article 7 is not clear.²⁵⁴ This type of showing might be useful only in a dispute settlement with an opponent. At the same time, some kinds of significant harms may never be excused as equitable. The ILC clarified this point when it stated that “a use which causes significant harm to human health and safety is understood to be inherently inequitable and unreasonable.”²⁵⁵ In sum, these two principles should seemingly be applied together. As McCaffrey argues, “one could conclude that even if it is established that the harming state’s use is equitable and reasonable, consultations must continue over the possibility of ad hoc adjustments to the harming state’s use and the question of compensation.”²⁵⁶

The Treaty mentions the no significant harm duty in several places. Article 6, section 2 of the Treaty states that “[t]he parties . . . jointly undertake to ensure that the management and development of their water resources do not, in any way, harm the water resources of the other party.”²⁵⁷ Several other references to the no significant harm rule are in Annex II.²⁵⁸ In particular, one

252. See *id.* at 236 (draft art. 7, § 2).

253. See *id.* at 236 (draft art. 7, § 2).

254. See *id.* at 236 (draft art. 7).

255. *Id.* at 242 (draft art. 7, cmt. 14).

256. Stephen S. McCaffrey, *The International Law Commission Adopts Draft Articles on International Watercourses*, 89 AM. J. INT’L L. 395, 400 (1995).

257. Treaty, *supra* note 15, at art. 6, § 2.

258. See *id.* Annex II, art. 2, § 2; Annex II, art. 3, § 1; Annex II, art. 3, § 6.

provision charges the Committee with the responsibility of surveying existing uses for the prevention of appreciable harm.²⁵⁹

Despite the Treaty's recognition of the doctrine of no significant harm, some provisions do not fully conform with the doctrine. For instance, the diversion of saline water from springs on the Upper Jordan into the Kinneret may be equitable in terms of allocation. However, such a diversion could cause significant harm because it will affect the quality of the water available to Jordan for withdrawal from the Lower Jordan.²⁶⁰ The same argument applies to the over-extraction of the underground water from aquifers: Over-extraction damages the aquifers, reduces their productivity, and allows for the intrusion of sea-water, thereby harming the quality of the aquifer waters.²⁶¹

C. Procedural Duties

The ILC Draft Articles contain several provisions dictating procedural duties for the riparians. First, Article 12 requires notification of any plan that might have a significant adverse impact upon other states.²⁶² Notified states have six months to study and assess potential effects of the plan.²⁶³ Second, the ILC Draft Articles introduce the obligation to exchange important data²⁶⁴ and include a new provision on dispute settlement, applying to "any watercourse dispute concerning a question of fact or the interpretation or application of the present articles."²⁶⁵

The Treaty also contains a specific provision on notification and agreement concerning artificial changes made on the course of the Yarmouk or the Jordan.²⁶⁶ As in the ILC Draft Articles, each country has the obligation to notify the other within six months of

259. See *id.* Annex II, art. I, § 2(c). The Treaty uses the expression "no appreciable harm" instead of "no significant harm." This difference probably results from the drafters' reliance on the 1991 ILC Draft Articles. See *id.* at art. 30.

260. See Wenig, *supra* note 37, at 362.

261. See *id.*

262. See ILC Draft Articles, *supra* note 174, at 260 (draft art. 12).

263. See *id.* at 267 (draft art. 13).

264. See *id.* at 269 (draft art. 14).

265. *Id.* at 322 (draft art. 33).

266. See Treaty, *supra* note 15, Annex II, art. V, § 1.

any intended project that is likely to affect the flow or the quality of the shared rivers.²⁶⁷ The time period allows for consultations and discussions through the Committee in order to prevent, or at least mitigate, the impact of the proposed project.²⁶⁸ Similarly, the Treaty creates the obligation to exchange information concerning any proposed project through the Committee.²⁶⁹

Although the Treaty covers the basic procedural requirements established by the ILC Draft Articles, the Treaty is missing a crucial stipulation governing dispute settlement between riparians. That omission may reflect the climate surrounding the negotiations, in that the parties may have chosen to forgo such a pessimistic provision in order to accelerate the agreement. The accord does not provide for any resolution mechanism in case of failure of the agreement. This loophole could allow one state to disregard the opposition of its neighbor and continue with its project upon expiration of the Treaty-mandated six month deadline. On the other hand, this issue simply might have been left for future determination by the Committee.

VI. FINAL ANALYSIS

The primary objective of the ILC Draft Articles is to provide a flexible framework for the parties to reach a suitable agreement for the particular nature of their shared watercourse. Similarly, the doctrine of equitable utilization is a flexible legal principle that can be met by balancing the different relevant factors that the ILC forwarded. However, equitable utilization is subject to a significant limitation; namely the duty not to cause a significant harm to a co-riparian.

The best approach to fulfill these international legal principles would be to consider the equitable utilization and no significant harm principles simultaneously as a continuous source of rights and obligations and to weigh their related factors with an equal and dependent group of parameters. This approach would allow

267. See *id.* § 2; ILC Draft Articles, *supra* note 176, at 260 (draft art. 12).

268. See Treaty, *supra* note 15, Annex II, art. V, § 2.

269. See *id.* Annex II, art. VI, § 1.

the parties to reach an optimal utilization of their resources by assuring efficiency, economy of use, protection, and development.

Nonetheless, international water law has witnessed the rise of the community of interest theory by way of a transition from the right of equitable utilization to a duty of equitable participation. This transition is due to the fact that the theory of equitable utilization requires only a right of equitable apportionment among parties, subject to the duty not to cause significant harm to the neighboring state. However, it does not assure any cooperation among riparians. This modern trend favors the management of a transboundary watercourse as one economic and geographic unit regardless of the artificial international boundaries. This trend takes into account the urgent need for cooperation imposed by the current alarming scarcity.

The community of interest doctrine is reflected in the principles adopted in the Treaty. Based on the substance of the Treaty, the drafters apparently were aware of the inherent realities of the issue. The importance accorded to cooperation among the parties in various fields of water management and protection affirms this observation. Finally, the Treaty emphasizes the importance of dealing with water issues on a regional scale, thus involving the neighboring states as the only way to reach a complete and lasting agreement.

VII. CONCLUSION

International law has proven to be a key factor in determining the rights and duties of the riparian states. Reaching an agreed framework for the dealings of these states is an important economic and political issue. However, international law remains only one of several tools governing the relations of the international community.

Unfortunately, history bears witness to the reality that law by itself can neither resolve the long-lasting disputes among the states nor respond to the vital needs of humanity. Indeed, law has failed to prevent conflicts, avoid genocide, or feed the hungry. Therefore, determining how international law could assist in supplying humanity with water is difficult. Although laws have always been a means of assuring and enforcing justice, they have never been in

and of themselves a tool sufficient to do so. Indeed, the existence of justice relies on the efforts of individuals who have an influence on the faith of their peers. Thus, the goal of more universal justice must begin with a sense of justice in the minds of the leaders changing the course of history.

Present peace negotiations have had fierce opposition among negotiators, leading sometimes to considerable concessions in terms of land, water, and other human and social resources. As such, the peace negotiations are presently taking a bilateral trend. Although this trend may accelerate and facilitate agreements between the states on certain matters, such negotiations could also result in short-sighted resolutions of vital matters—like the allocation of water—that should otherwise be treated on a larger, regional scale in order to maintain stability in the area and assure peace.²⁷⁰ Further, the possibility of importing water from Turkey or the Nile, as well as large-scale desalination projects, offer great promise as significant alternative water resources. However, these options could have a greatly adverse impact on poorer countries by placing them at the mercy of the supplying states or of those possessing greater technology and economic power. This consequence could make water the most precious commodity of Middle East in the twenty-first century.

In order to avoid such potential dangers, the parties have to cope with the problem on a regional scale, taking into account the needs and the capacities of all parties. This goal would be best reached through the implementation of a permanent institution with a legal and technical framework, such as a regional Joint Water Committee that would ensure the achievement of such a crucial task.

270. For example, Israel could argue that under a regional plan Jordan or Palestine should have access to Syria's or Lebanon's water resources.

VIII. APPENDIX A

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VIX. APPENDIX B

Treaty of Peace, Oct. 26, 1994, Israel-Jordan 34 I.L.M. 43, art.6

With the view to achieving a comprehensive and lasting settlement of all the water problems between them:

1. The Parties agree mutually to recognise the rightful allocations of both of them in Jordan River and Yarmouk River waters and Arab Arava ground water in accordance with the agreed acceptable principles, quantities and quality as set out in Annex II, which shall be fully respected and complied with.

2. The Parties, recognising the necessity to find a practical, just and agreed solution to their water problems and with the view that the subject of water can form the basis for the advancement of co-operation between them, jointly undertake to ensure that the management and development of their water resources do not, in any way, harm the water resources of the other Party.

3. The Parties recognise that their water resources are not sufficient to meet their needs. More water should be supplied for their use through various methods, including projects of regional and international co-operation.

4. In light of paragraph 3 of this Article, with the understanding that co-operation in water-related subjects would be to the benefit of both Parties, and will help alleviate their water shortages, and that water issues along their entire boundary must be dealt with in their totality, including the possibility of trans-boundary water transfers, the Parties agree to search for ways to alleviate water shortages and to co-operate in the following fields:

a. development of existing and new water resources, increasing the water availability, including cooperation on a regional basis as appropriate, and minimising wastage of water resources through the chain of their uses:

b. prevention of contamination of water resources:

c. mutual assistance in the alleviation of water shortages:

d. transfer of information and joint research and development in water-related subjects, and review of the potentials for enhancement of water resources development and use.

5. The implementation of both Parties' undertakings under this Article is detailed in Annex II.²⁷¹

271. Treaty, *supra* note 15, art. 6.

WATER, WATER, EVERYWHERE, BUT NOT ENOUGH TO DRINK?: A LOOK AT WATER SUPPLY AND FLORIDA'S GROWTH MANAGEMENT PLAN

DANA L. CROSBY*

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I. INTRODUCTION

*Water historically has been viewed as a problem in the state of Florida, not a resource.*¹

When Florida's State Comprehensive Plan was enacted in 1985,² legislators included a provision requiring the state to provide an adequate water supply and improved water quality.³ Unfortunately, local government plans mandated by the Local Government Comprehensive Planning and Land Development Regulation Act⁴ have not addressed water supply issues in a

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1. Pat Leisner & Ron Word, *Water Fight: Floridians Move to Save Their Dwindling Supplies*, CHI. TRIB., Sept. 21, 1994, at 8 (quoting Richard Hamann, University of Florida Water Specialist).

2. 1985 Fla. Laws ch. 85-57, § 1 (codified at FLA. STAT. §§ 187.101-.201).

3. FLA. STAT. § 187.201(8)(a) (1995) provides:

Florida shall assure the availability of an adequate supply of water for all competing uses deemed reasonable and beneficial and shall maintain the functions of natural systems and the overall present level of surface and ground water quality. Florida shall improve and restore the quality of waters not presently meeting water quality standards.

Id.

4. *Id.* § 163.3161.

sufficiently integrated fashion. These plans are often criticized for concentrating on the availability of water facilities instead of addressing the adequacy of the actual water supply status in a particular region.⁵ In other words, Florida has moved from the realm of *planning* for water supply use to simply *regulating* water consumption.⁶

Serious consequences, such as dried-up lakes, damaged wetlands, and tainted water supplies, have resulted from the lack of an integrated land use and water supply plan.⁷ Such ad hoc planning and development has heavily impacted the whole of Florida's water resources.⁸ Although water policy is specifically addressed in the State Comprehensive Plan,⁹ the "tie between land and water planning is a significant 'missing link' in Florida's growth management planning process."¹⁰ In fact, some observers claim that the only apparent connection between comprehensive planning and water supply policy is the state's permitting requirement.¹¹

Until recently, the cumulative impact of development on water supply went unnoticed. Now the crises created by uncoordinated water supply planning practices have become painfully obvious in some regions of Florida. To study the water issue in more depth, state government leaders developed the Land Use and Water Plan-

5. See TASK FORCE ON LAND USE AND WATER PLANNING, FINAL REPORT 2 (1994) [hereinafter TASK FORCE REPORT].

6. See STAFF OF FLA. H.R. SELECT COMMITTEE ON WATER POLICY, WATER SUPPLY POLICY CONSIDERATIONS: INTERIM PROJECT REPORT 5 (Dec. 1995) [hereinafter HOUSE REPORT].

7. See *id.* at 6 (discussing the consequences of Florida's water supply problems); see also Leisner, *supra* note 1, at 8 (reporting that thousands of acres of lakes and wetlands dry up as the demand for water increases).

8. See HOUSE REPORT, *supra* note 6, at 6 (stating that water management practices have resulted in conditions in which the demand exceeds the sustainable water supply).

9. FLA. STAT. § 187.201(8)(a) (1995).

10. TASK FORCE REPORT, *supra* note 5, at 1 (quoting the Third Environmental Land Management Study Committee's 1992 Report); see also FLORIDA DEP'T OF ENVTL. PROTECTION ET AL., 1995 FLORIDA WATER PLAN 10 (1995) [hereinafter FLA. WATER PLAN] (stating that inadequate links between land and water planning and between planning and program implementation result in conflicts and inefficiencies in these planning programs).

11. See HOUSE REPORT, *supra* note 6, at 5. Permits for water use are required except for domestic consumption by individual users. See *id.* (citing FLA. STAT. ch. 373 (1995)); see also Roy Kenneth Pace II, *The Year of Water*, FLA. SPECIFIER, Jan. 1996, at 22.

ning Task Force in 1993, the Florida House Select Committee on Water Policy in 1994, and the Florida Senate Select Committee on Water Policy in 1995.¹² Innumerable proposals and recommendations on the subject of water supply have subsequently emerged but have added very little new information to this subject.¹³

Florida has five water management districts created in response to the Florida Water Resources Act of 1972.¹⁴ In addition, a twenty-one member Water Management District Review Commission was created in 1994 to comprehensively review Florida's system of regional water management.¹⁵ The Commission presented several recommendations in a December 1995 report, and the process was finalized in early 1996.¹⁶ Although 1996 was expected to be a busy year for Florida water policy legislation, the Legislature passed few such laws during this session.¹⁷

This article addresses water supply and planning laws, exploring the nexus between the assessment of available water supply when engaging in local and regional planning and the consequences resulting from failure to perform such an assessment. Current recommendations designed to alleviate present and future

12. Select Committees are created at the prerogative of the speaker of the House and the President of the Senate.

13. See also HOUSE REPORT, *supra* note 6, at 35 (discussing how other reports on water policy consistently highlight the need to develop and implement functional water supply plans, to compile the necessary data to determine a sustainable yield, and to integrate land and water use planning). See generally TASK FORCE REPORT, *supra* note 5, at 35-43 (recommending ways to improve Florida's water supply policy).

14. 1972 Fla. Laws ch. 72-299 (codified at FLA. STAT. ch. 373 (1995)).

15. 1994 Fla. Laws ch. 94-270 (codified at FLA. STAT. § 373.069 (1995)).

16. See WATER MANAGEMENT DISTRICT REVIEW COMM'N, BRIDGE OVER TROUBLED WATERS: RECOMMENDATIONS OF THE WATER MANAGEMENT DISTRICT REVIEW COMM'N attachment 2 (1995) [hereinafter WMDRC REPORT]. Recommendations and comments on the work of the Water Management District Review Commission were presented before the Florida Senate Select Committee on Water Policy on January 8, 1996. See *id.*

17. Three bills warrant discussion. On January 10, 1996, the Senate Natural Resources Committee discussed Senate Bill 10, proposed by Florida Senator Buddy Dyer (D-Dist. 14). This bill provided for classification and assessment of high-water recharge lands in counties choosing to have a high-water recharge tax assessment program and was withdrawn March 5, 1996. See Fla. SB 10 (1996). Florida Senator Charles Williams (D-Dist. 4) introduced Senate Bill 638, which revised certain criteria for water resources permitting. See Fla. SB 638 (1996). A companion bill, Committee Substitute for House Bill 1887, passed the Legislature in the 1996 session. See 1996 Fla. Laws ch. 96-370 (to be codified at FLA. STAT. § 373.019).

water supply problems are highlighted and presented throughout this article. By way of introduction, Part II of this article provides background on Florida's water situation. Part III gives an overview of pertinent state and local growth management plans. Part IV analyzes the potential benefits resulting from integrating state, regional, and local planning efforts with those of the water management districts and alternative sources of water supply and conservation. Part V examines a few of the major difficulties directly affecting Florida's water supply: population growth, demographics, agriculture, and pollution. This article concludes with recommendations, which generally follow the policies expounded in the State Comprehensive Plan for alleviating many of the state's current water supply problems.

II. FLORIDA'S HISTORICAL WATER SUPPLY

*Water is to Florida what oil is to Saudi Arabia.*¹⁸

Several years ago, then-Governor Bob Martinez highlighted the idea of an "empty water tap" to illustrate the need for growth management and water conservation in Florida.¹⁹ Since then the state's water scenario has worsened. A few specific issues that lawmakers, policymakers, and academics have focused on include: the relative non-accountability of the water management districts,²⁰ Florida population growth rate of approximately 250,000 new residents per year,²¹ groundwater contamination from leaking petroleum storage tanks and pollution, particularly in environmentally sensitive areas such as the Everglades,²² and a lack of water supply concurrency between state, regional, and local growth management plans.²³

Water conservation goals and plans do not go unsupported by the citizens of Florida.²⁴ An opinion poll dating back to the inception of the State Comprehensive Plan reveals that an average of 83% of all Floridians surveyed agreed that water conservation is essential in Florida.²⁵ Current polls reflect a continued public

18. Charley Reese, *Florida Hits Panic Button to Conserve*, ORLANDO SENT., July 15, 1990, at G1 ("Destroy that water by excessive use and pollution and every economic pillar holding up the state—tourism, agriculture, retirement and real estate—will collapse.").

19. *See id.*

20. *See* HOUSE REPORT, *supra* note 6, at 1.

21. *See* TASK FORCE REPORT, *supra* note 5, at 1 (noting approximately 685 new residents enter Florida each day).

22. *See* HOUSE REPORT, *supra* note 6, at 6.

23. *See id.* (stating that localities are independently developing water supply systems without the benefit of a comprehensive regional water supply plan or planning process that would determine the most cost-effective system for all users in a region); *see also* FLA. STAT. § 163.3180 (1995) (stating that "[r]oads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and mass transit . . . are the only public facilities and services subject to the concurrency requirement on a statewide basis.").

24. *See* Lance deHaven-Smith, *Environmental Publics: Public Opinion on Environmental Protection and Growth Management*, 1987 LINCOLN INST. OF LAND POL'Y 22 (reporting statistics from an opinion poll on selected growth management issues, including water conservation).

25. *See id.* The poll divided the state into three regions: Northern, Central, and Southern Florida, with 78%, 82%, and 88%, respectively, supporting water conservation. *See id.*

awareness of the need for water conservation, especially in the more water-strapped regions of Florida.²⁶

A brief overview of geology and terminology is necessary to properly understand Florida's water system. The continuous movement of water over the Earth's surface is described as the hydrologic cycle,²⁷ which begins with the evaporation of water by the sun.²⁸ The water then becomes precipitation and falls back to the Earth.²⁹ Water aquifers are recharged when water enters the aquifer from the surface during the hydrologic cycle.³⁰ Florida has several of these groundwater aquifer systems that provide the majority of the state's water supply.³¹ Because some regions are more conducive to replenishment, dramatic differences exist between the aquifers' recharge capacity throughout the state.³² For example, South Florida, the East Coast, and Pinellas County generally have no recharge capacity, and the area just south of the heavily populated Tampa region has very low recharge capacity.³³ Areas of high or moderate recharge capacity are located throughout the central portion of Florida and the panhandle.³⁴

III. OVERVIEW OF THE STATE AND LOCAL GROWTH MANAGEMENT PLANS

26. See Prakash Gandhi, *Southwest District's Survey a Gauge of Public Sentiment on Water Supply Issues*, FLA. SPECIFIER, Oct. 1995, at 15. Seventy-eight percent of those surveyed by the Southwest Florida Water Management District would support restrictions to encourage people to use less water in their homes. Seventy-five percent said they would use alternative water sources if it would protect the environment and ensure adequate sources of water in the future. Finally, sixty percent said the most important reason for conserving water is to sustain the existing water supply. See *id.*; Wes Platt, *Public Rallies to Save Water*, ST. PETE. TIMES, June 19, 1994, at 1B (discussing a water conservation rally in northwest Hillsborough County).

27. See ED LANE, FLORIDA'S GEOLOGICAL HISTORY AND GEOLOGICAL RESOURCES 43 (1994) [hereinafter FLA. GEO. SURVEY].

28. See *id.*

29. See *id.*

30. See *id.*

31. The Floridan Aquifer, underlying the majority of Central and Northern Florida, is one of the world's most productive aquifers. See *id.*

32. See FLA. WATER PLAN, *supra* note 10, at 19. Central West and South Florida are described as water caution areas in this report. See *id.*

33. See *id.* at 43.

34. See *id.*

*I do not believe Florida has a water policy. It has a number of water empires and would-be emperors, but no comprehensive policy.*³⁵

Florida is recognized as a national leader in comprehensive planning.³⁶ With the adoption of its Local Government Comprehensive Planning and Land Development Act in 1975,³⁷ the Florida Legislature required that each local government adopt a plan to make future growth decisions consistent with the Act.³⁸ Future water supply needs and water conservation were to be included in the local plan.³⁹ However, the plan gave local governments no funding and only minimal guidelines.⁴⁰

The State Comprehensive Plan, adopted in 1985,⁴¹ is now the cornerstone of Florida's integrated planning system.⁴² Once the state plan originated, the Local Government Comprehensive Planning Act received substantial updating, thus strengthening its consistency requirements.⁴³ While these changes have provided funding to local governments and guidance to local planners,⁴⁴

35. Leisner, *supra* note 1, at 8 (quoting Jeb Bush, 1994 Republican gubernatorial candidate).

36. See Thomas G. Pelham, *Adequate Public Facilities Requirements: Reflections on Florida's Concurrency System for Managing Growth*, 19 FLA. ST. U. L. REV. 973, 974 (1992).

37. 1975 Fla. Laws 75-257, § 4. (codified at FLA. STAT. § 163.31 (1995)).

38. See FLA. STAT. 163.3167(2) ("Each local government shall prepare a comprehensive plan of the type and in the manner set out in this act or shall prepare amendments to its existing comprehensive plan to confirm it to the requirements of this part in the manner set out in this part."); see also TASK FORCE REPORT, *supra* note 5, at 8.

39. See FLA. STAT. § 163.3177(6)(d) (1995). The comprehensive plan shall include:

A conservation element for the conservation, use, and protection of natural resource in the area, including air, water, water recharge areas, wetlands, waterwells, estuarine marshes, soils, beaches, shores, flood plains, rivers, bays, lakes, harbors, forests, fisheries and wildlife, marine habitat, minerals, and other natural and environmental resources. Local governments shall assess their current, as well as projected, water needs and sources for a 10-year period.

Id.

40. See Department of Community Affairs Secretary Jim Murley, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author) [hereinafter Murley].

41. 1985 Fla. Laws 85-57, § 1 (codified at FLA. STAT. §§ 187.101-.201 (1995)).

42. See TASK FORCE REPORT, *supra* note 5, at 1.

43. See *id.* at 8.

44. See Murley, *supra* note 40.

concurrency between state, regional, and local entities in the area of water supply continues to be problematic.⁴⁵

As late as 1987, no adequate data on water supply was available to local governments.⁴⁶ The result was years of comprehensive plan review by the Florida Department of Community Affairs, which lacked the water supply data it needed to sufficiently complete this portion of their task.⁴⁷ In hindsight, adequate water supply data and an ability to serve future needs, not just the availability of adequate public facilities, prove to be critical components of the review process.⁴⁸

Florida's water supply problem is exacerbated by the failure to formally integrate local land use decisions and regional water availability within the current growth management process.⁴⁹ Despite a concurrency requirement that local plans include an adequate water supply,⁵⁰ local governments often plan without regard for the supply needs of regionally located entities dependent on the same water supply.⁵¹ The cumulative impact of this disjointed planning process may be undetected in the critical early planning stages of water supply, resulting in serious problems later in the process.⁵²

45. See generally HOUSE REPORT, *supra* note 6, at 6 (discussing the attempt of localities to explore the development of alternative water supply systems without the benefit of a comprehensive regional water supply plan).

46. See Murley, *supra* note 40; see also TASK FORCE REPORT, *supra* note 5, at 2.

47. See Murley, *supra* note 40.

48. See TASK FORCE REPORT, *supra* note 5, at 2.

49. See *id.* at 25; see also Juanita Greene, *State Water Woes Stems From Dearth of Courage, Not Water*, FLA. ENVIRONMENTS, Jan. 1996, at 24.

50. See FLA. STAT. § 163.3180(2)(a) (1995) (requiring that adequate public facilities and services be available concurrent with the impact of development); see also FLA. ADMIN. CODE r. 9J-5.0055(3)(a)(1) (1994) (requiring that necessary water facilities be in place and able to serve a new development at the time the development order or permit is issued).

51. See TASK FORCE REPORT, *supra* note 5, at 25.

52. See *id.*; see also THE GOVERNOR'S COMM'N FOR A SUSTAINABLE SOUTH FLORIDA: INITIAL REPORT 39 (1995) [hereinafter SUSTAINABLE S. FLA. REPORT]. This task is more ominous than it may seem at first glance. For example, Florida has 67 counties and over 400 local government units in Florida. The Commission report indicates that approximately 200 different plans are being developed and are devoted exclusively to the management of water resources at the federal, state, local, tribal, and regional levels in South Florida alone. The Commission also reports that there is no consistency, coordination, or consensus regarding South Florida's options in this area. See *id.*

The Florida Legislature has taken steps to rectify integration problems. Because the local comprehensive plan is the “primary focus” for both water management and land use, the Legislature greatly expanded the Intergovernmental Coordination Element for each local plan in 1993.⁵³ Despite such legislative action, the decisions of the water agencies have no clear link to the local comprehensive plans, largely because the state, as opposed to the local government, controls water allocation.⁵⁴

Future comprehensive plan amendments that emerge from local planning offices throughout Florida should receive broader review. Components, such as water resources and supply and the Coastal Zone Management Plan, must receive consideration along with local governmental coordination of water supply data.⁵⁵ The water management districts and DEP need to provide more detailed data to local governments for comprehensive planning purposes, and approval of future Local Comprehensive Plan amendments should involve the assessment of this data.⁵⁶

53. See TASK FORCE REPORT, *supra* note 5, at 35.

54. The Department of Environmental Protection (DEP) and the water management districts control the allocation of water. See TASK FORCE REPORT, *supra* note 5, at 1.

55. See Murley, *supra* note 40.

56. See *id.*

IV. THE ROLE OF THE WATER MANAGEMENT DISTRICTS

*Marrying the water districts, created some years ago, to the statewide growth management plan . . . will help manage the state's growth and water supply*⁵⁷

Five geographically drawn water management districts in Florida regulate, manage, conserve, develop, and provide for the proper use of Florida's surface and ground waters.⁵⁸ Specifically, water management districts protect against flooding and manage natural resources, water supply, and water quality.⁵⁹ Policy guidelines, implementation strategies, and other guidance emerging from the water management districts are generally considered the most comprehensive sources of water data available to local and regional planners.⁶⁰ Though currently engaged in district-wide planning, the water management districts may play a greater role in future local planning processes.⁶¹

57. Reese, *supra* note 18, at G1 (quoting Greg Parker, Florida state employee and drinking water specialist).

58. See FLA. STAT. § 373.069 (1995); see also TASK FORCE REPORT, *supra* note 5, at 2. Florida's five water management districts were drawn along hydrologic lines and are: Northwest Water Management District (covering the panhandle region of Florida); the Suwannee River Water Management District (covering roughly the area between Tallahassee and Gainesville); the St. Johns Water Management District (covering the central and northern portion of Florida, on the East Coast); the Southwest Florida Water Management District (covering the central West coast of Florida); and the South Florida Water Management District (covering the southern portion of Florida). See FLA. STAT. § 373.069 (1995).

59. See FLA. ADMIN. CODE r. 62-40.510(2)(b) (1994) (requiring DEP to create a Florida Water Plan, which must be developed in coordination with District Water Management Plans and must include goals and responsibilities with respect to protection and management controls of water supplies, floods, water quality, and natural systems).

60. See TASK FORCE REPORT, *supra* note 5, at 24 (reporting that *Florida Administrative Code* rule 62-40.520 lists planning data to be included in the district water management plans as specific policy guidance regarding regional water supply, flood protection, water quality, and natural resources; policies to protect, enhance or improve regional water resources, water areas, and water restoration efforts; and the natural resources of regional significance, identified by geographic location).

61. See TASK FORCE REPORT, *supra* note 5, at 30-36 (making recommendations for the assistance of water management districts to regional planning councils and local governments); see also HOUSE REPORT, *supra* note 6, at 39 (recommending the development of a supply plan by the water management districts for each of their planning areas).

Over the years the water management districts have been increasingly criticized by those in the public and private sector.⁶² This criticism originates from the relative non-accountability of the water management districts and from the districts' taxing, rulemaking, and water rationing authority.⁶³ One problem is the districts' authority to levy ad valorem taxes.⁶⁴ Another is the differing regulation and planning among the districts due to the differences in population, water resource availabilities, flood controls, and the economic bases of the districts.⁶⁵

Recently, upon completion of their comprehensive review of Florida's water management system, the twenty-one member Water Management District Review Commission (WMDRC) raised a number of salient points and suggestions.⁶⁶ These findings were reported to the Florida Legislature in early 1996.⁶⁷ First, the WMDRC recognizes that all future land use decisions consider anticipated water supply problems.⁶⁸ The water management districts acquire a large amount of public land in Florida,⁶⁹ and the

62. See Leisner, *supra* note 1, at 8 (stating that the work of the water districts has been criticized by homeowners, environmentalists, and politicians alike).

63. See HOUSE REPORT, *supra* note 6, at 1. "There is a relative absence of programmatic supervision of the water management districts resulting in a water management system that is regional in nature with only minimal state oversight." *Id.*

64. See FLA. CONST. art. VII, § 9 (authorizing the districts to levy ad valorem taxes). Four water management districts are authorized to levy up to 1.0 mill (\$1.00 tax per \$1000 of assessed property value). The Northwest Water Management District is authorized to levy up to 0.05 mill. See, e.g., FLA. STAT. §§ 373.171-.175 (1995).

65. See FLA. WATER PLAN, *supra* note 8, at 1. For example, due to differing recharge capabilities, the northern part of Florida remains more water-rich than the south, which is more heavily dependent on rainfall. See Leisner, *supra* note 1, at 8. See generally FLA. GEO. SURVEY, *supra* note 27 (discussing Florida's hydrologic system).

66. See WMDRC REPORT, *supra* note 16, at 2-3.

67. See *id.* at 3.

68. See *id.* at 19 (recommending an amendment to section 163.3177(6)(a), *Florida Statutes* that would require consideration in a future land use plan of "the present and future availability of water supply"); see also Former Florida Senator Philip D. Lewis, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author).

69. See WMDRC REPORT, *supra* note 16, at 32 (recommending continued funding for public land acquisition under the Florida Preservation 2000 Act); see also FLORIDA SENATE NATURAL RESOURCES COMMITTEE, A REVIEW OF STATE LAND ACQUISITION AND LAND MANAGEMENT PROGRAMS 2 (1995) [hereinafter P-2000 REPORT]. Thirty percent of all P-2000 funds go to the water management districts for land acquisition. See *id.*

WMDRC further recommends implementation of a more efficient land acquisition and conservation program⁷⁰ and utilization of a shared responsibility concept in land use planning and water supply management by the Governor, Florida Legislature, water management districts, DEP, and local governments.⁷¹ Finally, the WMDRC considers legislative oversight of the water supply issue imperative due in large part to the nexus between water supply and land management practices.⁷²

Some have criticized the WMDRC's work as overly protective of agricultural interests and insufficiently protective of environmental interests.⁷³ In addition, the Legislature implemented virtually no water legislation during its 1996 session. With the 1997 Legislative Session fast approaching, numerous bills concerning water issues can be expected in light of continuing regional difficulties in the area of water supply.

V. POPULATION GROWTH AND POLLUTION

*As Florida's population increases, the demands on water will continue to increase There is no easy answer to this question and beware of anyone who has an easy answer.*⁷⁴

70. See WMDRC REPORT, *supra* note 16, at 32; see also Thomas H. Dyer, Presentation to the Florida Senate Select Committee on Water (Jan. 8, 1996) (notes on file with author) (reporting that the public owns 7.7 million acres of land in Florida and 1.8 million of those acres are owned by the water management districts). Florida has state-owned lands that are controlled by a number of agencies, including DEP, the five water management districts, the Department of Agriculture and Consumer Services, the Game and Fresh Water Fish Commission, and many local governmental units. See P-2000 REPORT, *supra* note 69, at 2.

71. See Mary A. Kumpfe, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author). Authority for water resource management is shared by the DEP and the water management districts. However, DEP has general statutory authority over the water management districts. See HOUSE REPORT, *supra* note 6, at 4; see also FLA. STAT. § 373.016 (1995)).

72. See WMDRC REPORT, *supra* note 16, at 7 (recommending legislative committee oversight of the water management districts in their operational and budgetary priorities); see also Lewis, *supra* note 68.

73. See Kathleen Laufenberg, *Water District Legislation to Make Big Splash This Year*, FLA. ENVIRONMENTS, Jan. 1996, at 6 (quoting Bart Bibler, former employee of DEP and current private consultant).

74. Leisner, *supra* note 1, at 8 (quoting Florida Governor Lawton Chiles).

Florida receives approximately 250,000 new residents per year, and each new resident increases the demand on the current and future water supply.⁷⁵ The consequent overpumping of the state's groundwater supply, which is directly associated with Florida's growing population, has resulted in damage to lakes and wetlands⁷⁶ and acceleration of salt water intrusion into groundwater sources.⁷⁷ Florida's growing population also increases pollution that results from pesticide runoff and factory chemicals, percolating into Florida's water supply.⁷⁸ Although Florida has recently received above average rainfall in some regions, water supply problems persist.⁷⁹

Water problems in the Tampa Bay region provide a noteworthy example of the havoc that population growth, development, and the lack of a sufficiently integrated regional water supply plan can wreak upon an area. Hillsborough County residents have complained for years that lakes are being depleted and polluted by new development, over-pumping of well fields, and storm water runoff.⁸⁰ Nearby Pasco County waters are threatened as well.⁸¹ Years ago, with an eye toward future development, St. Petersburg received permits to pump water from well fields located north of the city.⁸² The Southwest Florida Water Management District issued these permits to the West Coast Regional Water Supply

75. See TASK FORCE REPORT, *supra* note 5, at 1.

76. See Leisner, *supra* note 1, at 8.

77. See HOUSE REPORT, *supra* note 6, at 7.

78. See Northwest Florida Water Management District Executive Director Douglas Barr, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1995); see also Commentary, *Reasonable Water Restrictions*, TAMPA TRIB., Dec. 24, 1995, at C2 [hereinafter *Reasonable Water Restrictions*].

79. See News Release of the Southwest Florida Water Management District, *District Prepares to Deny St. Pete Permits*, at 1 (July 12, 1996) (on file with the author) [hereinafter *District Prepares*].

80. See Jackie Ripley, *Ravaged Lakes Get Ray of Hope*, ST. PETE TIMES, July 17, 1995, at 1B; see also News Release of the Southwest Florida Water Management District, *District Denies St. Petersburg Permits*, at 1 (July 15, 1996) [hereinafter *District Denies*] (discussing the damage to thousands of acres of Hillsborough County and Pasco County Lakes and wetlands).

81. See Ripley, *supra* note 80, at 1B; see also *District Denies*, *supra* note 80, at 1.

82. See *District Denies*, *supra* note 80, at 1.

Authority⁸³/St. Petersburg, the city of St. Petersburg, and the West Coast Regional Water Supply Authority/Hillsborough County.⁸⁴ The status of these municipal well fields is now at issue and presents a complex regional water supply problem.⁸⁵

In response to the environmental issues raised in connection with pumping activities at the above-mentioned well fields, the Southwest Florida Water Management District has taken action to replenish nearby lakes and wetlands.⁸⁶ However, the failure to resolve a number of disputed issues in the region resulted in intense conflict that ultimately culminated in litigation.⁸⁷ Such litigious conflict does not come without a cost, and this water supply conflict is costing the taxpayers millions of dollars.⁸⁸ By comparison, North Florida's Suwannee River Water Management District is blessed with a "very clean water supply."⁸⁹ Yet even the

83. The West Coast Regional Water Supply Authority's mission is to provide member governments with adequate water supplies. Member governments include: City of Tampa, City of St. Petersburg, City of New Port Richie, Hillsborough County, Pasco County, and Pinellas County.

84. Telephone Interview with Michael Molligan, Southwest Florida Water Management District (Aug. 2 & 8, 1996) (notes on file with author); see also Waldo Proffitt, *Pinellas Looks Bad in Water War*, SARASOTA HERALD-TRIB., Feb. 4, 1996, at 3F; News Release of the West Coast Regional Water Supply Auth., *Pasco and Hillsborough Reverse Position on Northwest Hillsborough Regional Wellfield* (July 26, 1996) (discussing the recent status of the permits at issue).

85. See *District Prepares*, *supra* note 79, at 1.

86. See *Reasonable Water Restrictions*, *supra* note 78, at C2.

87. See *District Denies*, *supra* note 80, at 1 (reporting that the Southwest Florida Water Management District has worked for two years to settle this dispute but will now go to court to resolve issues regarding environmental damage). Recognizing its role as a leader in solving problems associated with the West Coast's water needs, the West Coast Regional Authority formulated agreements presented to the Board of Directors of the Authority on December 12, 1996. The goals stated in the agreement are to "(a) preserve[] the rights of member governments to represent the interests of their constituents in water supply facility matters; (b) reduce[] or eliminate[] Member Government future litigation concerning water supply issues; and (c) increase[] the certainty of implementing water supply planning and development decisions approved by a majority of the Authority's Board of Directors." Memorandum from Donald D. Conn, General Counsel, West Coast Water Supply Authority, to Board of Directors, West Coast Water Supply Authority (Dec. 12, 1996) (attached agreements).

88. See *id.* at 2.

89. David Fisk, Assistant Executive Director, Suwannee River Water Management District, Presentation to the Florida Senate Select Committee on Water Policy (Jan. 8, 1996) (notes on file with author).

water quality in this region has declined due to population-associated effects. Contaminants, including gas and industrial solvents, now threaten this once pristine water supply.⁹⁰

Florida's panhandle region has pollution problems of its own. Peanut farming in Jefferson County, industrial solvents in Leon and Escambia Counties, and chloride concentrations in Okaloosa and Walton Counties have created pollution sources that threaten water quality.⁹¹ Ten of Florida's twenty rivers run interstate in this region, through Georgia or Alabama, requiring coordination among all three states to ensure reduced pollution of the rivers and basins.⁹² Furthermore, the Northwest Water Management District, which covers the bulk of the panhandle region, must finance its projects through reduced millage rates.⁹³ Insufficient funds prevent the district from financing a program to determine the minimum flows and water levels in this region of Florida, a determination considered critical to water supply planning.⁹⁴

Drainage of Florida's wetlands for agricultural use has caused more damage to the state's environment than any other type of development.⁹⁵ In South Florida, agriculture comprises the area's dominant land use, creating water problems for the area.⁹⁶ The needs of sugar farmers and protection of the Everglades clash to provide a highly publicized agricultural versus environmental

90. *See id.*

91. *See* Barr, *supra* note 78.

92. *See id.*

93. *See* FLA. CONST. art. VII, § 9(b). Northwest Water Management District is authorized to levy up to 0.05 mill for water management purposes. The other four water management districts are authorized to levy up to 1.0 mill. *See id.*

94. The minimum flow is "the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area." FLA. STAT. § 373.042(1) (1995). The minimum water level "shall be the level of groundwater in an aquifer and the level of surface water at which further withdrawals would be significantly harmful to the water resources of the area." *Id.* § 373.042(2). Although asked to determine minimum flows and levels over 20 years ago, no water management district has completed this task. Many believe that had this task been completed in a timely fashion, some regions of Florida might not be in their current state of crisis. *See* Fla. S. Select Comm. on Water Policy, unpaginated draft transcript of proceedings (June 22, 1996) (on file with committee).

95. *See* LUTHER J. CARTER, THE FLORIDA EXPERIENCE: LAND & WATER POLICY IN A GROWTH STATE 26 (1974).

96. *See* SUSTAINABLE S. FLA. REPORT, *supra* note 52, at 28.

water conflict in the region.⁹⁷ The extensive planting of sugar, which demands substantial draining of the Everglades, is the underlying problem.⁹⁸ The phosphorus pollution that results from the drainage of this contaminated water harms the Everglades' delicate environment and ecosystem.⁹⁹ Additionally, Broward County's continuing practice of allowing development in the Everglades attracts more water consumers to the area, diminishing the area's storage and recharge capacity.¹⁰⁰ The disruption of the area's natural hydrologic system seriously threatens the Everglades,¹⁰¹ as evidenced by the region's frequent extended water shortages.¹⁰²

VI. RECOMMENDATIONS

Rapid population growth, pollution of groundwater supply, and insufficiently coordinated growth management plans emphasize the need for answers concerning future water supply planning. This section outlines suggestions for more effective water resource management. Many of the following suggestions are similar to those listed in the water resources policy section of the State Comprehensive Plan, originally enacted over a decade ago.¹⁰³

The first recommendation stresses leadership and coordination in planning. The state government elected to take responsibility for

97. See generally U. S. GENERAL ACCOUNTING OFFICE, REPORT TO CONGRESSIONAL REQUESTERS, RESTORING THE EVERGLADES: PUBLIC PARTICIPATION IN FEDERAL EFFORTS (1995) [hereinafter EVERGLADES REPORT] (discussing agricultural pollution and the federal government's 1988 lawsuit against two Florida agencies for failure to enforce the state's water quality standards, which led to the 1994 enactment of Florida's Everglades Forever Act).

98. See *Dialogue*, FLA. ENVIRONMENTS, Jan. 1996, at 12 (interviewing Nathaniel Reed, a member of the governing board of the South Florida Water Management District).

99. See *The History of the Taming of the Everglades* (CNN television broadcast, Nov. 5, 1994) (quoting Charles Lee, Senior Vice President of the Florida Audubon Society) [hereinafter *History*]; see also EVERGLADES REPORT, *supra* note 97, at 5 ("Phosphorus—a plant nutrient—is carried in runoff water from sugar farms to the Everglades, where it supports the growth of cattails, which choke out the native grasses.").

100. See *History*, *supra* note 99.

101. See HOUSE REPORT, *supra* note 6, at 6.

102. See *id.*

103. See FLA. STAT. § 187.201(8)(b) (1995).

growth management¹⁰⁴ and water management¹⁰⁵ and must follow through on this responsibility by addressing the growing concerns about water supply. DEP must acknowledge its obligation to the public in the area of water supply by taking action based on its statutory authority for water oversight.¹⁰⁶ Local governments, as well as regional entities and the appropriate water management district, must comprehensively coordinate the water supply needs in their region.¹⁰⁷ In so doing, they should include a consideration of alternative water supplies prior to the issuance of any development permit that will adversely impact local water supply, recharge capacity, or the environment.¹⁰⁸

Though an economically unpopular idea, responsible growth must be achieved to avoid future difficulties. If there is an inadequate water supply available, or if there is a continuing water crisis, the limited recharge capacity regions of Central and South Florida may face economic hardship.¹⁰⁹ Coordinated management of Florida's population growth, development, and water resource availability should be assessed by the state's water management districts, state agents, and local and regional planners when engaging in future planning efforts.¹¹⁰

A second recommendation provides that, in addition to the necessary coordination between state and local planners, regional planning components must be emphasized when formulating water policy.¹¹¹ The state comprehensive planning process requires regional plans to specifically address solutions to problems

104. See *id.* § 187.101(1) (stating that the State Comprehensive Plan will guide long-range policies for the implementation of orderly social, economic, and physical growth of Florida).

105. See *id.* § 373.016(2) (declaring the policy of the state to provide for the management of water and related land resources).

106. DEP is the oversight agency for the water management districts. See FLA. STAT. § 373.016 (3) (1995).

107. See *id.* § 163.3161(2).

108. See, e.g., Telephone Interview with Michael Molligan, *supra* note 84 (stating that the Southwest Florida Water Management District uses an environmental resource permitting scheme prior to granting permits for larger developments).

109. See discussion *supra* Part II.

110. See, e.g., FLA. STAT. § 187.201(8)(b)(5). One policy is to ensure that new development is compatible with existing local and regional water supplies. See *id.*

111. See *id.*

of “greater than local” concern.¹¹² DEP is currently required to develop a state water plan with the assistance of the water management districts.¹¹³ Each of the five water management districts is required to provide technical assistance to local governments in developing their local comprehensive plan.¹¹⁴ For example, the Southwest Florida Water Management District produces a needs and sources document for local use, which estimates potential water needs over the next several years.¹¹⁵ Such regional water management information is available to all local governments,¹¹⁶ and local plans should utilize this existing material when considering long term or potential water resources in their region.

The water management districts deserve reproach for failing to complete an important facet of their planning responsibility: the determination of minimum water flows and levels.¹¹⁷ Although a major obligation of the water management districts, efforts to set minimum flows and levels have reportedly been inconsistent or have occurred after the water source is already stressed from withdrawals.¹¹⁸ Information on minimum flows and levels is a critical component of the districts’ resource material for regional planning purposes, and data on priority or overstressed waters should be concluded in a timely manner.¹¹⁹

112. FLA. STAT. § 186.502(3).

113. See *id.* § 373.036. The state water use plan, together with water quality standards, constitute the Florida water plan. See *id.* § 373.039.

114. See *id.* § 373.0391(1).

115. See Telephone Interview with Michael Molligan, *supra* note 84.

116. See *id.*

117. See HOUSE REPORT, *supra* note 6, at 17 (discussing the establishment of minimum flows and levels as a statutory requirement and as a responsibility of the water management districts).

118. See *id.*

119. Senate Bill 2552, which was introduced by Senator Latvala in the 1996 Legislative session, addresses the issue of minimum flows and levels, defines the term “independent scientific peer review,” provides for funding to the West Coast Regional Water Supply Authority, and provides for executive oversight of water management district budgets. Fla. SB 2552 (1996). In the 1996 session, the Legislature passed and the Governor approved a companion bill, Committee Substitute for House Bill 2385 and 2399. See 1996 Fla. Laws ch. 96-339 (to be codified at FLA. STAT. §§ 373.019, .042, .116, .1963, .536).

A third recommendation focuses on the State Comprehensive Plan's "local supply first" policy regarding water resources.¹²⁰ Though all sixty-seven Florida counties reportedly support the local supply first policy,¹²¹ the state as a whole may better benefit from inter-district transfers of water, directly facilitated by DEP or the appropriate water management district. Given the extremely dissimilar geographical characteristics and recharge capacity between the various regions of Florida,¹²² this suggestion requires further research to avoid inadvertent harm to the environment.

A fourth recommendation concerns conservation.¹²³ Reduction in water use and the exploration of innovative techniques for increasing water supply are essential components to maintaining an adequate water supply in Florida. For example, implementing simple conservation techniques could result in a 40% reduction in drinking water use.¹²⁴ Other innovative concepts, such as water runoff reservoirs, cisterns, and the use of reclaimed wastewater, should also be encouraged.¹²⁵ Such techniques could be

120. See FLA. STAT. § 187.201(8)(b)(3) (1995). The statute encourages "the development of local and regional water supplies within water management districts instead of transporting surface water across district boundaries." *Id.*

121. See Amy Ellis, *Citrus Water Supply Gets Protection*, HERNANDO TIMES, Dec. 13, 1995, at 1B.

122. See discussion *supra* Part II.

123. See FLA. STAT. § 187.201(8)(b)(11) (stating as policy the promotion of water conservation).

124. See Anna M. Yaccarino & Carol A. Wisler, Letter to the Editor, *Area's Water Sources Must Be Protected*, TAMPA TRIB., Dec. 3, 1995, at C3 (discussing a study conducted by the league of Women Voters in Hillsborough and North Pinellas counties and the city of St. Petersburg); see also William D. Johnson, *Editorial*, ST. PETE. TIMES, Jan. 3, 1996, at A13 (discussing efforts to conserve, including the delivery of over 25 million gallons of recycled water each day for lawn irrigation and the distribution of over 130,000 water conservation kits to residential customers). In the past, St. Petersburg's efforts have been identified as a model for successful water conservation initiatives. See Letter from William Johnson, Director of Public Works, City of St. Petersburg, to Peter Hubbell, Executive Director, Southwest Florida Water Management District 2 (May 20, 1996) (on file with author); see also Memorandum from Honey Rand, Director of Public Communications, Southwest Florida Water Management District, to Governing Board and Basin Board Members, District Staff (June 21, 1996) (on file with author).

125. See Yaccarino, *supra* note 124, at C3 (discussing a study conducted by the League of Women Voters in Hillsborough and North Pinellas counties and the City of St. Petersburg); see also FLA. STAT. § 187.201(k)(b)(11) (promoting reuse).

incorporated into future development efforts in providing non-potable water for purposes other than consumption.¹²⁶

Legend's Field, the New York Yankees Spring Training Complex Conservation Project in Tampa, provides an excellent example of water reuse. The complex employs an on-site recycling system for stormwater, and an underdrain system is incorporated into the architectural plans.¹²⁷ The underdrains collect excess rainfall and irrigation and then route the water to retention ponds.¹²⁸ This water is later used for ball field and landscape irrigation.¹²⁹ The conservation benefits of this system are enormous, with eighteen million gallons of groundwater saved annually. Because the water is retained and reused on-site, regional water quality will also benefit.¹³⁰ Legend's Field also utilizes Xeriscape,¹³¹ which is a landscape method to maximize conservation by utilizing specific plants and trees that naturally conserve water resources.¹³² Future development should be encouraged to include similar water-saving landscape and reuse methods.

A final recommendation for improved water policy calls for encouraging and/or investigating desalination efforts.¹³³ The majority of all desalination plants in the United States pump brackish water from beneath the ground.¹³⁴ As saltwater intrusion

126. *See id.*

127. *See* SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, CONSENT AGENDA & STAFF RECOMMENDATION (1995).

128. *See id.*

129. *See id.*

130. *See id.*

131. *See id.*

132. *See generally* FLA. STAT. § 125.568(1) (1995) (stating that the Legislature considers Xeriscape, a landscaping method that uses site-appropriate plants and an efficient watering system as a means to conserve water).

133. *See, e.g.,* FLA. STAT. § 187.201(8)(b)(1) (encouraging the promotion of desalination and reverse osmosis). *See generally* Ronald A. Christaldi, Note, *Sharing the Cup: A Proposal for the Allocation of Florida's Water Resources*, 23 FLA. ST. U. L. REV. 1063, 1086-89 (1996) (discussing desalination efforts in Florida and raising concerns over the practicality of the process and the resulting environmental effects).

134. *See* Kurt Loft, *Symposium to Put Focus on Desalination Seawater Plant*, TAMPA TRIB., Oct. 30, 1995, at 1. Approximately 150 of the nearly 1000 desalination facilities in the United States are located in Florida. *See id.*

continues to threaten the groundwater supply in some areas, desalination may become a more practical and necessary alternative for processing water.¹³⁵ Though there are many desalination facilities in Florida, Dunedin provides a good example of a successful reverse osmosis system.¹³⁶ The Dunedin plant is "totally self-reliant," produces water for less than eighty cents per thousand gallons, and the water produced complies with safe drinking water regulations.¹³⁷ The Dunedin plant should serve as a model for local governments intending to pursue this water resource in Florida.

VII. CONCLUSION

When one thinks of Florida, one thinks of water. As one of Florida's most basic resources, water is necessary not only for human survival but for the maintenance of environmental quality as well. Although many state, local, and regional planning requirements are currently in place in Florida, the water supply planning element is a weak link in the growth management chain.

The recommendations of the Land Use and Water Planning Task Force and the House Select Committee on Water Policy Staff Report have raised public awareness and brought greater focus to this issue. The laws and agencies governing water supply policy currently exist. Now the local, regional, and state entities must work together in future planning efforts to effectively and efficiently address water supply planning. Regional coordination is the key to successful planning in all areas, especially those areas concerning a crucial, but exhaustible resource such as water. Water management is sure to be an important issue in the 1997 Legislative Session. Perhaps these suggestions can be implemented in future water planning proposals to alleviate Florida's increasing water supply dilemmas.

135. See HOUSE REPORT, *supra* note 6, at 7 (discussing the acceleration rates of saltwater intrusion, which can be as high as thirty feet per year in some areas).

136. See Nancy Argenziano, Letter to the Editor, "Desal" Will Keep the Bay Area Rolling Along Without Thirst, TAMPA TRIB., Apr. 9, 1995, at C3.

137. See *id.* (stating that the plant in Dunedin produces water which will meet the more stringent regulations required by the Safe Drinking Water Act).

BOOK REVIEW

THOMAS LUNDMARK*

INTRODUCTION TO U. S. ENVIRONMENTAL LAWS. BY EDWARD E. SHEA.
OCEANA PUBLICATIONS, INC., 1995: PP. 106. \$45.00

Having taught and lectured on environmental law in Europe for a number of years, I have noticed a lack of materials designed to introduce foreigners to American environmental law. Occasionally, I have recommended West's *Environmental Law in a Nutshell* (*Nutshell*) by Roger W. Findley and Daniel A. Farber.¹ The *Nutshell* is an excellent introductory book for American law students, but commends itself less to foreign jurists because it presents environmental law from a judge's standpoint. Reminiscent of constitutional law casebooks that begin with *Marbury v. Madison*,² Findley and Farber devote the critical first twenty pages of their small volume (335 pages) to judicial review. Rather than citing and elaborating statutes and regulations, the *Nutshell* cites and quotes from judicial decisions. The discussion of case holdings and nuances in Chapter Two on federalism and the environment are ineffective because they may confuse foreign audiences and those untrained in the common law.

It is from this vantage point that Edward E. Shea's book, *Introduction to U.S. Environmental Laws*,³ peaked my interest. The advertising circular from Oceana Publications promised that the book would provide "information of critical importance to domestic and international lawyers."⁴ The circular boasted that the book will

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1. ROGER W. FINDLEY & DANIEL A. FARBER, ENVIRONMENTAL LAW IN A NUTSHELL (4th ed. 1996).

2. 5 U. S. (1 Cranch) 137 (1803).

3. EDWARD E. SHEA, INTRODUCTION TO U. S. ENVIRONMENTAL LAWS (1995).

4. OCEANA PUBLICATIONS, INC., ENVIRONMENTAL LAW (1996) (advertising EDWARD E. SHEA, INTRODUCTION TO U.S. ENVIRONMENTAL LAWS (1995)).

teach the reader “the basics of U.S. environmental laws and how they operate.”⁵ This, then, is a very little book (only 106 pages) with a very big job.

In reviewing *Introduction to U.S. Environmental Laws*, I critique the book’s chapters, address inaccurate statements, and identify areas of environmental law that deserve mention. Finally, I expose the major shortcoming of the book: the lack of a coherent structure.

The book discloses that the author, Mr. Edward Shea, is a partner in the law firm of Windels, Marx, Davies & Ives in New York City and is responsible for the firm’s environmental practice.⁶ He has held executive positions with the GAF Corporation and Reichhold Chemicals, Inc.,⁷ and is also the Corporate Secretary of Peridot Chemicals Group.⁸ Mr. Shea has published several books on business topics;⁹ his articles¹⁰ and book¹¹ on lead-based paint probably explain the dedication of an entire chapter (Chapter Sixteen) to laws concerning lead.

Introduction to U. S. Environmental Laws divides into fifteen chapters. A number of the individual chapters in Mr. Shea’s book are quite good. The chapter on the Clean Air Act (Chapter Four) is terse and pithy, as is the chapter on the Clean Water Act (Chapter Five). The chapters on the Resource Conservation and Recovery Act (RCRA) (Chapter Six) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (Chapter Seven) are also very good. In contrast, the chapter on the National Environmental Policy Act of 1969 (NEPA) (Chapter Three) is too skimpy. Errors creep into the discussion. For example, NEPA was

5. *Id.*

6. See SHEA, *supra* note 3, at *About the Author*.

7. *See id.*

8. *See id.*

9. *See, e.g.,* THE ACQUISITIONS YEARBOOK: 1992/1993 (Edward E. Shea ed., 1992); CHARLES A. SCHARF ET AL., ACQUISITIONS, MERGERS, SALES, BUYOUTS, AND TAKEOVERS: A HANDBOOK WITH FORMS (4th ed. 1991).

10. *See* Edward E. Shea & Thomas J. Milligan, *An Overview of the Lead-Based Paint Laws*, ENVTL. MGMT. REV. (1994); Edward E. Shea, *A Proposed Rule under the Residential Lead-Based Paint Hazard Reduction Act*, NAT’L L. J., Dec. 26 1994- Jan. 5, 1995, at B5.

11. *See* EDWARD E. SHEA, LEAD REGULATION HANDBOOK (1996).

passed by Congress in 1969 and took effect on January 1, 1970.¹² Mr. Shea writes that it was “adopted” in 1970.¹³ He also writes: “NEPA does not apply if an agency finds that a proposed action is not major or has no significant impact on the environment.”¹⁴ This sentence is misleading. While NEPA does apply in this instance, the preparation of an environmental impact report is not necessary.¹⁵

The discussion on the limitations imposed by the U.S. Constitution (Chapter Twenty-two) is also inadequate. Most of the chapter centers around state laws that impermissibly burden interstate commerce. Mr. Shea fails to mention the constitutional limitations on the federal government, such as the ambit of the Commerce Clause,¹⁶ which are discussed prominently in Chapter Two of the *Nutshell*.¹⁷ Chapter Twenty-two also suffers from poor proofreading. Mr. Shea writes that the dedication requirement at issue in *Dolan v. City of Tigard*¹⁸ was “an environmental requirement.”¹⁹ On the contrary, *Dolan* belongs to the law of land use, which is not covered in Mr. Shea’s book. Additionally, the requirement of a dedication is not “environmental” as Mr. Shea suggests in his book. Another proofreading fault appears in the paragraph discussing *Dolan* where two other cases²⁰ discussed by Mr. Shea are improperly cited.

Mr. Shea occasionally asserts unsupported opinions in his book. For example, at one point he writes:

12. National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified at 42 U.S.C. §§ 4321-4370d (1994)).

13. SHEA, *supra* note 3, at 3.

14. *Id.* at 4.

15. See 42 U.S.C. § 4332 (“The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act . . .”).

16. See U. S. CONST. art. I, § 8, cl. 3. The importance of this issue is underscored by the Supreme Court decision in *Lopez v. United States*, 115 S. Ct. 1624 (1995), the first decision the Court ruled a federal law unconstitutional on Commerce Clause grounds since *Railroad Retirement Bd. v. Alton Ry.*, 295 U.S. 330 (1935).

17. See FINDLEY & FARBER, *supra* note 1, at 59-64.

18. 114 S. Ct. 2309 (1994).

19. SHEA, *supra* note 3, at 100.

20. See *Bowles v. United States*, 31 Fed. Cl. 37 (1994); *Creppel v. United States*, 41 F.3d 627 (Fed. Cir. 1994).

The safety record for industrial use of radioactive materials has been far better than the record of other major industrial and governmental operations of similar size and complexity. However, public perception of the hazards of radioactive materials has been affected by their early use in weapons and by political controversy.²¹

This bald assumption of opinion is unsupported by citation to authority or even argument. The safety record of the atomic industry can be favorably compared to that, for instance, of the hydroelectric industry. A factual basis for the "public perception of the hazards of radioactive materials" was dramatically provided by Chernobyl.²² The author is obviously aware of the Chernobyl disaster, for he mentions the incident, although he incorrectly places it in Russia.²³

Mr. Shea also fails to fully consider the danger of potential nuclear calamities. The *World Factbook 1993* of the Central Intelligence Agency²⁴ specifies one calamity in waiting arising from radioactive wastes dumped into an open reservoir in Estonia only a few dozen meters from the Baltic Sea.²⁵ In the 1992 National Report of Estonia to the United Nations Conference on Environment and Development,²⁶ officials related:

In Sillamäe, radioactive waste of the chemical and metal production plant, which formerly belonged to the Soviet military industrial complex (and has earlier been dealing with concentration of Uranium), has been dumped in a tailing which lies on the coast of the Gulf of Finland. The tailing includes an estimated 1200 tons of Uranium, 750 tons of Thorium; the activity of Radium exceeds 7 kCi. Radioactively polluted areas cover over 100 ha, having impact on the

21. SHEA, *supra* note 3, at 93.

22. On April 26, 1986, a Chernobyl nuclear reactor, located approximately 70 miles from Kiev, exploded and released a cloud of radioactivity into the air. See Bob Sylvia, *It's Long Way From Kiev to Bryte*, SACRAMENTO BEE, Dec. 17, 1989, at D1. Approximately 70% of the radioactive fallout that resulted from the Ukrainian explosion landed in nearby Belarus. The explosion caused 26 immediate deaths. See Sharon Sheridan, *Bitter Water, Blessed Hope*, STAR-LEDGER, May 30, 1996, at 006.

23. See SHEA, *supra* note 3, at 53.

24. CENTRAL INTELLIGENCE AGENCY, *THE WORLD FACTBOOK* 121 (1993).

25. See *id.*

26. MINISTRY OF THE ENVIRONMENT, REPUBLIC OF ESTONIA, NATIONAL REPORT OF ESTONIA TO UNCED 1992 28 (1992) (prepared for the United Nations Conference on Environment and Development which met in June of 1992).

health of local inhabitants. Since the yearly amount of precipitation considerably exceeds evaporation, the washed-out toxic compounds can reach both the groundwater and the sea. Risk assessment needs to be carried out and a safe solution found for the conservation of the tailing.²⁷

Even though Chernobyl and Sillamäe are not located on American soil, they present real hazards, not merely “political controversy.”²⁸

On the other side of the environmental fence, Mr. Shea writes: “The most important result of the environmental laws may be the requirement that foresight be applied to the environment.”²⁹ Here, he alludes to the “precautionary principle,”³⁰ which deserves elaboration. The precautionary principle is important considering the uncertainty surrounding most environmental issues, especially in the setting of standards. Some would go so far as to say that no measure should be undertaken unless one can prove that no significant environmental harm will result. In the civil law of Germany, the application of this principle results in shifting the burden of proof in environmental cases: the party who changes the

27. *Id.*

28. SHEA, *supra* note 3, at 93.

29. *Id.* at 104.

30. The “precautionary approach” (or principle) was adopted as Principle 15 in the United Nations Conference on Environment and Development. See Conference on Environment and Development: Rio Declaration on Environment and Development, June 3-14, 1992, 31 I.L.M. 874, 879 (adopted on June 14, 1992) (stating that “[i]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities”).

According to the precautionary principle, environmental policy should stay one step ahead of the problems of environmental degradation by building a margin of safety into all decisionmaking. Potential environmental degradation should be anticipated and prevented, and the causes of existing environmental degradation be attacked. See *id.* Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. See *id.* Indeed, if adverse environmental effects cannot be totally avoided, then they should be mitigated to the extent reasonably feasible. Special attention should be paid to the cumulative impact of activities whose individual environmental impact may be slight. The most important tool for implementation of this ethic is environmental planning and, specifically, assessment of expected environmental effects by a report such as an environmental impact statement and land use plan. See *id.*

environmental status quo has the burden of establishing the lack of proximate cause.³¹

In Chapter One (Overview), the reader learns that the major environmental laws in the United States are federal. Local governments are said to have laws that “supplement” federal and state laws.³² Without explicitly saying so, the author has excluded from the coverage of his book the vast areas of land use controls and of nature conservation in parks, nature protection areas,³³ and related classifications of land. These exclusions are justifiable in a book this brief. However, readers should be informed of these exclusions.

Most chapters in Mr. Shea’s book summarize one federal environmental law. These laws include: NEPA (Chapter Three), the Clean Air Act (Chapter Four), the Clean Water Act (Chapter Five), RCRA (Chapter Six), CERCLA (Chapter Seven), the Emergency Planning and Community Right-to-Know Act (EPCRA) (Chapter Eight), the Toxic Substances Control Act (Chapter Nine), the Safe Drinking Water Act (Chapter Eleven), the Federal Insecticide, Fungicide and Rodenticide Act (Chapter Twelve), the Hazardous Materials Transportation Act (Chapter Thirteen), the Marine Protection, Research and Sanctuaries Act (Chapter Fourteen), the Occupational Safety and Health Act (Chapter Fifteen), and the Oil Pollution Act (Chapter Seventeen). Unfortunately, these enactments are not grouped in any perceivable order. Indeed, the explication of the major federal laws is interrupted by chapters entitled Laws Relating to Asbestos Containing Materials (Chapter Ten) and Laws Relating to Lead (Chapter Sixteen), both which deal in part with state law.

This *mélange* of legislation highlights the central disappointment of the book: its failure to deliver the systematic structure it promises. The book merely summarizes and occasionally comments upon each of the major federal laws listed in compendia such as the Bureau of National Affairs’ *U.S.*

31. See REINER SCHMIDT & HELMUT MÜLLER, *EINFÜHRUNG IN DAS UMWELTRECHT* 4 (3d ed. 1992).

32. See SHEA, *supra* note 3, at 1.

33. Nature protection areas are covered in the last chapter of the *Nutshell*. See FINDLEY & FARBER, *supra* note 1, at 255.

Environmental Laws.³⁴ Ideally, the introduction should define what the author means by “environment”³⁵ and should discuss the basic structure of environmental law. As presently (dis)organized, the book suggests that environmental law is an unstructured chaos of federal, state, and local regulation.

To remedy this shortcoming, I suggest the following structure: the discipline of environmental law should be distinguished from land use law. Land use law complements city and regional planning, which regulates the uses of property in relation to other property within the jurisdiction of a particular agency. Nature protection legislation should be treated separately within environmental law. Nature protection laws protect and enhance the world of nature excluding mankind (like land forms, flora, and fauna). Most scholars include nature protection within the scope of environmental law.³⁶ In his book, Mr. Shea follows the scholarly pattern, for he includes a chapter entitled *Laws Protecting Wildlife, Fish, Plants and Marine Mammals*.³⁷

The primary purpose of environmental law is the protection of natural resources from despoliation and degradation by pollution. The laws encompassed by this definition can be grouped according to their emphasis, that is, whether they focus on protecting a resource or on restricting a pollutant. By making this distinction, the legislative material acquires contours that make it more understandable and accessible. This division between protection of resources versus prohibitions against pollutants yields the following: (1) federal laws that focus on the protection of the water resource, including the Clean Water Act (Chapter Ten), the Safe

34. U. S. ENVIRONMENTAL LAWS (Wallis E. McClain, Jr. ed., 1995). This compendium does not include OSHA, which Mr. Shea summarizes in Chapter Fourteen of his book.

35. See Thomas Lundmark, Book Review, 21 *ECOLOGY L.Q.* 1073, 1074-76 (1994) (reviewing PATRICIA W. BIRNIE & ALAN E. BOYLE, *INTERNATIONAL LAW AND THE ENVIRONMENT* (1993) (stating “[A] legal definition of the environment should have as its object the protection and enhancement of the natural environment (defined as air, water, earth, and forms of life that are not unreasonably injurious to humans), rather than protection of humans themselves or the activities of man, i.e., the environment created by humans”). For a broader definition, see THOMAS F.P. SULLIVAN ed., *ENVIRONMENTAL LAW HANDBOOK* 1 (13th ed. 1995).

36. See, e.g., FINDLEY & FARBER, *supra* note 1, at 255; THOMAS J. SCHOENBAUM & RONALD H. ROSENBERG, *ENVIRONMENTAL POLICY LAW* 292 (2d ed. 1991).

37. See SHEA, *supra* note 3, at 88.

Drinking Water Act (Chapter Eleven), and the Rivers and Harbors Act of 1899 (discussed in Chapter Two); (2) federal laws to protect the air resource such as the Clean Air Act (Chapter Four); and (3) federal laws like RCRA (Chapter Six) and CERCLA (Chapter Seven), which protect the soil resource.

Federal laws that focus on the pollutant rather than the resource include most of the other laws that Mr. Shea discusses: the Toxic Substances Control Act (Chapter Nine), the Federal Insecticide, Fungicide and Rodenticide Act (Chapter Twelve), the Hazardous Materials Transportation Act (Chapter Thirteen), and the Oil Pollution Act (Chapter Seventeen). This group would also encompass the chapters on Noise Control Laws (Chapter Nineteen) and on Laws Governing Radioactive Materials and Wastes (Chapter Twenty).

The above suggested division of the chapters of *Introduction to U.S. Environmental Laws* omits the chapters on NEPA (Chapter Thirteen) and EPCRA (Chapter Eight). These two laws can usefully be discussed together. In part, EPCRA extends the philosophy of NEPA, that the public has a right to full information about environmental risks, and that serious risks should be avoided.³⁸

State laws are mentioned in Chapter One (Overview), Chapter Three (NEPA), Chapter Six (RCRA), Chapter Sixteen (Laws Relating to Lead), and Chapter Twenty-three (State Laws). Due to its short length, Mr. Shea's book cannot be expected to do justice to state and local legislation. Mr. Shea does warn the reader "that most state environmental agencies are major, fully staffed organizations."³⁹ He also notes that *some* states have laws similar to NEPA,⁴⁰ although there are actually about twenty such states.⁴¹ State environmental law includes countless nature protection provisions governing coastal areas,⁴² lakes,⁴³ rivers,⁴⁴ trails,⁴⁵

38. See 42 U.S.C. §§ 11001-11050 (1994).

39. SHEA, *supra* note 3, at 100.

40. See *id.* at 5.

41. See SCHOENBAUM & ROSENBERG, *supra* note 36, at 155.

42. See, e.g., California Coastal Act, CAL. PUB. RES. CODE § 30000-30012 (West 1984 & Supp. 1996).

wetlands,⁴⁶ flood plains,⁴⁷ parks,⁴⁸ state forests,⁴⁹ and natural areas.⁵⁰ States independently regulate mining.⁵¹ Private forests are directly regulated, if at all, only by state, local, and regional governments.⁵² Mr. Shea should consider mentioning these laws in the chapter entitled *Laws Protecting Wildlife, Fish, Plants and Marine Mammals* (Chapter Eighteen).

In future editions, Mr. Shea might wish to change his title to "Federal Environmental Regulation in the U.S." to clarify the scope of his book's coverage, or better yet: "Summary of Major Federal Environmental Legislation." Titled in this way, the book delivers what it promises. And I just might recommend it to foreign jurists.

43. See, e.g., Wisconsin Navigable Waters Protection Act, WIS. STAT. ANN. §§ 144.26-.266 (West 1989 & Supp. 1995).

44. See, e.g., California Wild and Scenic Rivers Act, CAL. PUB. RES. CODE §§ 5093.50-.69 (West 1984 & Supp. 1996).

45. See, e.g., MASS. GEN. LAWS ANN. ch. 132A § 12 (West 1991 & Supp. 1996); N.H. REV. STAT. ANN. ch. 216-D:1 (1989 & Supp. 1995).

46. See, e.g., Florida Preservation 2000 Act, FLA. STAT. ANN. § 259.101 (West 1991 & Supp. 1996).

47. See, e.g., Cobey-Alquist Flood Plain Management Act, CAL. WATER CODE § 8400-8415 (West 1992 & Supp. 1996); IOWA CODE ANN. § 455B.261-.281 (West 1990 & Supp. 1996).

48. See, e.g., ARK. CODE ANN. §§ 22-4-102 to -105 (1987 & Supp. 1996); ILL. ANN. STAT. ch. 105 § 466 (3) (West 1993 & Supp. 1996); KAN. STAT. ANN. §§ 74-4502 to-4551 (1992); WIS. STAT. ANN. § 27.01 (West 1989 & Supp. 1995).

49. See, e.g., MONT. CODE ANN. § 77-5-101 (1995); PA. STAT. ANN. tit. 25, §§ 51.1-3 (1967 & Supp. 1996); WISC. STAT. ANN. § 28.04 (1) (West 1989 & Supp. 1995).

50. See, e.g., ALA. CONST. amend. 543 § 2 (13) (1976 & Supp. 1991); COLO. REV. STAT. § 33-33-102 to 113. (1995); GA. CODE ANN. § 12-3-90 to 117 (1996); ME. REV. STAT. ANN. tit. 12, § 8003 (3) (N) (West 1995); PA. STAT. ANN. tit. 32, § 2013-2024 (1967 & Supp. 1996).

51. See, e.g., ALA. CODE § 9-16-1 to 134 (1996).

52. See Thomas Lundmark, *Methods of Forest Law-Making*, 22 B.C. ENVTL. AFF. L. REV. 783, 785 (1995).